

Why robots aren't the enemy

 blogs.lse.ac.uk/businessreview/2017/04/24/why-robots-arent-the-enemy/

4/24/2017



It is scary fun to think that the robot buddy who is making life a bit easier and products a bit cheaper will next week steal your job, that the bot that reads your laptop cookies will destroy your freedom of choice, or that super-intelligent algorithms mean that we will all end up working for machines. I propose, rather, that the current wave of anxiety about robots is lazy thinking that avoids the real and difficult issues caused by technological and economic change.

Society and technology have a love/hate relationship. The technology community see tech history as fascinating and tech innovation as boundless. The doubling of the world's per capita income from \$1 to \$2 per day in twenty years is apparently proof enough of the real world benefits of tech (and trade). For the non-tech community, technology products are irresistible, but technology history is boring, its future is full of risk and tech people, apart from Steve Jobs, have always been dull.

The current threats to jobs may appear particularly acute because they follow the 2008 banking crisis from which real wage growth in Western countries has never fully recovered. Furthermore, the new technologies of mobile communications, artificial intelligence, drones, and self-driving vehicles are unsettling, because they seem to leap out of the pages of science fiction, unlike the previous incremental developments. From the intense media and political interest in these topics, it appears that we are at the start of the digital age. I like to think, however, that it started in earnest in 1965 when I began work as a computer programmer. (This may be egocentric but it is not entirely indefensible).

For five decades I was involved in the rapid rollout and evolution of computer technology and had a ringside seat to watch resulting changes in employment. It is easy to underestimate the enormous changes in employment patterns over those fifty years. The large and cumbersome corporations of the 1960s and 1970s slimmed down, and sometimes disappeared, as computers took on the data capture, record keeping and information provision that had previously been manual processes. The 1980s saw the start of large-scale adoption of personal computers, followed by the switch to Internet standards for communications, the introduction of the worldwide web, and the recent transfer of much of our communications to wireless mobile phones and tablets. These developments created whole new industries and radically remodelled or eliminated old industries; jobs were consequently changed, eliminated or

enriched.

The wave of changes in which I participated was, of course, just another phase of the technology-driven changes that created the industrial revolution, which had, in turn, replaced our previous agricultural economy. The questions arising are: Did we really want to retain those often-tedious jobs that disappeared during the first fifty years of intensive computerisation? Did we really want the arduous and often dangerous jobs in heavy industry and mining in the industrial era? And did we really want the backbreaking and low paid jobs on the land, which characterised preindustrial England? The honest answer to these rhetorical question must be 'no'. It carries a very large 'but', because a job brings not just income, but also self-esteem, independence, and a position in the community. These have often proved worth fighting and sometimes dying for.



Advertising before the internet: A London Street Scene, 1835, by John Orlando Parry, Public Domain

The jobs now under threat include those of drivers, logistics workers, manufacturing workers, retail workers, miners, soldiers, sex workers and even bank robbers. Of course, some of these changes could provide real social benefits. Replacing sex workers with robots could cut people trafficking and other social ills. It is hard to picture a bank robber using a self-driving car. Perhaps the pursuing police car would be replaced by nerdy cops trying to hack software so that the car delivered the villains directly to the police station. Whatever the benefits, it is starkly clear that millions of workers are likely to be made redundant by these developments. It is uncertain, to say the least, that these people will be quickly redeployed, and avoid painful unemployment for at least a while.

Besides unemployment, other serious issues arise. New technologies make the measurement of employee performance easier. This has the real danger of making workers feel like a cog in a machine that has neither tolerance nor understanding. Close quantitative management of people also makes it easier to extract profit and minimise the share of profit going to those without strong bargaining positions. The fragmentation of the workforce also contributes to the lack of representation of workers.

Despite the growth and productivity of the digital economy, there are still many jobs that need to be done. There is a large and growing need for more care workers, and enormous scope for technology support in this sector. Many aspects of education need more staff. Care of the environment is currently neglected, and there are great unmet needs for infrastructure renewal. The big snag is that, with our current economic arrangements, it is almost impossible to fund such work properly. It would also be very challenging, and frequently impossible, to reskill the workers becoming available for these activities. These are urgent questions that need to be addressed.

The challenge, therefore, is to find ways to tap the great wealth that accumulates in the tech and financial sectors, and allocate it to meeting the needs of society. The urgent actions for government should be:

- First, to recognise that technology-driven economic change is potentially unlimited and unstoppable, and that industrial policy needs to be developed on a long-term sustainable basis.
- Second, to encourage innovative economics research, to broaden the purpose of capitalism beyond the maximisation of shareholder returns to the renewal of all aspects of the economy.
- Third, to improve their understanding of modern industries, to establish effective regulatory countervailing powers, to focus on grasping opportunities, and to find ways of alleviating transitional hardships.
- Finally, to promote, rather than oppose, international cooperation without which tackling the issues of trade, taxation and the beneficial use of technology are not possible. This adds up to more pluralism in economic theory, and more cooperation in the management of economic change.

Francis Fukuyama, in 1989, provocatively pronounced the end of history with the apparent triumph of liberal democracy and its associated capitalist approach to economic management. It was premature. Unrestrained, the followers of Milton Friedman and Ayn Rand have recklessly managed the world economies so that the enormous fruits of technological progress and trade liberalisation, both products of societies that have invested in security, infrastructure, welfare and education, have accrued disproportionately to tiny elites. Blaming robots is not the answer. The current tenets of economics need to be challenged and changed, especially the acceptance of financial short-termism. This is work to be done by universities, think tanks, and politicians, at least until the super-intelligent robots are ready to take over.

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Rod Dowler is one of the founders of the Industry Forum, which was established in 1993. A retired KPMG consultancy partner, he has spent a number of years working as a business angel with start-up technology companies. He is a Senior Research Fellow at the [Global Policy Institute](#) and was for 20 years on the board of the [Campaign for Science and Engineering](#). Rod is a Fellow of the Institute of Physics., and is currently concentrating on public policy issues relating to business, such as industrial policy and investment in science. He has a long-term interest in strengthening Britain's role in the EU. After graduating from Oxford with a degree in Physics, Rod worked as a software developer and then in management consultancy. As a consultant, he worked extensively in the financial and technology sectors, and on a range of engagements for the European Commission. He was a partner in KPMG for 15 years, during much of which he led the KPMG European High Technology Practice. This involved international experience in North America, Middle East, Europe and Asia. Most recently Rod has worked on



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