

The future is not easy to predict. About the only thing we can say with confidence is that the future will be different from today – but in what ways, and by how much, is unclear. Those of you who remember a TV programme called *Tomorrow's World*, which talked about future technology, might also remember that its “predictions” almost never happened and, when they did, they did so on far different timescales than the programme predicted.

One of the things that those of us interested in productivity are interested in is the effects of technology on productivity – affecting jobs and roles across a range of sectors (Remember, though, that when productivity is discussed, it is often always about labour productivity; and, in this context, technology looks highly beneficial).

One technology, robots, has been introduced very successfully in labour-intensive industries, performing highly repetitive tasks, and we are also starting to see signs of “intelligence” in such machines. There is, however, a gap – in the areas of flexibility and manipulative skills. Thus we have machines that can beat human beings at chess but cannot pick up a chess piece.

We need to move to a situation where machines can behave more like humans [...] And that might happen not by building “better” machines but by giving humans “assistive technologies”.

Currently there is a move in some industrial sectors to create “co-bots”, machines that work alongside humans but take the heavy lifting and drudgery out of work. This can be particularly beneficial in helping diversify the workforce.

An almost natural, certainly logical, extension of this trend is to provide the assistive technology more directly by adding technology directly to humans, creating “hubots” or cyborgs – long the subject of science fiction.

This blending of man and machine could transform the capability and productivity of humans – but at what price?

We have the technology to do it [...] But do we have the corresponding ideology? Who is discussing the moral and ethical issues that we need to resolve before we enter in to a kind of cyborg arms race?

Is higher productivity worth a few steps towards the end of the human race as we know it?

All these are questions we should be addressing – but we do not see many papers on these topics being submitted to the journal.

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