

The UK can lead by embracing automation

We are in the middle of a fourth industrial revolution. First came mechanisation, then mass production, and most recently automation. Those first steps took us from the field to the factory. Now we are in what has become known as, 'Industry 4.0'.

This is the era in which technological advances connect previously separate areas of manufacturing and logistics, and then intelligent machines are used to optimise the process of production. Think self-optimising production equipment supported by autonomous vehicles and drones.

So, what used to be science fiction is becoming reality in our manufacturing sector. However, while we are generally moving towards a manufacturing industry with truly autonomous systems (meaning systems that optimise and control themselves), we are not there yet.

Despite advances in technology, over 80% of the world's manufacturing plants are still not truly 'connected', meaning that machines are not sending real-time data on their performance. While the leading manufacturers in semiconductors or pharmaceuticals use sophisticated automation technology, most goods are still being produced using traditional equipment supported by manual processes.

This is our opportunity here in the UK. And it is in the UK's best interest to capitalise on this opportunity, by investing ambitiously in innovation, so we can build a sustainable economy for the future.

Although the UK has benefited tremendously from the globalisation of supply chains over the past several decades, there is an argument that we have come to rely too much on imported goods.

In 2020, the UK goods trade balance was a negative £115B – partially offset by a £107B trade surplus in services. Simply put, the UK is over £100B in the hole when it comes to manufacturing.

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On one hand, the classic ‘comparative advantages’ argument would suggest that each country should specialise as far as possible (which – for the UK – would seem to suggest specialising in services). However, on the other hand, there are reasons why any nation, not just the UK, would be well served by enhancing manufacturing capabilities at home.

Geopolitically there is less stability now than there was 20 years ago. While China has been an important supplier of “manufacturing capacity” to the UK, it is probably sensible to not become wholly dependent on the Chinese manufacturing base.

Brexit means disruption to the previous tight integration of European supply chains, and we have to configure the British economy to deal with it in the best possible way.

And, from a sustainability perspective, there is an argument to making more goods closer to where they are used. This is especially true as methods of recycling improve. The UK can then recycle and reuse goods without having to transport them to far corners of the world.

Whichever way you look at it, there are good reasons to invest in improving the British manufacturing base. However, we won’t solve that problem by just “bringing things back from China” – neither do we want to.

The way to make things today is not the same way we made them 20 years ago. And so the ‘industry 4.0’ revolution gives us a unique opportunity to remake British manufacturing for the 21st century.

Manufacturing is no longer dependent on large pools of cheap labour.

Therefore, by investing in automating our manufacturing base, we can improve both the resilience of our economy (by making it less dependent on far-flung supply chains), and increase our productivity and competitiveness by investing in autonomous rather than labour-intensive manufacturing. All of this means that the UK can build more at home.

How can we do this from a practical perspective? We already have natural advantages. Alongside the obvious things like language and time zone, we have a number of assets that position us well: world-class research capabilities, flexible legislation and labour market plus London as a global tech and financial centre. This is quite a combination.

Finally, there are some softer, cultural advantages that put Britain at an advantage. The combination of Anglo-Saxon capitalism with a European style safety net means that we can continue to attract the best and brightest to our innovation economy. Subtle but important in the global race for talent.

As we work to transform the way we make things, we have to remember the other side of the social contract. As we automate our production processes, we must step up our investment in skills so that people whose skills are no longer required to operate legacy machines can learn the competencies they need to be part of the new economy.

As we emerge from the pandemic, the priorities for Britain are clear. We must invest in Industry 4.0 capabilities while supporting and truly “levelling up” our workers. This allows both citizens and the country to take on the opportunities of the 21st-century digital economy. So much opportunity is ahead of us if we can get this right.

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