

The new normal for business post-coronavirus - supply chains and resilience

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Chair: The Rt Hon. the Lord Willetts FRS
Chair, The Foundation for Science and Technology

Speakers: Juliette White
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Professor Lenny Koh
Director, Advanced Resource Efficiency Centre, University of Sheffield
Professor John Loughhead
Chief Scientific Adviser, Department for Business, Energy and Industrial Strategy

Audio/Video Files: www.foundation.org.uk/Events

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JULIETTE WHITE began by setting out the reach of AstraZeneca in the UK, with full end to end processes from discovery to commercial manufacture, around 8500 jobs, and significant value creation and supply chains. The company is responsible for 1% of UK exports, and 24% of UK pharmaceutical exports. Globally, it is based in 26 sites in 16 countries, with an extensive and complex supply network.

The Covid pandemic has shown that pharmaceutical manufacture has been one of the most resilient globally, and it is always critical that for life-saving medicines, supply chains need to be able to withstand disruption, event at a global scale. To achieve this, companies like AstraZeneca have needed both an element of stockpiling, but also fast and responsive supply chains.

AstraZeneca's preparations for Brexit have helped prepare it for the disruption of the Covid pandemic, in three ways. Firstly, the company build additional resilience into their supply chains, stress testing them to identify the weakest links. Secondly, the company reviewed all levels of its inventory, and introduced an additional level of buffer. Thirdly, the company identified new routes

for dispatching medicines. All three have been helpful in dealing with Covid.

During the pandemic, the UK government has worked with the pharmaceutical industry much more closely than previously to tap into the global supply chain. The collaboration can continue as we emerge from the immediate crisis to ensure a vibrant life sciences sector in the UK. Some element of onshoring is needed, but it would be a mistake to flip to rapid onshoring. A sensitive mix of domestic and global sourcing is needed. The key is not to be overly reliant on any one territory. AstraZeneca is building a responsive network, dual sourcing some key products and increasing inventory.

The UK Government already works with industry developing world-leading capabilities, e.g. in the Medicines Manufacturing Innovation Centre in Glasgow and the Vaccines Manufacturing Innovation Centre in Harwell. Industry and government can work together, both to build great innovation within and for the UK, and also create great value for exports.

PROFESSOR LENNY KOH began by noting that the Covid 19 pandemic had meant that 2020 had seen a high point in the World

Uncertainty Index, much higher than previous peaks due to Brexit or the financial crisis of 2008. The economic forecasts for most top economies showed large drops in 2020, and large recoveries in 2021. Predictions she highlighted included the UK (-8.3% in 2020 and +6.0% in 2021), the USA (-6.5% and +4.9%) and the EU (-7.5% and +6.0%). China would still see growth of +1% in 2020 and +8% in 2021, though China's exports will reduce by more than 10% in 2020 due to supply chain disruption and lower demand in the rest of the world.

We have seen shortages of certain items during the Covid pandemic, where there has been increased demand. These shortages have highlighted issues including fragmentation in supply chains, inefficient resources management, and a lack of resilience in supply chain resources sustainability. It is critical for the UK to understand its critical resources and its critical supply chains, and plan accordingly.

If countries are to achieve a green recovery of their economies, it is vital that they look at all three dimensions of economic capital, social capital and environmental capital. By measuring and quantifying these different streams of capital, we can manage supply chain resource sustainability more efficiently.

Critical sectors in the country include materials and manufacturing, telecoms, energy, transport, food, health/pharma/medicine and digital. It is important that resources that are critical to these sectors are protected and more resilient.

The UK is a net importer, with an export deficit of US\$220B. There is an opportunity post-Covid to plan for increased exports in areas where the UK is globally leading, such as medicines and medical devices.

Pre-Covid, priorities for supply chains have focussed on economics rather than environmental aspects. Post Covid, Governments are likely to prioritise supply chain stability, security, sustainability and resilience – meaning that economic, social and environmental factors will all be increasingly important. To achieve this, more collaboration is needed, rather than retraction.

PROFESSOR JOHN LOUGHHEAD noted that for many years the UK has had a very open economy, with a very efficient, just in time method of supply. This has been optimised on operating cost and economic cost, but during the Covid crisis, we have seen certain shortcomings in resilience. There is a trade-off between resilience and efficiency and cost, so if we see resilience as more important going forward, the nature of supply chains will vary.

The nature and resilience of UK infrastructure (both physical and digital) is critical in determining the nature of our supply chains. The Covid pandemic has advanced the application of digital technology in a way that otherwise might have taken years, for example in the dramatic growth in e-commerce. As a result, post-Covid business, particularly retail, will change how they exploit their physical infrastructure going forward.

The current Government has an objective, as set out in the industrial Strategy, for “levelling up” across different regions of the UK. This implies a different distribution of resources, which provides an opportunity for greater regional capability in supply, which in turn helps resilience.

The Covid crisis has shown how companies can be hugely flexible and adaptable, and demonstrated the value that can be achieved when things are done in a different way. This could be useful in developing a green recovery, where processes and systems will need to be different – and potentially more resilient.

There is an important influence of standards in supply chains. We need to work towards different international standards going forward which can support greater resilience.

Finally, Professor Loughhead noted that new technology will enable the creation of new sectors and the evolution of current ones. We need to apply our technological capability with an eye on resilience.

IN THE DISCUSSION, the question was raised about the processes which companies have to determine the level of resilience. In response, the cost of not having resilience was noted, and that companies regularly test their business continuity plans against their ability to respond and the likelihood of the event. It was also noted that increased resilience does not always come at additional cost – if resources are distributed across countries, companies can flex these to match differing financial situations in different locations.

The issue of standards was raised, and whether they can inhibit innovation. In response it was noted that they can do so, and so it was important for new standards to be developed on an outcome rather than a prescriptive basis, and there was scope for innovation in the development of such standards. In response to a question about standards and environmental performance as we move to a low carbon economy, the difficulties of reliable environmental accounting were noted, and the potential role standards could play in this.

Another issue to be raised was the resilience of critical national infrastructure, particularly communications technology, and the opportunity – working with key partners where necessary – to have sovereign oversight of these technologies. It was noted that the supply chain for such critical infrastructure had not been well protected in the past, but the UK should identify technical leaders and develop a protected supply chain for hardware, whilst ensuring they also invest in skills and R&D, which will help for the development of software. It was also noted that such infrastructure is usually comprised of complex systems, where the development and management of the system itself is a significant element of the value and IP. It was usual within such systems to have multiple lines of supply for any key components.

The panel were asked whether supply chains for critical medical supplies should be specifically designated and protected. In response, it was noted that upstream, supply chains were heavily interdependent and complex, with many chemicals sharing the same starting materials. That said, in the recent Covid crisis, the issue has been more about the transport of materials than merely access to them. There are also different considerations for companies and countries with different medicines – whether they make a cost play for more established medicines or an innovation play for newer medicines.

In conclusion, the panel noted that the nature and resilience of supply chains will be of increasing importance as companies and countries emerge from the Covid pandemic. We don't yet have all the answers, but we remain a world with an interdependency of resource, and there is optimism that the economic system will be able to generate the recovery that's needed, with strong supply chains.

Gavin Costigan