The future of industry in the UK

Defining the culture, mindset and technology
that will drive a new age of British industry

O2 business

BLUE DOOR INSIGHTS

Introduction: British industry in evolution

> **"British industry is full of courage, optimism and ingenuity. We have an opportunity to build back stronger and better – an opportunity to evolve, and not just do things the way they used to be done."**
>
> **Jo Bertram, Managing Director, O2 Business[1]**

COVID-19 has radically changed the way that people work and organisations operate. In some cases it has accelerated transformation programmes that were already underway, and in others it has forced organisations to pivot to entirely new business models and ways of operating.

With organisations rewriting their strategic plans to incorporate the new thinking prompted by the pandemic, what does the future look like now for British industry?

1. All quotes in this paper have been taken from the O2 Blue Door Expo 2020 – Future of Industry Panel Discussion

Four key areas of focus

We've pooled the thoughts of business leaders from some of the UK's most dynamic and innovative organisations to understand the shifts we should expect to see over the coming months and years. We present their thinking, strategic approaches and real-world experiences in four key areas:

- **Digital transformation:** With exciting new Industry 4.0 technologies emerging, what are the opportunities for UK businesses to 'build back better' for a sustainable digital future?

- **Data, analytics and AI:** Which capabilities will help organisations to extract more value from the data they collect – and what new risks and challenges might these capabilities create?

- **Innovation:** As the pace of change continues to accelerate, and new technologies emerge, how can British organisations innovate and stay ahead?

- **Cybersecurity:** New technologies mean new cyberthreats, while bad actors also continue to exploit existing weaknesses in organisational security. How can UK plc best protect itself?

Digital transformation: Industries in evolution

How can British business build back better for a sustainable digital future?

Many UK businesses were surprised by how fast they were able to move when the COVID-19 lockdown was introduced. Despite shifting to remote working literally overnight, many found they were still able to meet and even exceed their existing business objectives.

> **"We were online within a matter of days, and there's been zero disruption. In fact, we met and beat our targets for the year."**
>
> **Julie Wardhaugh, Digital and Technology Transformation Chief Architect, British Sugar**

As a result, leaders say attitudes towards digital transformation have completely changed, at both board and employee level. There's now an awareness of how fast the business can move when the will is there, and a new appreciation of the productivity benefits of digital working.

Resistance to change, or 'cultural inertia' as some call it, has been overcome – at least for now. To avoid sinking back into it, businesses will need to nurture a growth mindset, focused on rapid innovation and continuous transformation.

From 5G to chatbots, technology will play a central role

Technology was a critical enabler in the shift to COVID-19-era working, and will continue to play a central role as business and industry evolve. But what got us here won't necessarily take us onwards. We're pushing the current abilities of videoconferencing and collaboration tools to their limits, and new, more advanced tools will be needed to support long term remote working.

> **"If we continue on this journey, the platform and tools [vendors] must rethink how they add value. Video telephony won't be enough for complex problem-solving."**
>
> **Steve Rose, Executive Partner, Nokia Bell Labs Consulting**

In industrial settings, COVID-19 accelerated transformation initiatives that were already underway. Now, a raft of technologies are set to enable the kind of smart factories and smart warehouses that can already be seen in China.

5G will connect sensors and equipment to the cloud, enabling real-time monitoring and preventative maintenance. Edge clouds and AI will enable instant, automated decision-making by autonomous devices and vehicles. Robots and drones will take humans out of harm's way, and the sight of people remotely operating heavy equipment, perhaps using augmented reality, will become commonplace.

In consumer-facing organisations, robotic process automation (RPA) and chatbots will help customers get what they need faster, allowing brands to deliver a superior customer experience. Automating the simpler tasks will free employees to focus on more rewarding, higher-value work. As well as benefiting user organisations, these developments will also create exciting opportunities for innovative entrepreneurs and startups.

> **"If a new technology can drive revenue or cut costs in a meaningful and explainable way, its proposition could easily be very strong."**
>
> **Andrei Brasoveanu, Partner, Accel**

The democratisation of work will create new opportunities for all

Jobs won't go away, but the nature of jobs and work will change. More work will be doable from anywhere – reducing travel, lowering CO_2 emissions, and opening up valuable new talent pools. The democratisation of work will also help to unlock the economic potential of less developed regions. As we start to build back better, there are new opportunities to overcome digital and social exclusion, and businesses can help people from traditionally disadvantaged backgrounds to forge rewarding careers in the new economy.

> **"Social mobility is widening at a time when technological advancement should be closing the gap. It's incumbent on all of us to do something about it."**
>
> **John Roberts, Founder CEO, AO.com**

Data-driven insights:
The role of AI and analytics in a very human world

How can organisations extract more value from their data – and what new risks might that create?

The value of data is only going to grow. Consumers are more aware that their data has value to the organisations they deal with, and they're growing savvier about what those organisations use it for. That's created an intriguing new dynamic: if a customer trusts the organisation to act responsibly with their data, they're often happy to provide more of it in return for something they value.

That's good news for businesses, as long as they're able to pool the data and apply analytics to unlock valuable insights. The more an organisation knows about each customer, the easier it is to create attractive offers tailored to that person or business, driving revenue and increasing loyalty.

> **"The key to unlocking the value of data is to link it all together, so that you can see a full picture of your customer."**
>
> **David Jones, Senior VP of IT, Europe, AEG**

The universe of data is ever expanding, helping organisations to build up an increasingly detailed picture of customer needs, wants and behaviour. Applying analytics to digital touchpoints like instore wifi logins and CCTV streams can provide new insights. In financial services, alternative data – for example, from online spending and ride-hailing apps – can help to inform banking decisions.

Transparency and ethics are key to maintaining customer trust

> **"We valued our data as an asset in its own right, and calculated its value to be £60 billion."**
>
> **Davin Crowley-Sweet, Chief Data Officer, Highways England**

Across industries, data's potential is so great that it's starting to be valued as an asset in its own right. But with great power comes great responsibility. Customer relationships are based on trust, so organisations must keep customers' data safe, and be ethical and transparent about how they use it.

New conundrums are starting to arise: if an app can track a consumer's location, for example, is it always ethical to use that data? Regulations like GDPR provide guidance as to what's acceptable, but the most trusted companies set their standards much higher. If employees are uncomfortable about a proposed use of customer data, that's a red flag that it shouldn't be done.

> **"You need to go beyond the legal requirements, and think about how an individual consumer would feel about their data being used a certain way. That's what gets you from transparency to trust."**
>
> **Chaminga Chandratillake, Chief Analytics Officer, Sainsbury's**

AI brings new challenges around explainability and cybersecurity

These issues will be amplified with increased use of AI. It has immense power to sift through data for patterns and make automated decisions and recommendations. It can augment human decision-making and drive better actions. But companies must be able to explain how it reached a decision, and not rely on automated decisions in matters relating to human lives, livelihoods and life chances.

> **"Explainability is a big thing for us in AI and machine learning. If we can't explain it, then we shouldn't be doing it."**
>
> **Louise Maynard-Atem, Innovation Specialist, Data Exchange, Experian**

The use of AI also brings a new security threat: of bad actors tampering with historical datasets or machine learning models. Injecting false data into historical datasets could drive algorithms to make inappropriate recommendations. This could be a particular risk in critical national infrastructure where the attacker might be a nation state seeking to influence decision-making over a long period.

> **"We'll see attacks materialising where AI models have been influenced by people targeting learning data sets or unsupervised models."**
>
> **Davin Crowley-Sweet, Chief Data Officer, Highways England**

# Driving innovation for a new age of industry

As the pace of change accelerates, how can British organisations innovate and stay ahead?

In a world of continuous, fast-paced change, organisations can't afford to stand still. They must innovate to stay relevant, in demand and financially healthy.

We often associate innovation with huge step changes in how things are done, like Amazon's no-checkout stores, or Uber's crowdsourced taxis. But innovation doesn't have to be big and disruptive, it can also be small and incremental. The key thing is continuous improvement.

> **"Innovation isn't always about big, massive, highly visible stuff. It's about having the mindset to continuously improve."**
>
> **Andy Burton, Group CTO, Very Group**
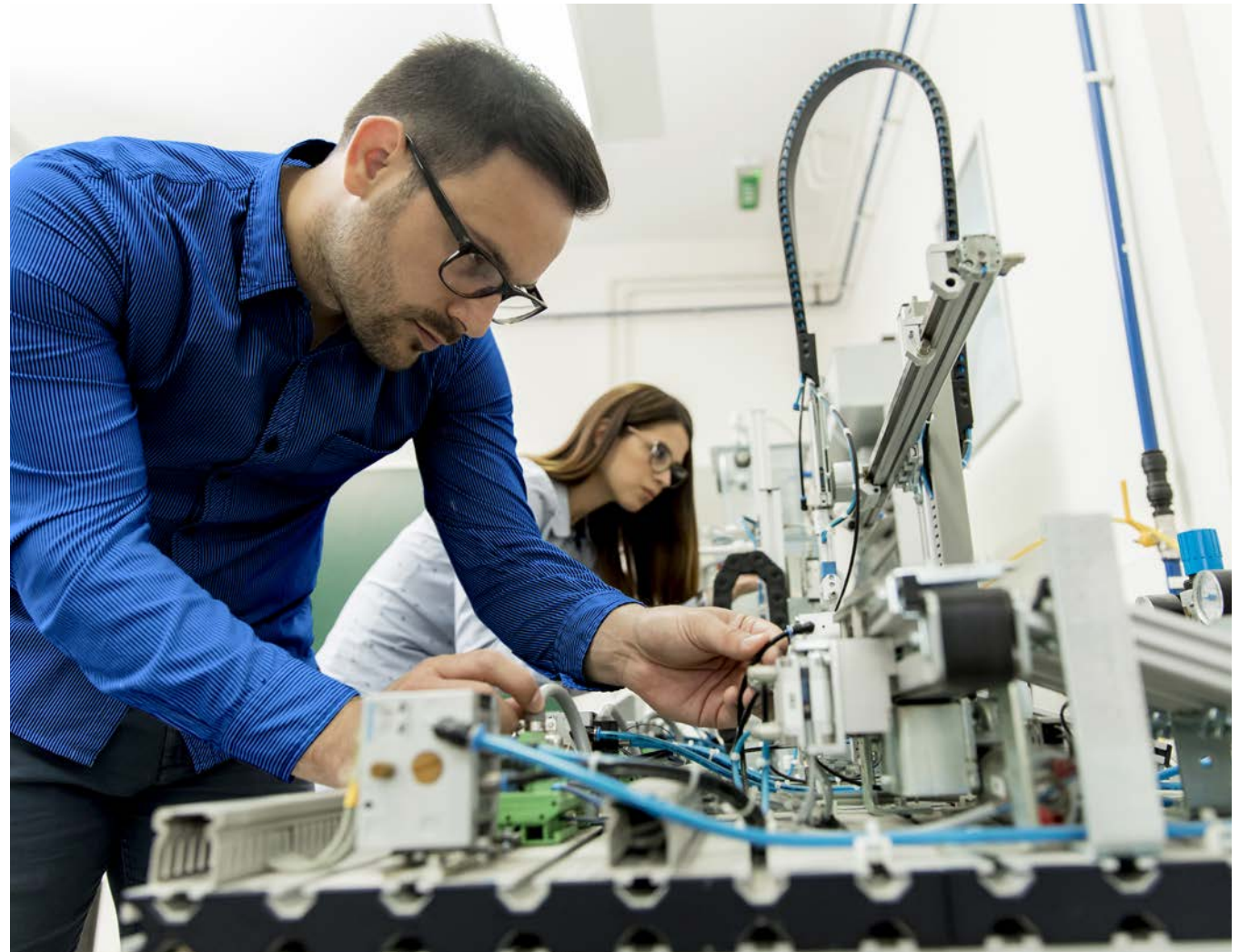
Innovation must be business-led, measurable and scalable

It's easy to be seduced by the latest shiny tech, but innovation must always have a concrete goal, which should align with a wider strategic objective. That means innovation should be business-led not technology-led, and it should genuinely solve a problem, not just shift it elsewhere.

Aligning to business goals will also make the impact of the innovation easier to measure. A good practice is to develop a framework for assessing and prioritising innovation ideas in terms of how they might help the organisation achieve its goals – whether that's cost savings, increased sales, reduced carbon emissions or a better customer experience.

> **"Our innovation ideas always have to relate back to business goals. When we don't do that, things go horribly wrong."**
>
> **Karl Liriano, Head of Innovation, Strategy and Architecture, O2**

A priority area for innovation is improving the customer experience. Customers increasingly expect a seamless experience across channels, so a fruitful place to start is by looking for areas of friction and innovating to solve them. The same applies to internal operations: look for things that are holding people or processes up and see how they could be addressed.

> **"If you've got customers who are willing to engage and tell you how to improve, embrace it. It's hugely powerful."**
>
> **Phil Scully, Group CIO, Costa Coffee**

An innovation culture is critical

Innovation needs a culture in which new ideas can thrive. Diversity – of experience, thought and perspective – is critical to ensure fresh thinking. That could mean involving people from different areas of the business, seeking input from across the supply chain and partner ecosystem, co-creating solutions with customers, or incubating promising startups. In a true innovation culture, both risk and failure are accepted as part of the process, and a growth mindset is a must.

> **"We're very outward looking in our innovation focus; listening to our customers, setting purpose-driven goals, and engaging with a variety of networks from our supply chain to universities."**
>
> **Louise Hunter, Corporate Affairs and Marketing Director, Northumbrian Water Group**

Giving people permission to come up with wild ideas is good for injecting energy into the innovation process, but ultimately the solution needs to be scalable. A great proof of concept is exciting, but the ability to operationalise it across the whole business is the true test of innovation quality.

Failure isn't a bad thing, though: if something that looked good on paper doesn't work in practice, businesses should understand why, and learn from the experience.

> **"The organisation and its people must be willing to take risks, and not be afraid to fail. You can learn from the failure to make the next attempt successful."**
>
> **Simon Reed, Head of IT and Service Operations, Suffolk County Council**

Cybersecurity: Protecting at what cost?

New technologies mean new cyberthreats and vulnerabilities. How can UK business protect itself?

As technology and working practices advance, so too will threats from cyber-attackers – whether scammers, organised criminals or nation state adversaries. Key factors influencing cybersecurity include:

- **COVID-19:** where the mass shift to remote working means many people are now connecting via unsecured networks, and their heightened anxiety makes them more susceptible to sophisticated phishing emails promising vaccines, cures or financial compensation.
- **The Internet of Things:** with many more connected devices vastly expanding the potential attack surface, creating sometimes poorly secured entry points for hackers.
- **Shadow IT:** as more people work remotely and get frustrated with clunky security processes, there's a higher propensity to use workarounds and unauthorised apps to get work done.

> **"If you put up barriers to people in the name of security, you're doing yourself a disservice. They'll simply find a way to work around it."**
>
> **Nick Dawson, Head of B2B Solution Sales, Samsung Global**

People are part of the problem – but also part of the solution

When thinking about cybersecurity, we tend to focus on vulnerabilities in systems. But in reality, humans are fallible users of those systems, and often the weakest link.

That creates an opportunity as well as a problem. If people are trained to recognise and report security risks, and encouraged to help keep themselves and their organisation safe, they can form a very effective 'human firewall'. New apps are emerging that can help people make good security decisions, for example about whether or not an email is suspicious.

> **"It's not about scare tactics, or making people feel they'll get in trouble if they've made a mistake. It's about building a learning culture where people recognise issues and report them quickly."**
>
> **Phil Donnelly, Detective Chief Inspector, Derbyshire Police**
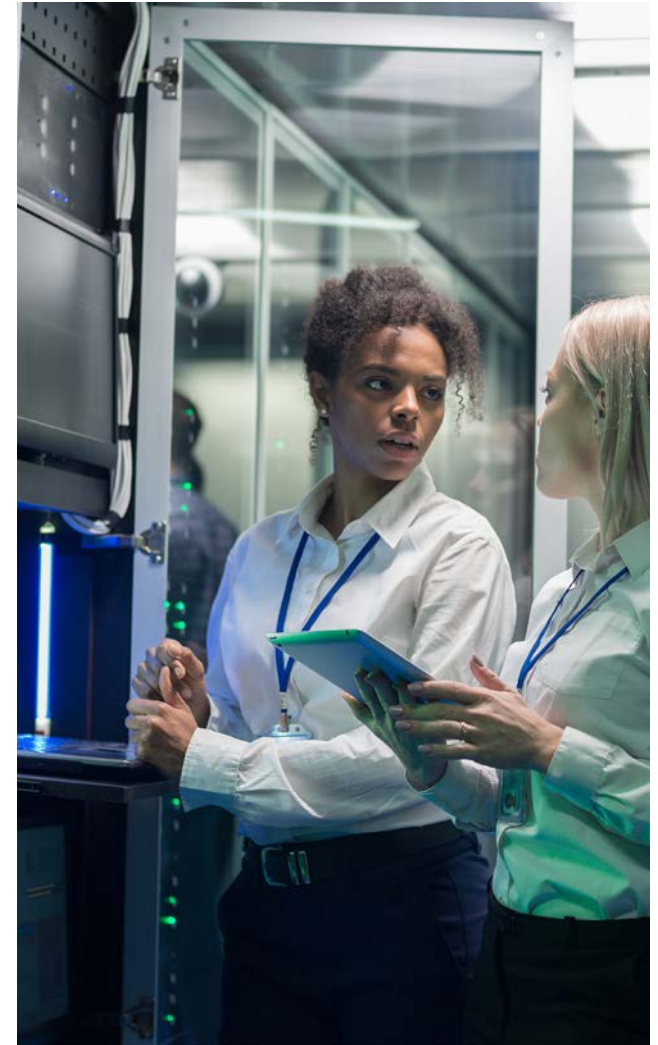
A complex threat landscape needs new cybersecurity thinking

On the systems side, technology is advancing so fast that approaches to cybersecurity must change. The idea of a perimeter that can be protected with a firewall is long gone. Securing individual devices is critical, but mustn't be onerous for users: biometric authentication is a good way to enable secure, frictionless logins.

The complexity of IT infrastructures and volume of devices attaching to the network means manual investigation and response to security threats is no longer feasible. A 'zero trust' security model assumes attackers are already in the network, and seeks to limit the damage they can do, while AI-powered software can monitor for threats and mitigate them in real time.

"The tech stack is getting more granular, making it hard to manage from a security perspective. We use a data overlay to understand the threats and mitigations, and to orchestrate our response."

Marcel van der Heijden, Lead Partner, Deep Tech, Speedinvest

Security has never been so important – but there's plenty of help available

When designing networks and tech stacks, security must be a consideration from the start. Key factors include understanding where individual components are coming from, auditing the IT supply chain, and understanding the security implications of third-party software and cloud services.

"We have a startup that has created a deception platform that baits hackers, revealing what they would do if they got into the network. It's an interesting reversal of roles."

Patricia Nicola, Head of Venture Development and Partnerships, Wayra

Evaluate providers on their approach to security: is it baked in from the start, or has it been added as an afterthought? Look for ecosystems of providers who work together on security issues, as it significantly lowers the risk of gaps opening up between systems.

"Supply chain security is a big topic in large enterprise circles now, and will become a bigger topic as we go forward."

Nick Dawson, Head of B2B Solution Sales, Samsung Global

For small businesses especially, get help and advice. Nobody expects you to be a cybersecurity expert, but your business is at risk if you don't keep it secure. Your IT and communications providers can help, and every UK police force now has a cybercrime unit. You can also get help from the Police CyberAlarm at https://cyberalarm.police.uk.

Summary: Towards a people-powered future for British industry

As the pace of change accelerates, how can British organisations innovate and stay ahead?

> **"The last few months have fuelled my faith in British industry. When the odds were great and uncertainty was prevalent, I saw businesses adapt and people step forward to make a real difference."**
>
> **Jo Bertram, Managing Director, O2 Business**

As British businesses start to rebuild after the initial shock of COVID-19, there are many valuable lessons and experiences to take forward, many exciting new technologies to explore, and new levels of connectivity to drive a new era of growth and opportunity.

But perhaps the biggest takeaway from this period is the incredible power of people. When things got tough, our people stepped up. They took care of our customers, they took care of each other, and they kept our organisations going. If we can take one learning forward, it's to prioritise people and culture above all. If we can do that, everything else will fall into place behind.

Talk to us about your future journey

We're here to help your business build back better in any way we can.

If you'd like to discuss any of the ideas raised in this paper, we'd love to hear from you.

You can **contact** our team or call us on **0800 955 5590**

Get further insights

Take a look at our latest **insights and research**

Our future thinkers

We'd like to thank all of our contributors for their insights, experiences and expertise:

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