

# PUBLIC SECTOR TECHNOLOGY

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## PUBLIC SECTOR TECHNOLOGY

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### LEADERSHIP

# Driving digital culture change from the top

Public sector experts reveal that it's a cultural rather than technological challenge that could be stopping leaders from making the progress they so deeply desire

Morag Cuddeford-Jones

**H**ow are you going to deliver digital services in the public sector when you can't pick up my bins?" That was the question faced in early 2017 by Martyn Wallace, the freshly minted chief digital officer for the Digital Office for Scottish Local Government.

Initially a project set up for three years to help Scottish councils digitally transform, the project is in its seventh year and shows no sign of slowing down. "It's never-ending," Wallace admits. "Always one more mountain to climb."

But back to the bins. "Do you think that's what local government is? We just pick up your bins?" he answered. Wallace outlines the real scope: 5.5 million customers, the education of 700,000 children daily, dealing with social exclusion, healthcare delivery, telecare, births, deaths and marriages – and bins.

He admits that, in the eyes of the public, it is sometimes a thankless task. "We're an easy target for the press," he says. Not just the press, it seems. The MP Jacob Rees-Mogg famously toured civil service departments, leaving a "while you were out" note on hybrid workers' desks. Given that one of the positives of the pandemic has been a shift to hybrid working, this seems a retrograde step.

"We've had more interaction with the Highlands and Islands and the Borders because I can use Teams to talk to anybody across Scotland," Wallace says. "Why would staff come into Edinburgh when they're based in Stonehaven or Glasgow?"

Wallace concedes that hybrid working is an incentive to stay in the public sector, as is the sense of purpose from the job. But he admits that there are aspects of the role that could be improved. "Being allowed to fail. In private-sector organisations the culture is to fail fast but learn from it," he suggests.

But transferring private sector mindsets to the public sector isn't that simple. "The challenge is that we have less money and higher expectations and scrutiny, and we look after the whole population. Being able to fail and learn – rather than being crucified – that culture of risk has to move," Wallace insists.

It's a challenge they must meet. In the latest 2022 *Digital Trends – Public Sector in Focus* report from Adobe, only 14% of respondents said their digital experience was ahead of customer expectations, with more



government can create a culture of innovation both internally and with key suppliers."

The Adobe research also found that 61% of staff felt their organisation lacked critical public sector digital skills such as design thinking or journey mapping. Bluestone points out that looking to the private sector may help to avoid some of the more unfortunate and bigger failures:

"Government functions have tried to reinvent the wheel, spend substantial sums and only then realise it's better to use software development kits from big techs like Apple and Android," he says.

Wallace points out that the public and private sectors are different beasts and notes that how technology and digital transformation are positioned in the public sector is key. He relates how robotic process automation (RPA) made it possible to speed up and improve data sharing to deal with housing and social problems, leading to improved customer satisfaction and improving community wellbeing.

"We need to reapportion staff to go out and be frontline. In the housing department, they were trying to get too much done and morale was low. Now, [with RPA] they're getting job satisfaction," he says.

"We have to focus on frontline digital skills and awareness of what digital is and what it isn't. In the current climate, there's the fear factor that whatever you're transforming will lead to losing your job."

Bluestone has been part of many transformation projects. "Any organisation can have a fantastic strategy, delivery and technology. But without the right culture any programme or project will either slow down or fail. This is where models like ADKAR – awareness, desire, knowledge, ability, reinforcement – are proven change management frameworks."

With pressures from the public, the press, internal culture and cost considerations, are purpose and a work/life balance enough to keep leaders like Wallace at the public sector coalface? "I've had moments wondering if I want to continue with this," he says, but adds: "We're so risk averse in putting our heads above the parapet and celebrating the wins because that's not the culture we have in the public sector. We're just doing our job. But I'm proud of my efforts, I'm proud of my team and what we do with partners across Scotland. Why wouldn't I want to celebrate that?"

than a third (37%) admitting they were falling behind.

Neil Bacon is a senior digital strategist at Adobe. He says: "We see two chief barriers to technology investment in the public sector. Data use and skills. There's an uneven spread of digital skills at practitioner and leadership level. While great strides have been made in this area through the government's GDS Academy, more needs to be done to ensure people leave education and training with the relevant and desired digital skills, so they can hit the ground

running when they join the public sector workforce."

But it isn't all doom and gloom. Danny Bluestone is the founder and CEO of Cyber-Duck, a digital agency that works extensively with a range of public sector departments.

"The government has for the most part adopted lean and agile management frameworks to govern, support and deliver large-scale enterprise programmes and projects mimicking the private sector," he explains. "Combined with knowledge sharing and continual improvement, the

**14%** of government and public service middle managers believe their digital experience is ahead of customer expectations



**49%** believe it is keeping pace

**37%** believe it is lagging behind

Adobe, 2021

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# How to make change predictable through data

Building resilience into your asset portfolio is essential to maintaining positive customer perception while capitalising on process efficiencies

In the wake of the pandemic, 'resilience' is at risk of becoming a bit of a cliché. But in an uncertain world, it really is key to business strategy. Data-empowered software can help organisations transform their efficiencies and gain better oversight over vast operations.

Traditionally, managing operations may have relied on the hiring of more staff. But, with the new capabilities of software to support water, utilities, transport and other critical services, money, time and manpower can be proactive rather than reactive. Software can make a positive difference. Evidence-based asset management is key.

Rachel White, CEO of Arcadis Gen, says: "Every organization is operating in an environment that is becoming more complex by the day. It is no longer sustainable to rely on spreadsheets for managing your organisation's future actions or asset needs. To be truly resilient requires evidence-based real time decisions. We make change predictable through data."

She adds: "Business leaders need to know how likely is it that an asset will fail in the near future or how much will it cost to repair. What do we tell regulators when they ask about the state of this asset? To get these answers, you must leverage the power of data."

For asset-intensive organizations, the health of physical assets is critical for the health of the business. Knowing the true state of those assets, and how they're likely to perform, is the first step to a resilient strategy.

### Unlocking the power of data

Arcadis Gen products unlock the power of data, providing an industry-led framework with analytic insights that can be applied to existing datasets. These products have been developed with three key objectives for customers: efficiency, sustainability and resilience.

Arcadis Gen's AppliedInsight solution is a one-stop resource for advanced analytics, using a secure cloud-based platform, which transforms asset data into actionable insights. It offers a library of apps including two, complementary data apps, each focused on a key stage of data analysis and improvement. The first helps to examine and visualize data; the second focuses on repairing it. Arcadis Gen also offers an interactive tool called Project Prioritizer, which helps to identify 'quick win' projects to develop a personalised plan.

White says: "We encourage people to start their journey towards digital maturity with the data they have, using industry specific frameworks and then scaling up over time. This enables them to gain greater understanding from data."

Asset management is essential to asset intensive organisations, particularly for reducing failures and unplanned outages. Smart asset management helps to mitigate risk and stay one step ahead in a landscape that is more complex than ever.

Moving from spreadsheets to software is critical to effective asset management. You can only hope to achieve organisation-wide efficiencies if everyone is working from the same platform. Siloed spreadsheets, maintained by different people or teams or departments, are a recipe for inconsistency and inefficiency. Conflicting data points, inconsistent parameters, disjointed updates, will only become more apparent, and more concerning, as your data grows. Software can bring an organization together, identify and resolve data discrepancies, and transform data management.

Access to company-wide data supports decisions that benefit the entire organisation, not just specific functions potentially at the expense of others. For example, if you have an asset in poor health, but has low criticality and low risk, you can be less



**Business leaders need to know how likely is it that an asset will fail in the near future or how much will it cost to repair. To get these answers, you must leverage the power of data**

concerned about it than a high-risk asset in a similar condition. But if your data is siloed, you will lose this insight.

Arcadis Gen works across a wide range of sectors, including water, energy, rail, aviation and highways. UK clients include Transport for London, Leeds Teaching Hospital NHS Trust, Electricity North West and Costa Coffee. Network Rail has chosen Arcadis Gen to help improve asset and workforce planning.

### Plan for the future with confidence

Arcadis Gen has been supporting Severn Trent Water's digital transformation. The company serves more than eight million customers across the UK, operating from the Bristol Channel

to the Humber, and from mid-Wales to the East Midlands. With a wide variety of assets on its portfolio and a growing customer base, Severn Trent needed to up its data management game to make the right investment choices. Through Arcadis Gen's Enterprise Decision Analytics solution, the company succeeded in optimising this key part of its operation and set up more efficient ways to manage its assets.

For more than a decade, Severn Trent's decision-making roadmap has combined investment scenarios, risk and uncertainty, conducting thousands of optimizations each year. Because this was a time-consuming exercise, the company sought a proven decision support tool that was capable of complex asset-level investment modelling, risk management and optimization.

Using Arcadis Gen's industry-leading EDA software, Severn Trent now manages all its asset and portfolio optimization needs in a single, web-based, platform. EDA's rich visualisation dashboards enhance communications, and predictive analytics allow the company to plan for the future with confidence. Severn Trent has made significant changes to planning processes and culture for non-infrastructure assets, creating cost efficiencies of more than 15%.

This performance has placed Severn Trent consistently in the upper quartile

in industry rankings, and a record of significantly and consistently outperforming performance commitments to the regulator has resulted in record-breaking rewards of £50m.

Min Grimshaw, Severn Trent Water's former head of regulator oversight, says: "We have worked collaboratively with Arcadis Gen and we have been using the EDA system to help us make more informed and optimal decisions. Over time we have extended and evolved our suite of asset models to cover all of our above and below ground assets. These asset models ensure the decisions we make are fully optimised and provide long term asset resilience to our customers."

There's no question that successful asset management increasingly depends on successful data management. The two will only become more intertwined as time goes on. This is why it is so important for organisations to lay the foundations for effective data management as early as possible to benefit from improvements in asset management and the impact of resilience.

To find out more, please visit [arcadisgen.com](http://arcadisgen.com)



### LAW ENFORCEMENT

# Should we be watching the detectives?

London's police service is trialling the use of AI to root out misconduct in its ranks, after a string of damaging events

Mark Taylor

Appalled by the brutal murder of Sarah Everard at the hands of a serving officer, the British public demanded a swift response to the crime from the Metropolitan Police Service.

A subsequent review into the conduct of those based at Charing Cross in London discovered a toxic environment where officers bonded over jokes about rape, killing Black children and beating their wives.

Heads had to roll, starting with the former Met commissioner Dame Cressida Dick. The poor handling of the Everard case did little to assuage conclusions by its own watchdog that the Met is "systematically and institutionally corrupt".

Inspector of Constabulary Matt Parr said that the Met had "sometimes behaved in ways that make it appear arrogant, secretive and lethargic" in response to investigations into dirty cops, and that it did "not have the capability to proactively monitor" communications with any effect, "despite repeated warnings from the inspectorate".

One regime change and millions of pounds later, the Met now owns AI software that analyses data from sources including email, chat apps and printer logs to sniff out wrongdoing.

Acting commissioner Sir Stephen House told parliament's Home Affairs Committee that the technology, which applies programmable algorithms to an individual's datasets, can learn behaviours over time and warn when something is amiss.

"This would sit above our systems and look at internal emails and Metropolitan Police mobile phones issued to officers to check for alarming keywords, and at the amount of overtime worked," House said.

Various communication and personal data points would be harvested to spot officers going off the rails, with hopes the intelligent system would become more accurate as it learnt from the data.

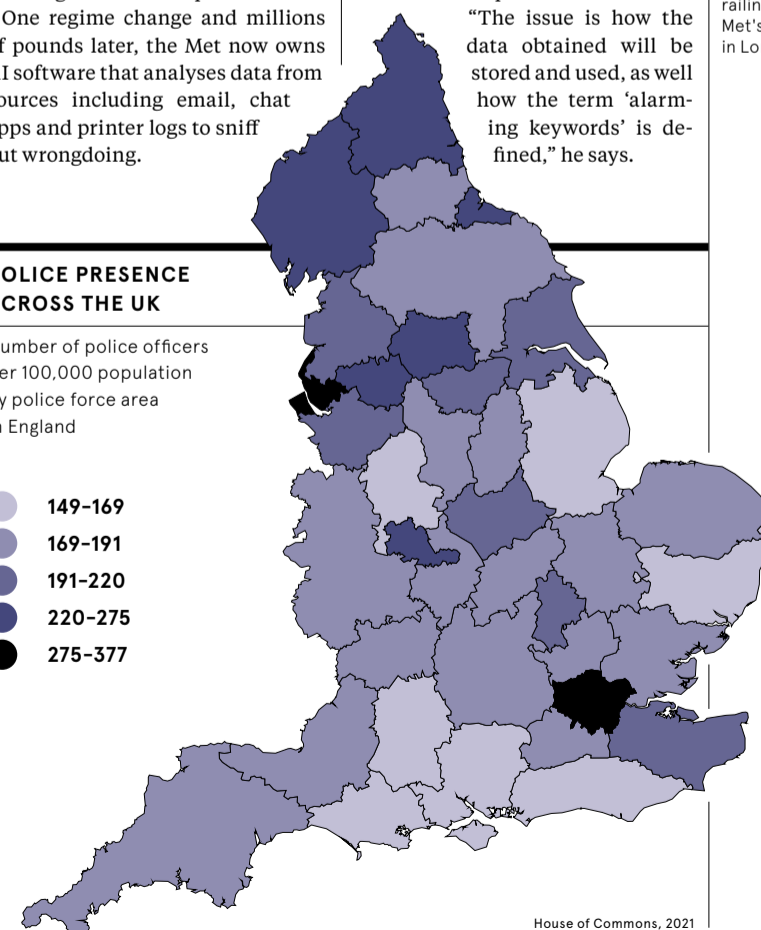
"Today's society is so reliant on electronic devices that it is a logical step to widen surveillance to those used in public office to be held accountable – especially those who have wide legislative powers," says Dr David Lowe, senior research fellow in policing and security at Leeds Beckett University Law School and a former police officer.

"The issue is how the data obtained will be stored and used, as well how the term 'alarming keywords' is defined," he says.

### POLICE PRESENCE ACROSS THE UK

Number of police officers per 100,000 population by police force area in England

- 149-169
- 169-191
- 191-220
- 220-275
- 275-377



House of Commons, 2021



**Without careful implementation and justification, the algorithmic tools proposed could embed corruption yet further**

Posters highlighting some major police failures hang on the railings outside the Met's headquarters in London

Met officials are tight-lipped on details, other than stating that the aim is to have the surveillance tools in place "next year". "To further advance our counter-corruption capability, we are preparing to invest a multimillion-pound sum in technology to monitor the use of devices by more than 40,000 officers and staff," a spokesperson says.

The police union is unimpressed at the prospect of Big Brother looking over shoulders. "The Public and Commercial Services union believes there needs to be a culture change in the Met, but we question whether snooping on employees is the answer," PCS general secretary Mark Serwotka says. "While the assistant commissioner has announced plans for new software to monitor staff phones and computers, he has not consulted us on the issue."

Algorithms trained to predict police misconduct have been in use for several decades, with varying degrees of success. In the 1990s, the Chicago Police Department built a neural-network tool that generated alerts when an officer's behaviour was showing red flags. The software contained models to predict which officers would be sacked for misconduct. It connected complaints of bad behaviour, logged by colleagues or the public, to personal stressors such as divorce or debt.

Then, in 2015, police and academics in Charlotte, North Carolina, took the baton from Chicago's early intervention system and created a more advanced behavioural analytics platform able to process wider data points.

They found officers are as likely as anyone to underperform at work if experiencing personal issues, but they are also exposed to a wholly different level of stress to the people they serve and protect.

Those involved in suicide and domestic-abuse calls earlier in their shifts were much more likely to become involved in adverse interactions later in the day, researchers found. Stressful calls emerged as a leading indicator of later wrongdoing, but forces have little control over which officers are dispatched to crimes during their shifts.

Employee surveillance trends in the corporate world are favouring predictive analytics about employee welfare, especially as work moves online. Companies want a better view of staff they cannot manage or measure in person, while old-fashioned supervisory tasks are being automated and outsourced to AI.

Regulated businesses are often required to have clear policies on private devices and the use of encrypted communication apps such as Signal, WhatsApp and Telegram, but the Met has refused to say whether such private channels could or would be monitored in future.

The lack of transparency has concerned experts, who say this goes to the heart of the problem and the focus should remain on improving the culture of the force and setting the tone from the top.

"There is good reason to be sceptical that the Met will successfully rebuild public trust and confidence

through an increased reliance on emerging technologies," says Dr Gabrielle Watson, University of Oxford fellow and author of *Respect and Criminal Justice*.

This is because misconduct often occurs outside official company channels and heavy-handed surveillance could push the problem elsewhere, Watson says. Algorithms scanning for keywords need wider context, she adds, leading to questions around what behaviours will be monitored and who retains ultimate power over the system and how its results are used.

"Without careful justification and implementation, the algorithmic tools proposed could embed corruption yet further by prompting officers to take their discussions offline and so continue undetected," Watson argues. "The reputational damage incurred by the force in recent years is simply too great to be dispelled through excessive spending on technology alone."

Chicago's attempt at solving endemic corruption in its force with technology failed. The neural-network tool worked too well in identifying rogue officers and without a framework to improve the culture of the organisation in tandem, it was torpedoed before it could cause further embarrassment.

It lasted two years, but not before all of its reports, recommendations and predictions went missing. Union figures blocked the system from being used again, arguing police were hampered in their jobs by such intrusive monitoring and that officers were being punished for crimes they hadn't yet committed.

The Met has its yet work out to overcome similar hesitations, but given its current standing, it has no other choice. ●



dynamisar via Getty Images

LOCAL COUNCILS

# London embraces the new data economy

The Borough of Newham is working to put the UK capital on the map as the centre of the global data economy by embracing data in the public sector

Christine Horton

When you think of the centre of the universe for technology, you probably think of Silicon Valley. But where is the equivalent HQ for data? The answer is that there isn't one – yet. But London is embracing the challenge with an ambitious goal to become the heart of the burgeoning data economy, globally.

The good news for London is that it is still early days for data; the full economic potential of the data economy is yet to be realised. But that potential is enormous.

The London Borough of Newham recently published a report in collaboration with University College London's (UCL) Institute of Global Prosperity. Its conservative forecast is that the UK open data market will be worth £42bn in 2025, £46bn in 2030 and £5bn in 2035.

In the UK, there is the potential for around 3.2 million jobs related to data by the end of the decade. This

would be worth around £28bn to the UK economy by 2030, of which London's share is around £5.5bn. In London alone, around 140,000 jobs in open data will be needed in the next 10 years. As such, several local boroughs are spearheading efforts to make the capital the 'centre of the data universe'.

In London, Newham is leading this charge. Newham Sparks is an initiative that positions the borough as a hub in terms of data jobs, skills, businesses, education, and the application of data to solve problems. It is an ambitious plan to accelerate the growth of the data economy in Newham and London as a whole.

Omid Shiraji is a consultant CIO who works for several local authorities, including Newham, and a member of the Mayor of London's Smart London Board, which helps shape the capital's smart cities agenda and investment in digital infrastructure in the capital. He believes

there is "an amazing opportunity for London to be the centre of the universe when it comes to data as a sector. And Newham has spotted that and has grabbed hold of it".

Although the comparisons to Silicon Valley may not be immediately obvious, there are several reasons why Newham is well-placed as a location for data scaleup and startups, he explains.

"Newham has the Royal Docks as an Enterprise Zone, and the borough offers business rates and other incentives that make it a great place for businesses to locate."

Shiraji also notes that it was its proximity to internationally renowned academic institutions that helped establish Silicon Valley as a tech hub. Newham, he says, has UCL East, as well as the University of East London (UEL), in the borough. Another positive for Newham is that it has the youngest and most diverse population in London. "That's powerful on so many levels," he says. "Early adopters, mouldable profiles of people, plus that diversity of thought, culture and background."

Critically, Newham's council leaders are a driving force behind the plans, alongside firms like Microsoft and Amazon. Smaller organisations and local educators are also backing the launch of Newham Sparks.

"Primary schools and further and higher education providers are all responding to this. Businesses have contacted the Mayor to say, 'I work

London's Olympic Park in the Borough of Newham, where the local council is leading the charge on smarter use of data and analytics

“There is an amazing opportunity for London to be the centre of the universe for data. Newham has spotted that and has grabbed hold of it

in data. How can we get involved? You've got big responses to the calls to action. There is a melting pot of people coming together to harness this agenda," he says.

So, what can local authorities, in London and beyond, learn from Newham's example and apply? The most successful authorities are the ones that care most about linking digital and data to the citizen, and not just doing data for the sake of it, says Jason Foster, who is CEO of Cynozure, a data and analytics strategy consultancy based in London, which has several local government clients.

"The local authority's superpower is that they do care about the end product, which is the service and the citizen who receives that service. Connecting those dots between the services they offer as a council, and how data can play a part in unpicking where their problems are and solving them in a cross-department way, is where they win."

Newham and UCL make several recommendations for creating a roadmap for a data society. At the heart of the strategy is data citizenship. This translates to equipping residents with the tools and skills they need to understand the value of data for the public good; the skills to read and analyse data in their everyday lives; and the confidence to share their data.

While Newham is leading the pack in its efforts to unlock the value of the data economy, other boroughs are looking to follow suit.

"If I look to the west at Westminster, it wants to be recognised as the smart city, globally. If you look to the southwest of London there's a partnership between three or four boroughs where they want to drive the IoT agenda, in areas like social care. And if you look at Camden across and down to Newham, there's

a mix of private equity, venture and angel investment in data startups and scaleups. So, you can see these data economy nodes are popping up. "When I put my London hat on, connecting those parts is exciting," he says. ●



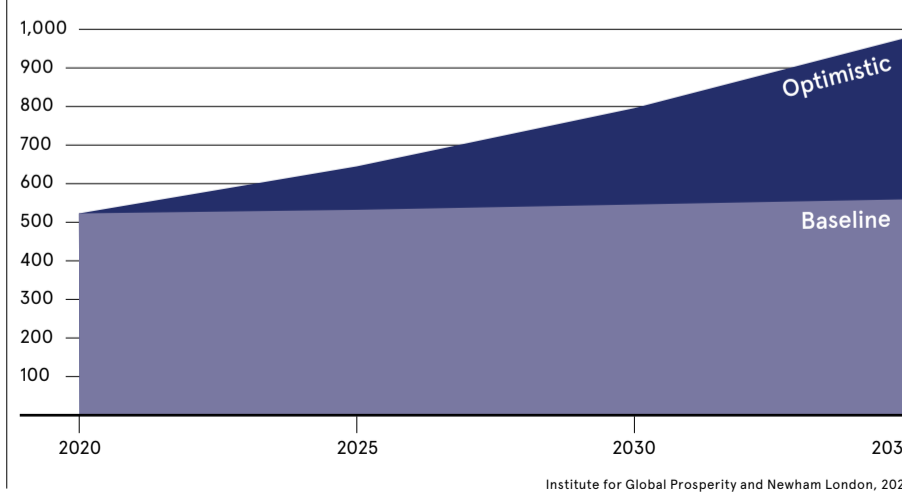
### Focus on data literacy

The government's National Data Strategy, first published in September 2020, notes that there will be a demand for data knowledge not only for experts with advanced analytical skills but for the entire UK workforce. While not every worker needs to become a data scientist, everyone will need a basic level of data literacy to operate and thrive in increasingly data-rich work environments.

In 2021, the UK Government published a report which said that 178,000 to 234,000 jobs would be required to fulfill the demand for data skills. It noted the gap between the ability to both provide the skills and make sure those jobs are created in the UK. In London alone, just under 140,000 jobs will be needed in open data in the next 10 years.

### STREAMLINING SERVICES, CREATING JOBS

Total UK open data employment estimate and forecasts, in thousands of open data employees



INSIGHTS

## 'Digitalisation is not just nice to do, it's a business necessity'

Colin Cook, the director of economic development for the Scottish government and member of the Digital Leaders advisory, discusses how public sector technology can support businesses and solve challenges

**Q What is the role of public sector technology when it comes to delivering economic development?**

**A** Technology plays a role in two ways. First, in the way in which economic development support and advice is provided to businesses and entrepreneurs.

The Business Support Partnership, which brings together representatives from Scotland's skills and economic development agencies, and national and local government, has developed a website, FindBusiness-Support, to enable businesses to find the support they need. The content on the site is developing constantly, with an ambition to include information on every public sector service available to businesses in Scotland.

Second, in the way in which the public sector works to create opportunities for entrepreneurs and businesses to build digital products and services that address some of the major challenges faced.

At the heart of this lies CivTech, a Scottish Government programme with a mission to drive innovation in the public sector by collaboratively solving challenges to make people's lives better and, in doing so, create generations of sustainable, high-growth businesses.

CivTech uses highly effective systems, methodologies and practices common in the private tech sector. These include open challenge systems and tech accelerators - the methodologies that have done so much to transform almost every sector in the world.

**Q How is Scotland encouraging its businesses to adopt technology and close its productivity gap?**

**A** The national strategy for economic transformation identifies the adoption and application of digital technology as critical to closing the productivity gap.

We have successfully delivered the Digital Development Grant programme which has invested around £50m since January 2021 to support over 6000 SMEs in improving their digital capability and capacity. This has already unlocked more than £60m of private sector investment and is demonstrating significant economic impacts.

We need Scotland to have a culture that makes the digitalisation

of businesses not just nice to do, but necessary.

Not only must we support our businesses to adopt digital technologies, we must improve our management and leadership practices, along with our digital skills. The ONS claims that doing this can deliver an increase in productivity of up to 20%.

**Q How can the public and private sectors work together to create more opportunities for entrepreneurship?**

**A** In a world where technology is disrupting markets and changing how organisations and individuals work, we need to be open to ideas and experience from every sector of the economy. We believe that entrepreneurship can drive social mobility, create fulfilling jobs and deliver the economic prosperity necessary to sustain thriving local communities and positively disrupt traditional sectors that might ordinarily be considered less productive.

Our new national strategy talks about the creation of an entrepreneurial mindset. In the private sector we know that high-growth startups and scaleups can create skilled jobs, pay higher wages and drive increased productivity. In the public and third sectors it can improve services, increase efficiency and address the key social, economic and environmental challenges of the day. Of course, if we can do that at home, it also opens up to export our products and services and promotes new ways of doing things across the globe.

CivTech is just one great example of how we can encourage entrepreneurial thinking in the public sector, but we want to go further and establish Scotland as a key player in an international tech movement.



**Colin Cook**  
Advisory board member  
Digital Leaders



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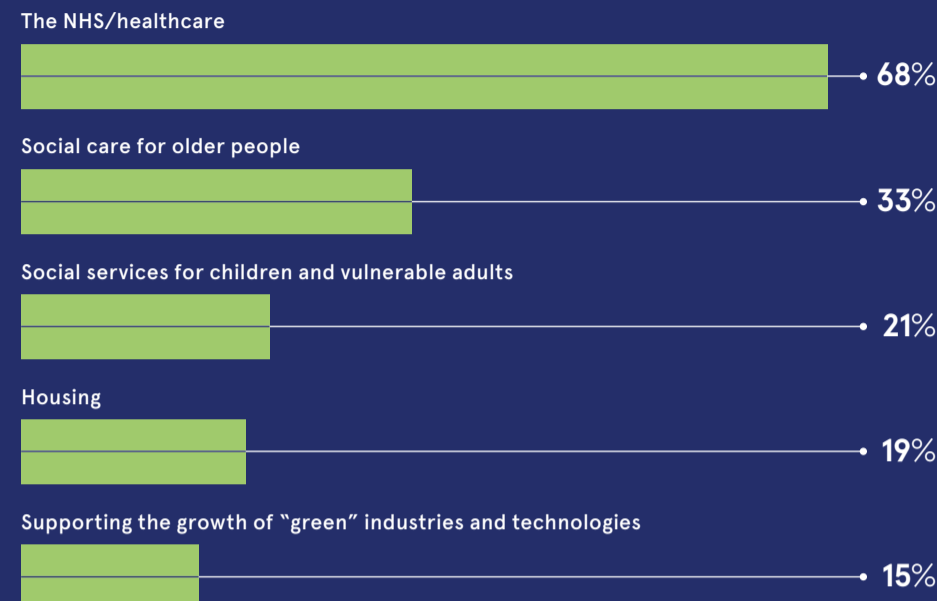
Learn more at [www.centreforpublicimpact.org](http://www.centreforpublicimpact.org)



### GREEN INNOVATION IS A TOP FIVE PRIORITY

Deloitte, 2021

Percentage of British citizens who say that the following areas should be prioritised to receive public spending as the UK recovers from the pandemic



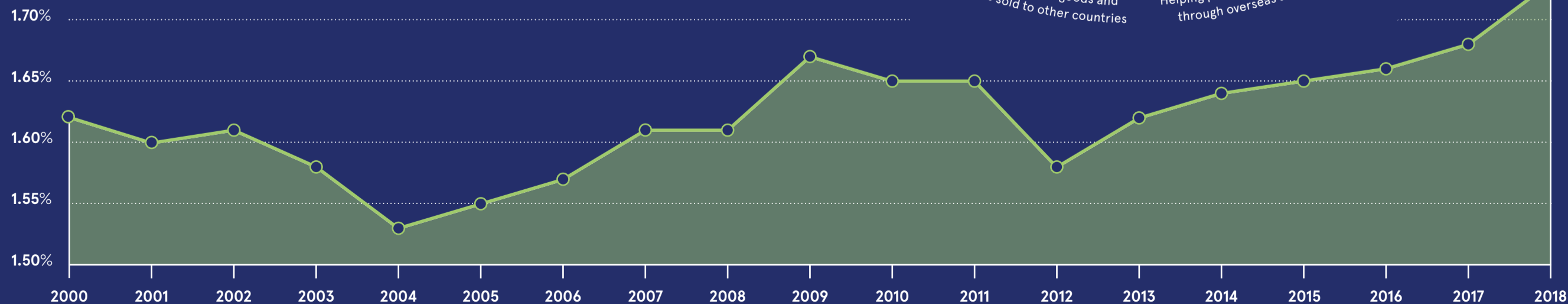
# GREEN AMBITIONS

A recent study has shown that a quarter of the UK public want Britain to be known for its actions on tackling climate change, but when it comes to green innovation, just how much progress are we making?

### PUBLIC SECTOR IS STILL NOT SPENDING ENOUGH ON R&D

Institute for Manufacturing, University of Cambridge, 2021

The UK's gross domestic expenditure on research and development (GERD) as a share of GDP has stayed almost constant since 2000 (% of GDP)

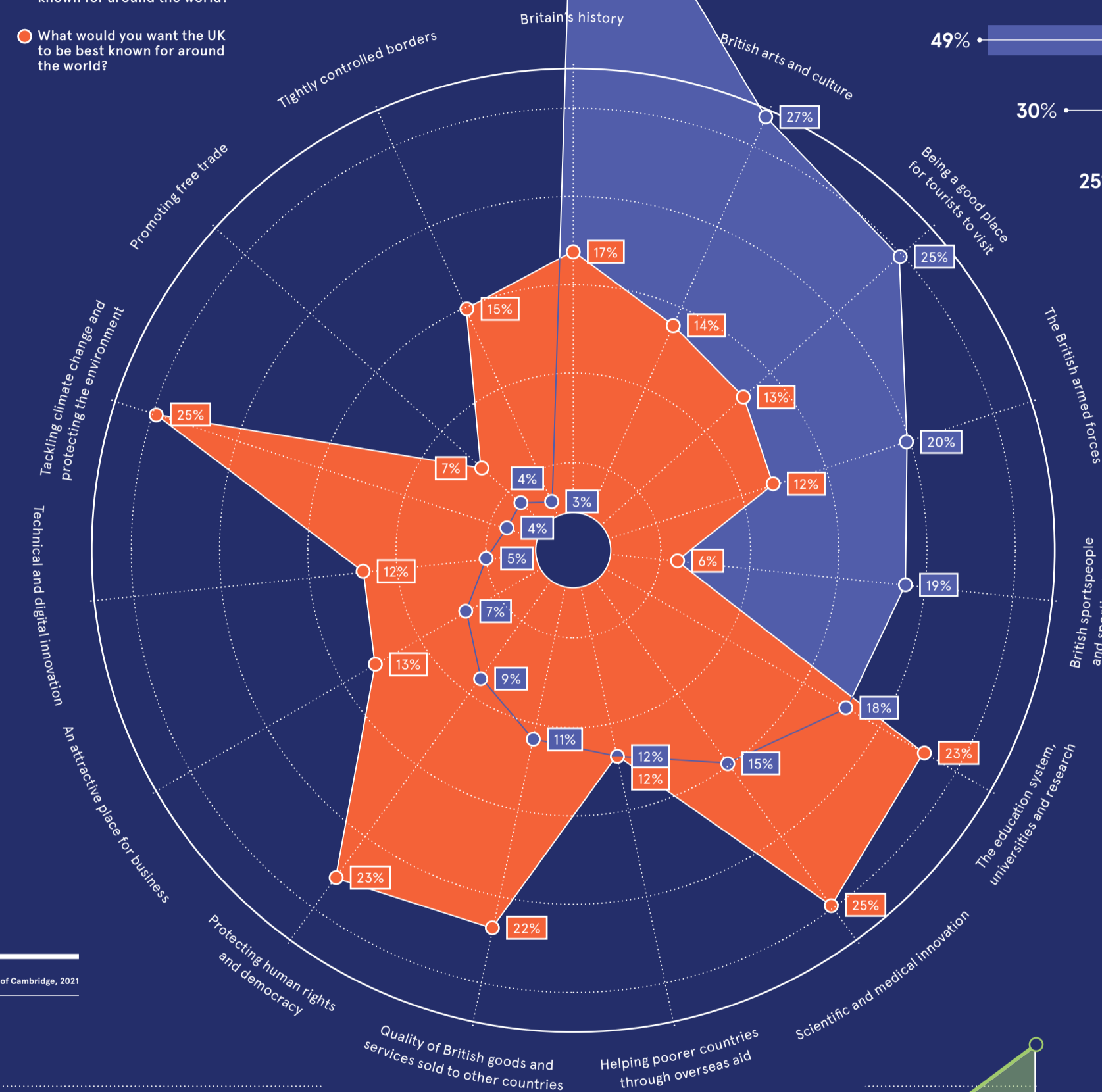


### BRITS WANT THE UK TO BE KNOWN AS A GREEN INNOVATOR

Deloitte, 2021

Percentage of British citizens

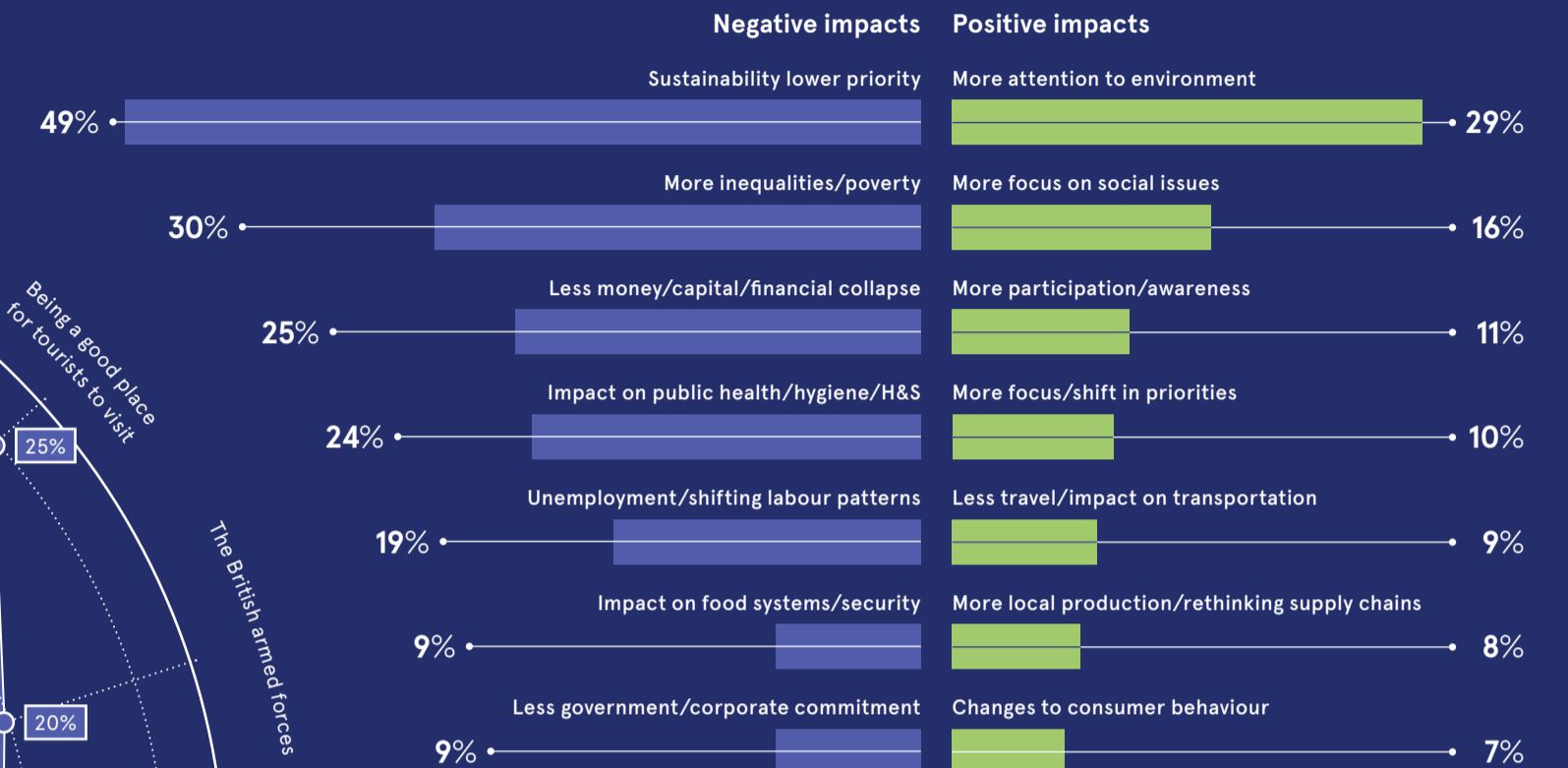
- What do you think the UK is best known for around the world?
- What would you want the UK to be best known for around the world?



### COVID BUMPED SUSTAINABILITY DOWN THE AGENDA

Globescan and SustainAbility, 2020

Percentage of leaders from both public and private sectors who said the pandemic will affect the following sustainable development priorities between now and 2030



**£22bn** increase in public funding for R&D per year by 2024

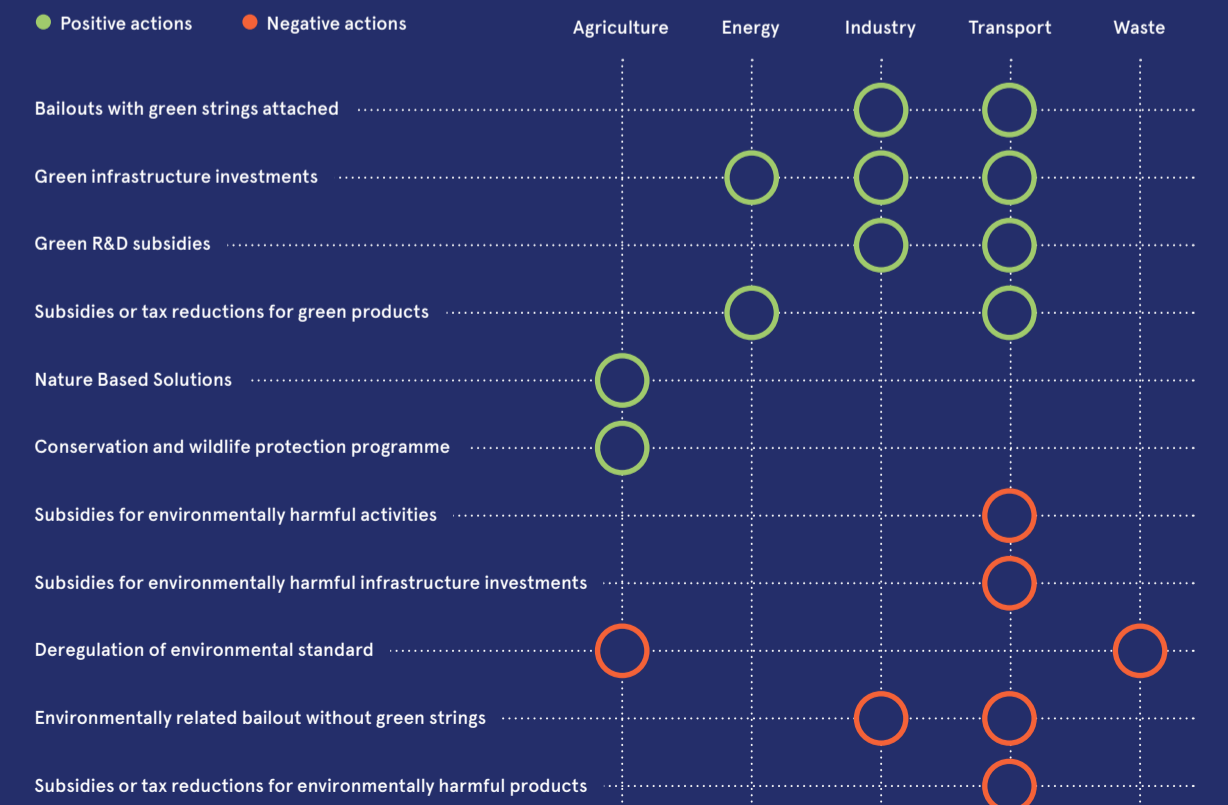
**2.4%** boosted investment in R&D by 2027 pledged by the government

Institute for Manufacturing, University of Cambridge, 2021

### EXPLORING THE UK'S GREEN STIMULUS MEASURES

Archetype policies announced in the UK

Vivideconomics and Finance for Biodiversity Initiative, 2021



REGULATION

# Making the internet a safer place to surf

The Online Safety Bill seeks to protect users and their privacy, but may do the opposite unless changes are made

Joy Persaud

As technology increasingly dominates our lives, the drive to keep both children and adults safe online has rapidly grown in urgency. While the Online Safety Bill (OSB) will include the world's first cyber-safety laws, it is unlikely to be a panacea, as the balance between online safety and personal privacy is a precarious one. "Placing some accountability on the platforms, which currently have almost none, is a pro of the OSB," says James Bore, a security consultant specialising in online and cyber-security. "Whether the OSB is the

schools, concurs. "The OSB will have to be dynamic and evolve every year to address emerging trends," she says. "We haven't even started thinking about the metaverse, for example, where everything is interactive and where considerable harm to children is already being reported. It's important that we are responsive to developments through codes of practice that Ofcom will develop alongside industry."

That said, Aynsley believes the OSB is an important step in the right direction towards protecting children and adults online, particularly as the internet was not designed for children and always lacked adequate controls. "For the first time, technology companies, including social media and search engines, will be responsible and held accountable for harmful content hosted on their platforms," she says.

The NSPCC strongly backs the OSB but in its report *Time to Act*, published in April 2022, it said further changes are urgently required, unsurprising given that, in 2021, UK law enforcement received 97,727 industry accounts relating to online child abuse, a 29% increase on 2020. And online grooming offences in 2020/21 reached a high in England and Wales, increasing by almost 70% in three years.

Among its requests, the NSPCC wants the bill to take a proactive approach to tackling the child abuse risks in private and group messaging, and to stem the ways in which abuse is facilitated on social networks but where it may not meet the criminal threshold. Abusers frequently use social networks to post so-called digital breadcrumbs that signpost to illegal content hosted on third-party messaging apps, offender forums and the dark web. The NSPCC says the government must

right way to go it is very much a debate – I don't see there being a right answer. But what is clear, given the damage that platforms have done in terms of assisting the spread of misinformation and manipulation of democracy, is that the balance is very much in their favour." He says the sticking points surround a lack of clarity over what is considered 'harmful' behaviour, as this subjectivity will lead to people challenging definitions as technology and society evolve. Charlotte Aynsley, a safeguarding advisor at Impero Software, which provides advice on safeguarding to

**“The Online Safety Bill will have to be dynamic and evolve every year to address emerging trends**

also strengthen its approach to tackling harmful content for children. Aynsley believes the OSB marks a shift from liability to accountability and protection, whereby companies will need to demonstrate that they have evaluated key risks such as misinformation, predatory behaviour and cyberbullying, and put suitable protections in place, especially for children.

"Fines will be issued to those who fall short and executive teams held accountable," she says. "Shifting responsibility will benefit everyone, especially children, as it puts the onus on big tech companies and social media platforms to be aware of the content they host."

But she adds that the spotlight on large technology companies could mean that harmful behaviour occurring elsewhere is missed, while billion-dollar behemoths may not be sufficiently motivated by financial penalties.

Bore agrees: "It's worth remembering that the companies targeted by this law have been shown time and time again to be uncaring about the damage they knowingly cause to society and democracy," he says. "Even if individuals within them are well-intentioned, their ability to soften the overall negative impact is negligible. That's not to say there aren't also benefits to society that come about, but we need to work to mitigate the harm, and holding these organisations to account – regardless of how imperfectly – is a huge step when they have shown for years that nothing else will work."

According to the government, the OSB will "[deliver] the government's manifesto commitment to make the UK the safest place in the world to be online, while also defending the

right to free expression". But cyber experts beg to differ, warning that the OSB risks devastating the UK's online security.

Robin Wilton, director of internet trust at the Internet Society, is damning, calling it "an unworkable mess, with overreaching powers based on vague definitions, poor accountability structures, and new categories of offence added almost every month".

The government, he adds, should refocus its approach by admitting that the problems it claims to be solving with the OSB are societal and stop legislating as if regulating technology is "the miracle cure". He is also concerned that the bill could force firms to undermine strong encryption, making everyone less safe, as service providers weaken or withdraw end-to-end encrypted services from their offerings.

"The bill," he says, "makes [service providers] liable for the behaviour of their users if they are unable to monitor and control their users' conversations. Nadine Dorries, the Digital, Culture, Media and Sport Secretary, recently expressed her delight that citizens in Ukraine could stay informed via secure messaging services and encrypted news sites. If the UK passes the OSB, companies will be forced to either leave the UK market or undermine the security and privacy of all their users, including the most vulnerable in Ukraine and other conflict areas."

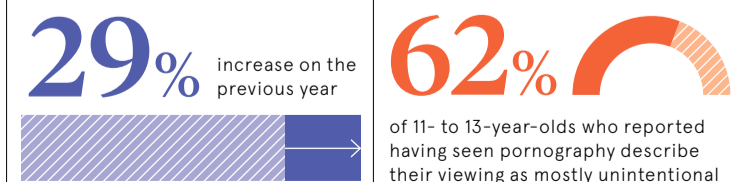
"What the public doesn't realise is that the content of all their communications will be scanned. Is this the kind of surveillance state we want in the UK?"

Wilton goes on to caution that the OSB will degrade the UK's security throughout its online infrastructure, reducing inward investment, as companies will have little incentive to invest in a market for insecure products, or the insecure services built on them.

Clearly, the OSB still needs work to hone it into a robust tool that keeps individuals safe and maintains their privacy, while avoiding the somewhat ironic potential outcome of leaving people with even poorer protection online. ●



Peter Dusekley via Getty Images



NSPCC, 2022

# Informing a richer picture of UK utilities

Technology, data and human domain expertise must combine seamlessly to overcome the pressing issues facing the UK's utilities sectors in the next few years and beyond

The utilities sectors are experiencing a collision of key challenges that threaten the trust they seek to maintain with the public. Such trust is crucial to the ability of these vital services to fulfil their obligations to keep society safe and functional through steady supply and sanitation. First and foremost, water is more scarce as climate change brings hotter, drier summers and less predictable rainfall to Britain. Without action, this could lead to water shortages and increased drought risk, according to the UK's Environment Agency, which has estimated that summer rainfall will decrease by 15% by the 2050s and 20% by the 2080s.

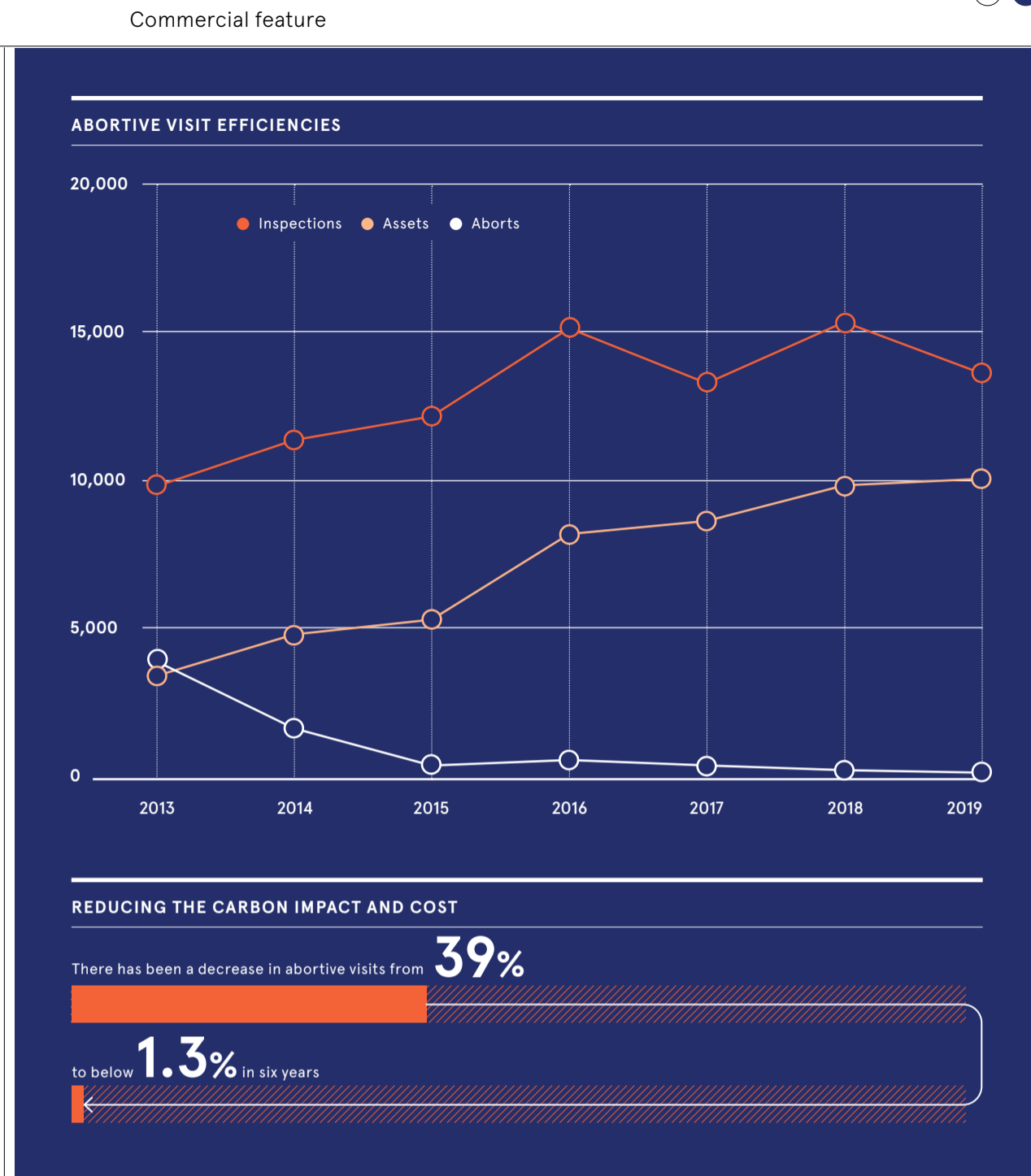
Part of the solution is reducing consumption. For example, the average person in the UK uses 140 litres of water per head, per day, which utility companies want to see fall to around 100 litres to deal with supply issues in the next five years. Efforts to alter consumption behaviours must be assisted by the industry's own actions to help halt climate change.

The industry is responsible for a large proportion of greenhouse gas emissions globally. In 2020, the water sector became the first in the UK to commit to net zero carbon emissions by 2030, which others have followed. But achieving this goal requires not only for utility companies to reduce their carbon footprint, but all of their suppliers and contractors too.

Meanwhile, the environmental impacts of these sectors extend much further. Sewage and effluent spills into bathing waters, rivers and water-courses where people swim and kids paddle, are never too far from the media spotlight. Political and regulatory pressure, including new legislation forcing utility companies to curb the spills, will continue to grow.

"Underpinning all of these issues is an exacerbating cost problem," says Mark Kaney, MD of water and infrastructure services at specialist utility services provider Ipsum.

"But the



purpose, and then it just swills around and it's never used again. That's a lot of data and value that these companies are not taking advantage of."

Ipsum is a leading provider of specialist power, water, infrastructure and digital technology support services. It works in partnership with customers across both regulated and non-regulated environments to optimise asset performance, supporting the security, resiliency and longevity of their critical networks. As a frontline provider of infrastructure services – investing, enhancing and optimising the

By putting sensors on utility assets, companies can understand their condition and performance in real or near time. Each sensor or visit to an asset collects more data. And while they have started to use this data in useful ways, including alerting customers when there is a storm coming or posting service failures and sewerage discharges online, there is a considerable way to go until utility companies can claim to be fully data-driven.

"Collecting data and turning it into insights is the only way to make better, faster decisions and to meet these big challenges on both the customer side and the utility side," says Kaney. "However, most utility companies are data-rich and information-poor. They have more data than they probably know, and what they do know of isn't used to maximise its value."

"In most big companies, between 55 and 60% of their data is dark data. It's collected once, used once for one

operation of utility assets – the speed at which Ipsum can collect data and turn it into strong insights has a direct influence on the avoidance or mitigation of incidents and management of performance issues.

Ipsum.Live is a cloud-based platform which brings all these insights together, whether they are collected from sensors, drone surveys, physical surveys on site, 3D photogrammetry or in-asset and in-pipe surveys such as CCTV cameras. This helps facilitate new insights such as pattern recognition, trend analysis and remote inspection and interrogation, playing back a rich picture of information.

The platform is designed to be interoperable with a utility company's own digital infrastructure, regardless of the solutions and vendors it uses. Ipsum works collaboratively with the whole ecosystem to ensure all data and insights are easily and dynamically connectable. Whether datasets came from Ipsum, a strategic partner or the utility company itself, everybody sees one version of the truth and, through effective collaboration, can respond, diagnose, triage and make decisions accordingly.

While these intelligent uses of technology, and the data insights that flow through them, will be essential to helping the utilities sector become more efficient and sustainable in the

years ahead, they will not be effective without skilled people with solid domain expertise.

"Utility companies are talking to us about their big challenges and initiatives and how we can help them better serve society and the planet through data and technology," says Kaney. "But data on its own is not a silver bullet. We're not going to digitalise the utility sector and suddenly everything will be brilliant. We still need real core domain expertise."

"We are losing so much expertise in the utilities sector. If we are not careful, that expertise will be gone forever. Technology needs knowledge, background and context to serve its purpose. To really unlock data-driven decision-making and improvements, we need people who understand how these things work. AI is great but who trains it? If it's not an expert, the AI will get it wrong. So people are really important to succeeding in the age of Utilities 4.0."

For more information, visit [ipsum.co.uk](http://ipsum.co.uk)



One of Ipsum's customers had

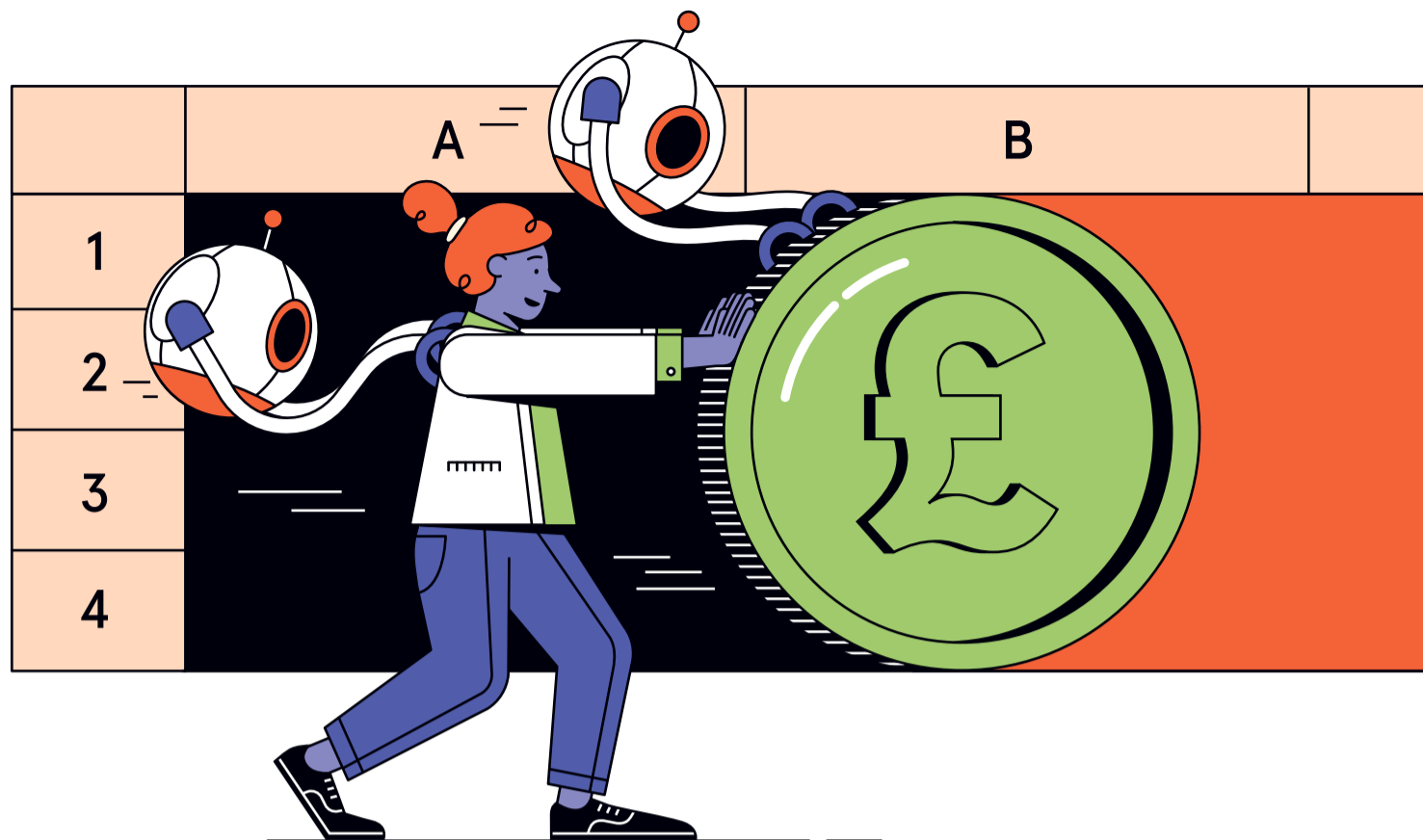
**6,805**

asset inspections on Combined Sewer Overflow and Outfalls over the past 12 months

**161**

pollution events were prevented through these early interventions, prompted by Ipsum's data-driven insights

The second piece on Pollution Events Mitigation came from our in-house digital technology Sewer Viewer from 2020 data



SKILLS

# The low-code revolution

Upskilling employees, smarter outsourcing and new technology could help cut costs, reduce debt – and deliver better service

Oliver Pickup

**T**S Eliot's poem *The Waste Land*, published exactly a century ago, begins with the words: "April is the cruellest month." One hundred years on, considering the huge rise in energy costs for British people and business in April 2022, it's hard to disagree. It appears worse is to come, so how can the public sector cope?

On 5 May, the Bank of England lifted interest rates to a 13-year high

and forecast that inflation would soar above 10% in the coming months, warning that the surging rise in living costs could plunge the economy into recession this year. But it's not only citizens who are squeezed; the public sector is already in the red – just as demand for public services is likely to reach unprecedented levels.

The latest figures from the Office for National Statistics show that

total public sector debt stood at £2.3tn at the end of March, equivalent to 96.2% of GDP, a level not seen since the early 1960s. Further, public sector net borrowing was £151.8bn. This is the third-highest borrowing figure since records began in 1947, and equivalent to 6.4% of GDP.

Given this gloomy backdrop, how should public sector organisations plagued by money worries invest in technology solutions that best serve struggling citizens? Granted, costly gambles on the metaverse and vanity projects are not a good idea right now, but what's the best way to allocate funds?

Jon Crowcroft is one of the co-founders of iKVA, an AI knowledge management company, chair of The Alan Turing Institute, and Marconi professor of communications systems in the computer laboratory at Cambridge University. He is well placed to answer these critical questions.

"My advice would be to match the budget to the current skills base, or organisations will face the challenge of undertaking a huge retraining exercise that will overwhelm their resources," he says.

"Government departments including transport, energy and healthcare are relatively technologically advanced and staffed by individuals who inherently use technology for timetabling systems, power grid

maintenance and data analysis. Computing is embedded into job roles in these departments, particularly in healthcare."

Other sectors, such as legal, have more limited skills, Crowcroft says. Their relative ability should inform where additional funds will be required to support the deployment of technological solutions.

Alex Case is public sector industry principal at Pegasystems and a former senior civil servant at 10 Downing Street and the Cabinet Office, who oversaw cross-Whitehall Brexit delivery. He has also led large-scale public sector reform initiatives in the UK and Canada and is in no doubt of the scale of the task.

"The government continues to face huge delivery challenges, from coronavirus, Brexit, the war in Ukraine or the cost-of-living crisis, including dealing with backlogs,

**“Low-code can help revolutionise how government designs and builds IT. It can help a business to get what it wants and needs from a new system, not the system the IT team thinks the business needs**

driving levelling up, getting the health service back on track, transforming social care and dealing with the safety of tall buildings. These need government operations to run effectively and efficiently and for the least amount of cost possible."

Low-code software development could be the answer. It uses drag-and-drop features instead of extensive coding language to build applications. The result is that it is faster to complete and non-professional coders can use it. This makes it an excellent option to accelerate innovation and reduce costs, suggests Case.

Its uses across government departments could include streaming and improving outdated and clunky customer service processes, digitising inefficient and complex programmes and back-office processes, and modernising debt collection while reducing fraud.

"Low-code software development can revolutionise how government designs and builds its IT systems. It can help a business to get what it wants and needs from a new system, not the system the IT team thinks the business needs."

Additionally, Case believes this approach can bridge the frequent divide between business users, subject matter experts, product owners, and the technical design and developer teams.

Where, though, should the public sector focus its investment now? Crowcroft contends that it is less where and more how the money should be spent, celebrating the increased adoption of AI and machines learning. "During the pandemic, the public sector successfully used AI and automation to meet increased demand for services," he says.

"AI can automate bureaucratic processes that are currently very resource-intensive, reducing the human workload. This will offer cost-savings, improve accuracy, and enable people to do other things that have a positive return for their

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function F(e){var t=[e]={};return b.ea
t[1]==!1&&.stopOnFalse){r=!1;break}n=!1,u&
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### Is low-code the answer to public sector worries?

"Increasingly, the government has recognised that low-code can help take the pressure off and has invited proposals for innovative platforms and software for digital public services," says Mark Smitham, lead for public sector marketing at Mendix, a low-code platform. "Their shared vision is to deliver more user-centred, cost-effective, local public services through open, collaborative and reusable work."

He suggests Knowsley Council is a prime example of a local service provider that used low-code to adapt to the increased demand from its residents and local businesses. "In just 24 hours, the council built an application that enables Knowsley residents to request assistance or volunteer their services to support their local

community," continues Smitham. "This app connected people who need help with those who can help, providing support for 7,000 vulnerable residents."

Elsewhere, a low-code platform is helping to address financial debt with core business transformation at StepChange, the UK's largest debt management charity, points out Alex Case, public sector industry principle at Pegasystems. "Additionally, low-code solutions are being deployed to tackle costly fraud and errors for the Department of Work and Pension," he says. "transforming how the country registers land and property, and even supporting how the Ministry of Defence recruits essential skills to predict and deal with a fast-paced and changing environment."

organisations, such as analysing data to identify and plan where further improvements can be made."

An example of this is in the care sector, says Crowcroft. By automating as much of the paperwork as possible, the amount of time a care worker can spend with people in need increases.

"The processes at the human level are reflected in documentation, and that shouldn't be the case anymore," he adds.

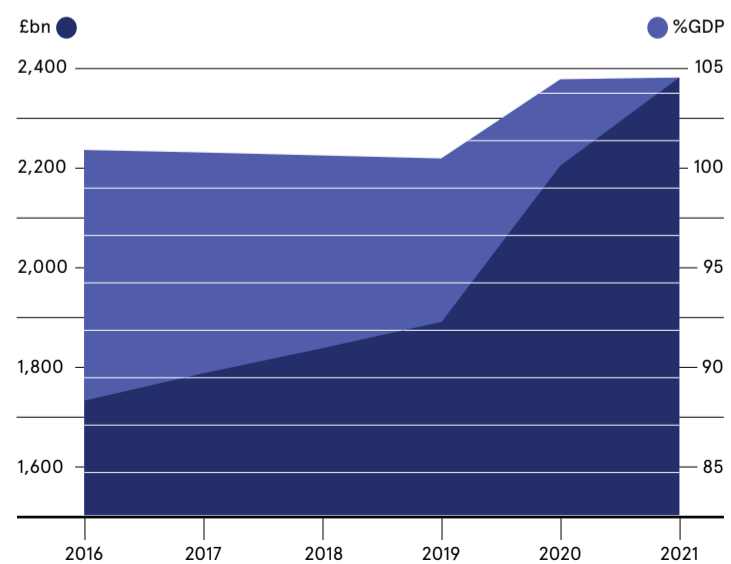
One obvious way for the public sector to reduce costs is by being

smarter with outsourcing while improving in-house skills. For instance, the value of contracts awarded by the UK government and public bodies to consultants was £2.5bn in 2020-21, as organisations used the private sector to deal with the pandemic.

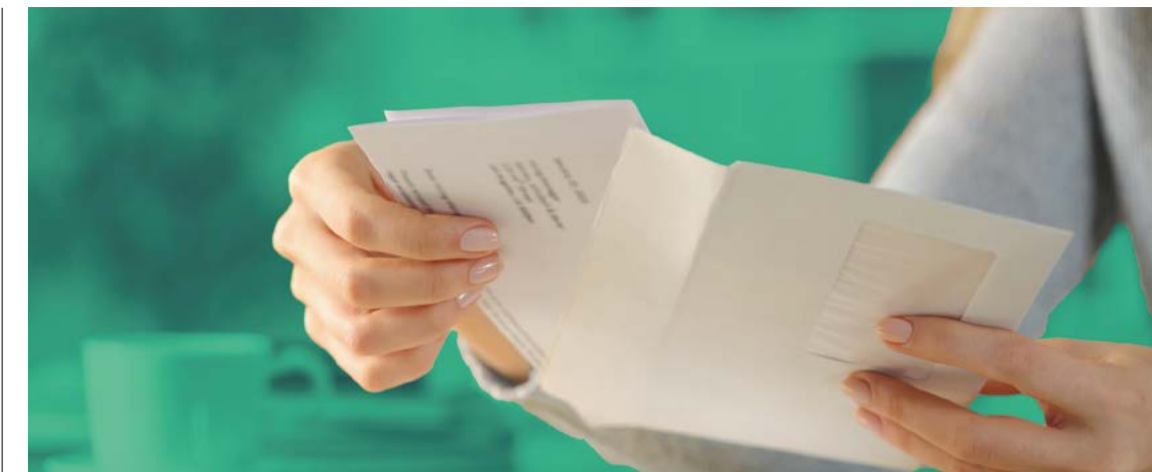
"Consultants will always have a place in the public sector," concludes Crowcroft. "But using technology to unlock data insights and training our people to understand the information will improve confidence in their decision-making." ●

### GOVERNMENT DEBT CONTINUES TO RISE

General UK government gross debt, from the years 2016



Office for National Statistics, 2022



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Pille R. Prikke via Unplash

## E-GOVERNANCE

# Lessons from e-Estonia

The Nordic nation runs an entirely digital government on a relatively shoestring budget. Why, then, does the UK struggle to do the same?

Charles Orton-Jones

Compare and contrast these two nations. On one side we have the UK, a land where one in five NHS Trusts is paper-based. This means records must be physically transported between hospitals, sometimes by taxi. Records are occasionally lost.

When computers are used, the performance can be appalling. A medic in Kettering hospital says it takes her 10 minutes to log into the hospital system. "Sometimes I just give up and go to another computer," she reveals. Overall, only one in 10 trusts is completely digitised.

How about in the police force? Northamptonshire Police still posts speeding tickets to drivers and demands an ink signature posted back. Do it online? No chance. The police confirm it is possible to send documents by post or fax. Yes, fax,

that primitive network of printers popular in the 1980s.

Now swivel the globe to Estonia. This tech unicorn factory is regarded as a paradise for digital living. The entire government runs on a slick online interface. A single ID code offers citizens access to almost all its public services. The login is identical for all. Vote online. Get a prescription. Pay tax. Form a company. All with a single personal number and PIN.

Most incredibly of all, the entire Estonian system is run for around €100m a year, according to 2020 figures from the State Audit Office. So why is the UK so far behind Estonia? A big reason is the single identifier. At birth, Estonians are assigned an ID number for life. The national IT system is built around it. Britons have no such number, but instead

use a multiplicity of identifiers: passport number, NHS number, National Insurance number, Unique Tax Reference, driving licence and so on. It's chaos.

"We're not joined up," observes Deryck Mitchelson, who was chief information officer of NHS National Services Scotland from 2018 until

“

**A single ID code provides Estonian citizens with access to almost all public services. Vote online. Get a prescription. Pay tax. Form a company**

January. "Even in the same service, things differ. In Scotland, we've got the CHI – the Community Health Index number – which is the same as but separate from the NHS in England and Wales."

There are three distinct NHS numbering systems: one for England, Wales and the Isle of Man; one for Scotland; and one for Northern Ireland. Mitchelson has studied the impact this fragmentation has on government IT.

"There are just too many identifiers," he says. "Data is siloed in local systems. In Scotland, each health trust manages its own records. None of them passes on information, which is why there are big delays. There's no one source of truth."

During the pandemic, Mitchelson needed to create an integration layer to share patient information across the Scottish and English NHS systems to monitor patients. "People ask what sits between the NHS systems and connects them. The answer, really, is nothing."

It's a disaster. The NHS app failed to show double vaccinations if one was in another nation of the UK, meaning some Brits couldn't prove their status when abroad.

Even the current ID processes are poor, being based on names and date of birth. Mitchelson says he went for a blood test and the nurse forgot to ask his middle name, preventing the system from recognising him. The sample was thrown away as it could not be logged.

"I deliberately tried to disrupt the system," he says. As a small gesture, he would refuse to print documents, instead demanding a digital version. "Unless people take a stand, it isn't going to change."

Back to Estonia. The nation runs on a national data-sharing platform called X-Road that stores data on the cloud on compatible systems. The education department maintains school records and the department of health logs medical data, but all the state systems are interoperable.

There is a once-only policy, so information is never input twice. Data can flow from one service to another with no information loss. No application is more than 13 years old. Anything older is rebuilt. This means, for example, that ambulance drivers can view patient information on an e-ambulance app. Doctors and paramedics can see blood type, allergies, treatments or pregnancy at a glance.

Could the UK take baby steps and adopt a single ID code, like Estonia? Political objections over Orwellian surveillance are a major obstacle. Estonia evades this by giving citizens the right to see who views their data, thus increasing transparency.

"If it's done properly, a single ID gives you much tighter security and controls," says Mitchelson, who is now chief information security officer of cyber firm Check Point. "If there is a fraud, you can immediately switch off access to other services. It gives more visibility and allows the consumer to manage their data."

So, a model exists for the UK to learn from. It's cheap to run. Secure. Proven. And Estonians are enthusiastic about sharing their knowledge with other countries.

As Estonia rises in prominence, thanks to a soaring GDP per capita and a reputation as e-Estonia – the land of code – its example will prove ever harder to ignore. ●

## ESTONIA'S X-ROAD SYSTEM IS MADE UP OF:

164

Public sector institutions

172

Security servers installed by members

688

Institutions and enterprises

1,525

Interfaced information systems

52,000

Public sector institutions

European Union European Regional Development Fund, 2022

Sion Smith, CTO of OSO, a tech consultancy that works on software design for the likes of NHS Wales and the Department for Work and Pensions, says there is no plan in place to emulate Estonia. "I've never heard Estonia mentioned. Never." Instead, he says, the mindset in the UK is "reactive", focused on fixing immediate problems as they occur.

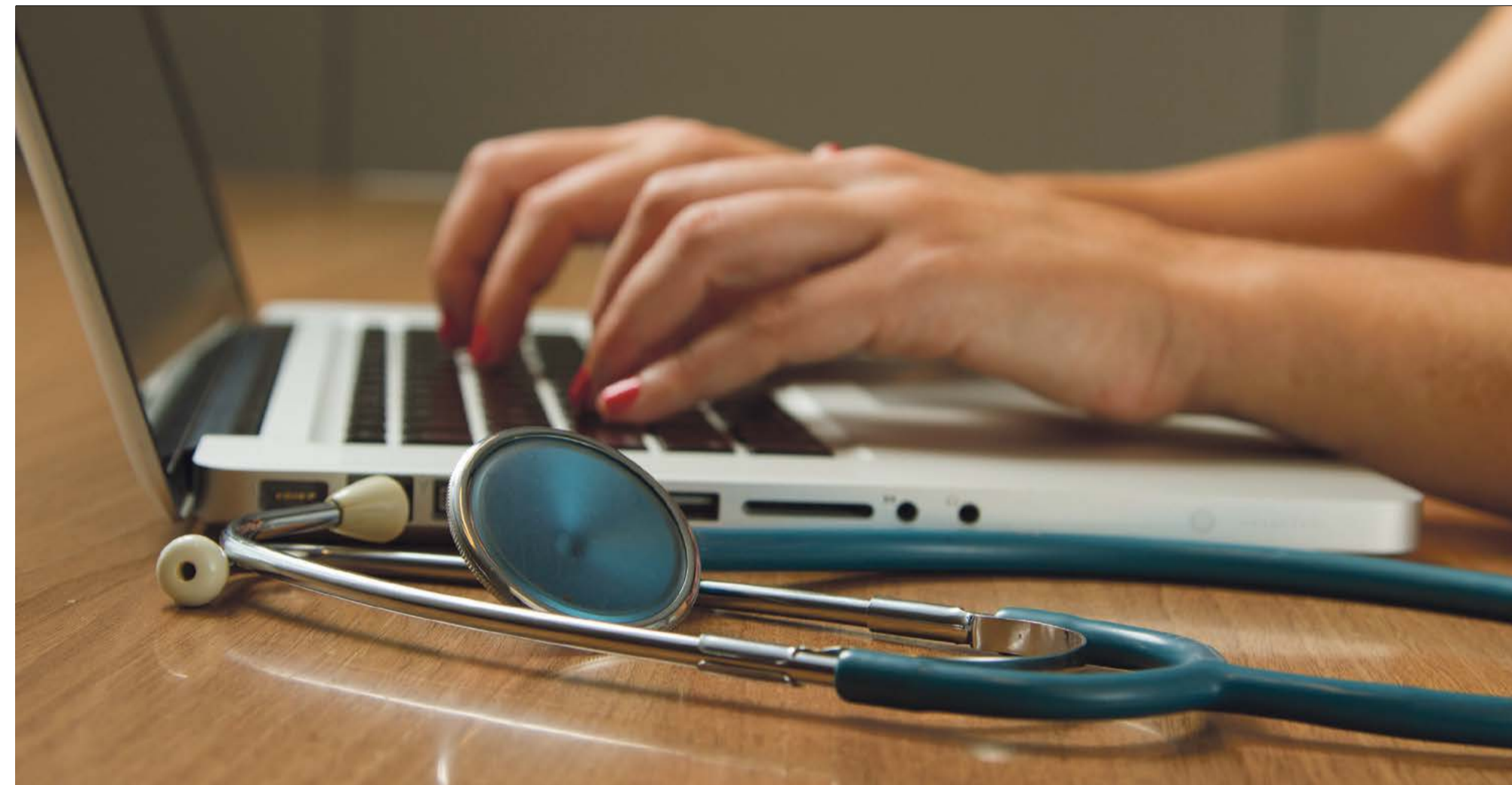
"I don't blame civil servants. They lack experience. They lack understanding," he says. Even lone politicians are hard to point the finger at.

"It's the system. Politicians don't stay around long enough. There's a four-year lag between what gets approved and what gets done. By that time the politician has moved on." The result is archaic, dysfunctional systems. "We talk about tech debt when code is not optimal or usable. The NHS is tech debt on steroids," he says.

While most sectors have been able to move on from the Covid crisis, for the NHS its legacy lives on. For example, the waiting list for routine NHS treatment has now reached 6.4 million people in England alone. Few operational settings could benefit more from digital efficiencies than NHS hospitals, yet they have found themselves falling behind their cousins in primary care.

When people need to see a GP today, they can book and track appointments through smartphone apps and access their records online. They can receive communication via text messages and other digital platforms. Despite the urgent need to relieve pressure on the NHS, many hospitals still predominantly rely on paper documents and the inefficiencies which naturally come with them.

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Commercial feature

# Hospitals must digitise now to relieve pressure

Hospitals have not only fallen behind other industries but also other sectors of care when it comes to leveraging technology to provide much needed efficiencies and better services

The pandemic accelerated digitisation across all sectors and healthcare was no different. Hospitals sought to embrace technology as a crucial component to relieving the extreme pressure their staff were under. But despite pockets of success, including using collaboration tools like video conferencing to speak to patients remotely, a lack of adequate systems remains.

While most sectors have been able to move on from the Covid crisis, for the NHS its legacy lives on. For example, the waiting list for routine NHS treatment has now reached 6.4 million people in England alone. Few operational settings could benefit more from digital efficiencies than NHS hospitals, yet they have found themselves falling behind their cousins in primary care.

When people need to see a GP today, they can book and track appointments through smartphone apps and access their records online. They can receive communication via text messages and other digital platforms. Despite the urgent need to relieve pressure on the NHS, many hospitals still predominantly rely on paper documents and the inefficiencies which naturally come with them.

Many IT professionals who have been in the healthcare sector for some time will be familiar with the resistance to IT projects in certain quarters of the NHS. Previous costly national digitisation programmes have led to the patchy use of technology seen in hospitals today. However, given the mammoth administrative burden on NHS staff, change is a necessity.

"In the digital world, we still see many hospitals that are not leveraging technology and that are left playing catch up with primary care," says Ashley Brook, director at healthcare technology company TPP. "It's becoming more apparent, both nationally but also within individual organisations, that technology is needed to help relieve some of the pressures the NHS is still under. We're not just talking about improving patient care but fundamentally making the lives of clinicians easier."

"In NHS frontline care, digital transformation only happens with the right buy-in and an appetite for change. It must bring benefits to patient care and safety. The public is more demanding than ever and keen to interact with the health service digitally. Much of the NHS workforce has a thirst to take

advantage of technology too, but we need to get better at getting this technology to the front line."

Technology has a critical role to play not just in driving efficiencies but also facilitating the NHS's desire for more integrated systems. Regional services need to work together more seamlessly and provide care whenever and wherever patients need it. Patient pathways between primary and secondary care, for example, would be substantially better served by a digital platform through which all data is available and accessible both by patients and their care team. Secondary care in particular has highly complex patient pathways

“

**In NHS frontline care, digital transformation only happens with the right buy-in and an appetite for change. It must bring benefits to patient care and safety**

that are incredibly time intensive to deal with manually. And though the efforts to leverage technology during the pandemic were commendable, they didn't stretch far enough.

TPP's philosophy for joined-up healthcare, based on shared electronic health records, improving access to clinical data and empowering patients to take part in their own care, offers the NHS an opportunity to embrace digitisation in a far more effective way. Used by more than 7,600 NHS organisations across more than 25 different care settings, SystemOne, TPP's core platform, already hosts over 50 million patient records in the UK alone. Meanwhile the company's patient-facing healthcare app, Airmid, enables people to take control of their own health.

"Our technology collates information and streamlines how hospitals deliver care, be that by providing great standalone systems or interoperating with other systems," Brook says. "Clinicians can spend less time staring at a monitor and more time on patient care. There is so much we can all now do on our mobile devices, so it's crucial to replicate that in hospital settings."

"Whether it's the patient or the clinicians requiring access to information, our out-of-the-box solutions simplify these interactions. Our mobile app Airmid puts the power of our software in citizens' hands, while our clinician smartphone app Brigid untethers the medical record from the PC workstation."

The 'out-of-the-box' functionality is attractive to the NHS, but only if the technology can constantly evolve with it. Healthcare is a fast-paced environment that evolves based on new learnings, evidence and data, so a digital system that both records changes and adapts to them is vital to facilitating high adoption. Put simply, the technology

must support the jobs of clinicians, doctors and nurses, not add additional burdens to their workloads, while taking into account new learnings.

Crucially, technology that unburdens NHS staff also needs to be affordable. The NHS has been burned in the past by costly solutions that have not been fit for purpose. TPP's solutions enable large-scale transformation and next-generation systems, while taking into account the financial pressure many hospitals are under.

"The platforms deployed in the NHS need to be flexible enough to deliver care now and in the future," says Eric Finlay, consultant paediatric nephrologist and clinical advisor at TPP. "I spend an enormous amount of my time phoning patients, answering telephones, looking for people, chasing results – all things that can very easily be solved by technology. With a unifying digital system like the platform from TPP, you could make some very quick and easy wins."

"Patients are ahead of us in the hospital sector. They are trying to contact us using digital platforms and social media but we have no way of safely communicating in those ways. We could very quickly provide a lot of clinical wins and time while also bringing all the evidence together and using it as a tool to facilitate engagement. Clinicians can ultimately then focus less on admin and more on clinic care, better prioritising patients. It's time to embrace digital health."

For more information, please visit [tpp-uk.com](http://tpp-uk.com)





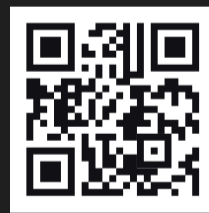
# When was your last PENETRATION TEST?



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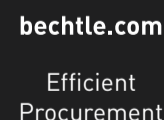
The National Cyber Security Centre (NCSC) are urging Public Sector organisations to bolster their cyber defences. It is vital you plan for regular penetration testing to identify areas of improvement, remain compliant to NCSC standards, and ensure your cyber controls are working effectively.

Bechtle's Penetration Testing service helps you detect and tackle recently discovered, and previously unknown, vulnerabilities. Our qualified team of CREST certified consultants can help reduce complexity, mitigate risk, and ensure your data is both secure and compliant. You will be provided with a detailed report on how to reduce your attack surface with remediation actions.



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