THE CONNECTION PROJECT

Misconnected

How the UK can choose a better digital future

First report – March 2026

Contents

"Participation in digital markets is no longer a luxury; it is a fundamental requirement for modern life. It has reshaped how we search for products, engage with businesses, and access the services we rely on to survive. Yet, millions across the UK remain on the wrong side of the digital divide – unable to participate in the economy or benefit from the next wave of technological innovation. Bridging this gap requires immediate, coordinated action from government, industry and regulators to ensure no one is left behind."

Anabel Hoult,
Chief Executive, Which?

Foreword

All of our lives have changed beyond recognition in the 35 years since we were first introduced to the internet.

Digital change has reshaped, and is continuing to transform, the services we rely on every day – more quickly and more fundamentally than at any point in recent memory.

For many people, that change brings clear benefits: greater convenience, new possibilities and services that work better than they once did. The UK has strong digital infrastructure, innovative businesses and a public sector rightly ambitious about modernisation. In many respects, digital transformation has been a success.

But the speed and scale of this transformation bring new pressures. Everyone I speak with about this project tells me a story – about their parents, or a relative or friend who is struggling to cope with the digital world we're now in. Or they tell me their own frustrations with digital services. Quite simply, "digital" isn't yet working for everyone, and as the pace of change accelerates, there is a real risk that even more people will be left behind. The issue is rarely one single event, or one service. It's the combination of change which we, citizens, experience as multiple services change all at the same time, and when we don't as individuals or businesses fit the "standard" box.

I have spent my career working in sectors undergoing major transitions – in banking, insurance, public services, health services, telecoms and national infrastructure. I've seen change designed really well, focused around the needs of the customers with service design so easy to use that it's been lauded. I've seen innovation rolled out focused on early adopters, with the aim to transition a wider group of customers later – a completely rational and well established strategy for many businesses. I've seen brilliant customer support journeys, and poorer ones too. I've seen teams who really understand customer needs, and those who don't. I have only ever worked with leadership teams who want to do a good job for their customers. People rarely come to work to do the opposite.

What's clear, though, is that each organisation is often doing things in isolation without a full understanding of people's circumstances. Myths abound about customer needs, giving false assurance that it's only a small group who are struggling, and they are almost exclusively 'old'. Many digital-only services assume that everyone has access to home broadband and mobile connectivity – when the reality is that there are still many who can't access it or can't afford it. Conversations with businesses, frontline charities, colleagues and friends all point to the same experience: systems that work well for many, but feel

confusing, fragile or exhausting for others. Most of us have encountered small frustrations. But for millions, the consequences are more serious – affecting their ability to manage money, access healthcare, stay informed or remain connected.

As artificial intelligence and further automation become embedded in service design, these tensions are likely to intensify. Digital change will continue, whether people like it or not. What we can do is consider how change happens. Can we create digital services which will be inclusive and trusted – or will low adoption, mistrust and exclusion limit its economic and social potential? A high-investment, low-adoption economy would serve no one well, leaving millions stranded on old, degrading services with low investment, while reducing spend on the new services which could help drive growth, productivity as well as consumer benefit.

At its heart, this is about fairness and confidence. A modern digital society should expand choice, not narrow it. It should increase capability, not leave people feeling less in control. And it should command trust across generations and communities.

The Connection Project was established to examine how we can make this digital future work for everyone, and deliver the benefits to society and the economy that it should. Over the past six months, we have worked with organisations responsible for delivering essential services across finance, telecommunications, media and infrastructure, alongside leading charities and consumer bodies. That breadth reflects a shared recognition that these challenges are real and already being managed in practice – often sector by sector, without a shared view of the whole.

We are not government, and we are not seeking to replace the responsibilities of regulators or industry. Nor are we attempting to solve this transition ourselves. Our role is more focused: to bring together evidence, to consider consumers in the round rather than service by service, and to clarify the conditions that would allow digital progress to be coherent, fair and sustainable.

This first report is deliberately diagnostic. It sets out what we know about how essential services are evolving and where unmanaged transitions are creating risk. Over the summer, we will test these findings openly with those who use services, those who support them and those who design and deliver them. In September, we will return with practical proposals and a roadmap for what a digital UK that works for everyone would require.

Digital transformation is already reshaping our economy and daily lives. The task now is not simply to accelerate change, but to ensure it strengthens confidence, widens participation and works – reliably and fairly – for the whole of the UK.

Natalie Ceeney CBE
Chair, The Connection Project

Executive summary

Digital participation is not a social extra. It is a prerequisite for a modern, productive and inclusive digital economy.

Digital technology now underpins almost every aspect of everyday life in the UK. Banking, healthcare, communication, business and public services are increasingly delivered through digital systems. For many people, these changes have brought more convenience, faster services and access to new opportunities.

But the UK's digital transition is entering a more complex phase. While infrastructure and digital services have expanded rapidly, participation has not kept pace. Millions of people still struggle to navigate digital systems with confidence. Many others are only partially confident – able to complete some tasks but blocked or anxious when the stakes are higher. These difficulties often surface at critical moments like accessing healthcare, managing money, applying for jobs or recovering from fraud.

These experiences are not confined to a small, static group of people. Digital capability is situational. Most people can manage some digital services but struggle with others depending on the task, the pressure they are under or the design of the system they encounter. Around 11 million people regularly rely on friends, family members or support workers to complete digital tasks on their behalf.

At the same time, the pace of technological change is accelerating. Fibre broadband rollout, the retirement of the copper telephone network, new authentication systems, digital identity initiatives and artificial intelligence will all reshape how essential services operate in the coming years. These transitions are happening simultaneously across sectors – telecommunications, banking, broadcasting, government services and healthcare. Each change may be sensible in isolation, but households experience them together. The cumulative effect can create friction, confusion and new risks.

The UK compares well internationally in terms of digital infrastructure and usage. Broadband coverage is high, smartphone ownership is high and digital payments and online banking are now used very widely. However, international comparisons reveal a different picture when it comes to outcomes.

Measures such as satisfaction, trust and confidence in digital services are weaker in the UK than in many comparator countries. Nations that achieve stronger outcomes tend to treat digital participation as a shared national objective rather than a peripheral social issue. They combine infrastructure investment with clear service standards, coordinated transitions, accessible support and long-term skills programmes.

These foundations are significant because digital systems only deliver their full benefits when participation is widespread. People want services which are safe and which work, whether digital or not. When trust in digital services is low, participation stalls, organisations must continue to run legacy systems. This creates parallel costs, operational complexity and political pressure to preserve outdated channels. Families, carers and frontline services absorb much of the hidden effort required to make systems work. At a national level, these frictions slow the diffusion of innovation and limit productivity gains.

Conversely, when participation rises, digital systems become more reliable and efficient. Organisations can simplify processes, retire legacy infrastructure and focus human support on complex needs rather than routine failures. Evidence suggests that broader digital participation could unlock tens of billions of pounds in economic value through productivity gains, higher employment and public-sector savings.

This report therefore examines whether widespread digital participation is a social policy concern, or a fundamental requirement of a modern digital economy

Drawing on evidence from regulators, industry, charities and international comparisons, the report finds that the UK's digital future will depend less on technological innovation and more on whether a small set of practical conditions are in place.

These include reliable and affordable connectivity, access to appropriate devices, usable and inclusive service design, trusted support when things go wrong, and clear plans for managing major transitions.

When these foundations are weak, people's confidence falters, adoption slows and the benefits of digital transformation are diluted. When they are strong, innovation can spread more quickly across the economy and society.

The UK now faces a choice. Digital transformation will continue regardless. The question is whether the country will actively strengthen the conditions that allow a digital society to function well, or allow change to continue developing in a fragmented way.

This report is deliberately diagnostic. It sets out the evidence on where the UK stands today, the barriers that prevent confident participation, and the lessons from countries achieving stronger outcomes. Over the coming months, The Connection Project will test these findings with people who use services, organisations that support them and those responsible for designing and delivering essential services. The next phase of the project will focus on practical proposals for strengthening the foundations of a digital society that works for everyone.

"Digital services can make life easier, but only if people trust them and can actually use them. As more of everyday life moves online, making the digital world inclusive and accessible is essential if technology is going to bring people with it rather than leave them behind."

Justine Roberts CBE,
Founder & Executive Chair, Mumsnet

Chapter 1

Lessons from the past

Chapter summary

From electrification a century ago through to the internet and AI today, managing the effects of new technology is a repeated challenge for any nation. The technology alone does not determine the outcomes. Choices about standards, access, support and responsibility determine how transformative technology affects citizens, the economy and society.

Throughout its history, the UK has experienced successive waves of technological change whose significance was often recognised only in hindsight.

Exactly 100 years ago, parliament passed the *Electricity (Supply) Act* 1926.[1] This Act centralised the control of electricity generation, standardised frequency and led to the construction of the National Grid.

In the early days, however, electrification was slow, fragmented, not altogether safe, and widely mistrusted. Many people saw little reason to replace systems that seemed to work well enough for them. For decades there was no single national plan, adoption varied between regions and it mostly benefited the wealthiest people.

The turning point came in 1925 with the Weir Report.[2] This changed people's thinking by recognising electricity as national infrastructure that called for common standards, long-term investment, regulation, public communication and practical support for households to adapt. Over the decades that followed, coordinated action between government, industry and civic organisations gradually made electricity universal, and its transformative effects became obvious. Infrastructure, rules, behaviour and expectations evolved together, and people needed time and help to change habits that had always worked for them. Today, it is hard to imagine that electricity was ever seen as anything other than essential and universal.

The UK is now living through another transition of historic proportions. Unlike electrification, however, which took 50 years to become universal, digital technology is spreading rapidly across almost every aspect of our lives simultaneously. Banking, healthcare, government services and communication are evolving all at once, and decisions made today will shape everyday life for decades. And as with electrification a century ago, the technology is advancing more quickly than the standards, regulation and accountability that govern it, which leads to inconsistent experiences and outcomes.

For many people, digital systems bring convenience and opportunity. But they also introduce a different kind of complexity. In the context of AI, data use and privacy – trust, safety, transparency and security are becoming major determinants of digital confidence and engagement. Online journeys can look very different from one another, support can be difficult to find, and people's confidence can fluctuate from day to day. Connectivity is not always reliable when it matters most. Some challenges, such as failed logins, confusing processes, or fear of scams, accumulate and gradually discourage participation, sometimes preventing people from completing essential tasks.[3]

Where systems don't meet people's needs, they often adapt. They turn to family members, neighbours or frontline staff, sometimes sharing passwords, bank cards and personal information so they can still achieve their goal.[4] Rather than personal failings, these behaviours reflect systems designed for independent users when in fact, around 11 million people in the UK regularly need help from friends, family or support workers to complete online tasks.[5]

Transitions are hardest while old and new systems coexist. During this period, the effort of holding things together shifts onto households, carers and local services, and the burden falls most heavily on those with the least capacity to adapt. And more change is already underway: fibre rollout, landline migration, possible changes to television distribution, digital identity and AI-enabled services will continue to reshape everyday life in ways we can't yet imagine. These changes do not arrive one at a time. They accumulate. A household can experience the shift to app-based parking, the closure of a local bank branch, new authentication requirements for healthcare access and the retirement of a landline within a few years. Each change might be manageable in isolation, but together, they alter how people experience everyday life.

As in the early days of electricity, the technology is changing our world while the rules are still catching up.

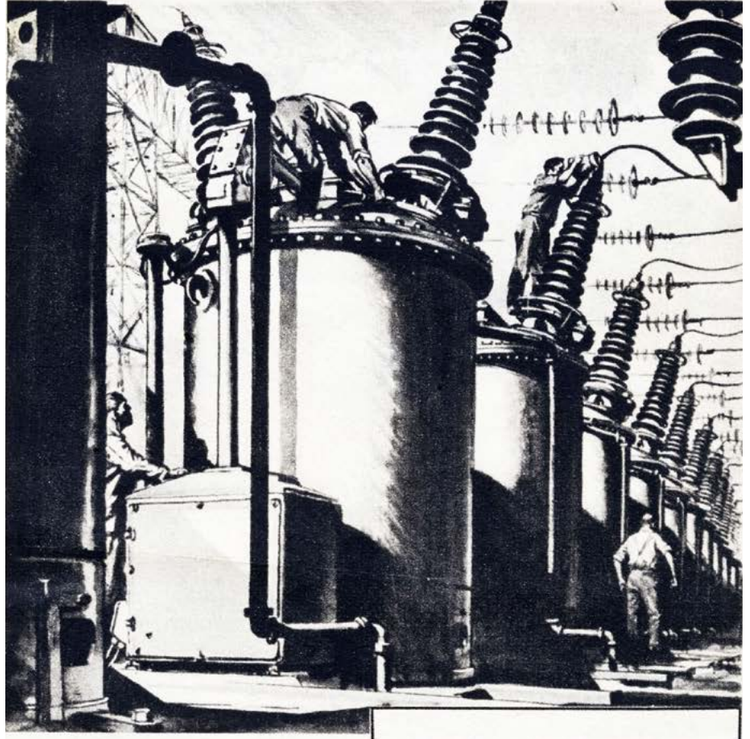
Earlier transitions indicate that outcomes are not determined by technology alone. Choices about standards, access, support and responsibility are the primary drivers of whether change produces widespread benefits or leaves gaps that weaken trust and participation. We are now at that tipping point that electrification experienced a century ago. Where our current transition goes next will depend on the decisions we make today.

"In 2026, world-class connectivity is no longer a luxury. Rather, it is the essential foundation of a modern, functioning society. To unlock the UK's full economic potential, we must treat digital access and literacy as a national necessity, bridging the gap between innovation and inclusion to create a nation where every citizen has the opportunity to thrive."

The Rt Hon the Lord Vaizey of Didcot

Electricity began to appear in parts of the UK in the late 19th and early 20th centuries. By the early 1920s, the UK had more than 600 separate electricity supply organisations, many of which operated at different voltages and frequencies. Some city centres had electric lighting but many towns and rural areas did not. Homes relied on coal fires, gas lamps, smoothing irons, scrubbing boards and mangles. Many people saw little reason to change. Others didn't trust electricity, and several shocking and well-publicised accidents struck fear into people more fearful of change than of the daily dangers of gas lamps.

It took a change in approach – the unifying of standards, the creation of the National Grid and a widespread change in people's attitudes and behaviour – for electricity to become truly universal and transformative.



ASSEMBLING SWITCHGEAR
High-voltage switchgear, such as this, will be used to control the flow of current from Britain's 38 new power stations to the National Grid.

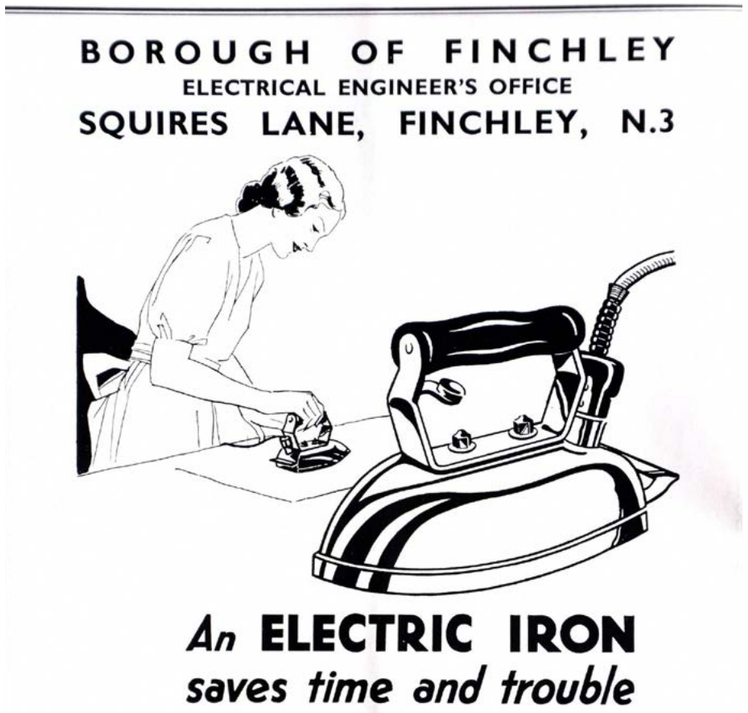
more power

— AND WHAT IT MEANS FOR YOU

MASSIVE outdoor switchgear, operating at electrical pressures up to 132,000 volts, is designed to ' make ' and ' break ' currents of hundreds of amps. Should a fault occur, the switchgear must be able to control electrical currents hundreds of times greater than those normally used.

Switchgear, in great variety of types and sizes, is required for controlling the ' More Power ' from British Electricity's 38 new power stations and the new plant being installed in 43 existing stations — the programme that is designed to end power cuts in the factories and in your home.

BRITISH ELECTRICITY



Chapter 2

How does the UK compare with other countries?

Chapter summary

The UK is seen as an advanced digital nation, and in many ways we are. We have invested heavily in our infrastructure, but we lag behind other nations in our levels of consumer participation, satisfaction with digital services, and trust. This matters because digital transition can only deliver its full benefits through widespread participation. In those countries where participation is strongest, digital access has been treated as essential, service design standards are clear and consistent, support mechanisms are visible, and major transitions are sequenced deliberately rather than left to evolve organically.

The UK position in context

The UK is widely considered to be a digitally advanced nation. To explore how it compares with others, we benchmarked the UK against Australia, Brazil, China, Estonia, India, Sweden and the United States, each of which has adopted its own distinct approach to digital policy, public-private partnership, infrastructure development, and building societal trust in technology. We examined:

- whether the foundations of a digital society have been built in infrastructure and core systems
- whether citizens actually use digital services
- whether this use translates into social and economic value
- whether countries have cross-cutting enablers – such as national vision and skills programmes – that allow a digital society to function well

Laying digital foundations

The UK has invested heavily in the building blocks of a modern digital society and compares well internationally on many measures.

Connectivity infrastructure

87% of UK households can access gigabit-capable broadband[6] – higher than Estonia (76%)[7] and the US (57%),[8] though behind Australia (87%),[9] Sweden (90%)[10] and China (close to 100%).[11] Full-Fibre availability has expanded rapidly and now reaches 78% of residential premises.[12] Satellite will continue to play an important role in some communities.

Access to devices

Smartphone ownership is near-universal across advanced economies, with around **90%+ of adults owning a smartphone in the UK, US, Sweden and Australia.**[13]

Mobile infrastructure

Mobile has a key role to play in providing connectivity. The UK is broadly comparable on 5G coverage: 94-97% of the population is covered,[14] compared with 98% in the US, 92% in China and 91% in Australia and Sweden. The UK remains ahead of India (82%) and Brazil (63%).[15,16]

Availability of digital services

The UK performs strongly in some areas and moderately in others. Around 23% of small and medium-sized businesses sell online – lower than the US (80%) and China (28%) but ahead of Estonia (20%) and Australia (12%).[17] Just over half of government services are fully online, yet the UN still ranks the UK highly (95/100), close to Estonia (100), Australia (92) and the US (91).[18]

These measures suggest the UK's digital foundations are well developed and broadly comparable with leading digital nations.

Using digital services

Use of digital services

The UK has high usage of some digital services, especially in payments and commerce. Digital payments are close to being universal: in the UK,[19] Australia,[20] Sweden and Estonia, 97% or more of adults used digital payments in the past year.[21] Digital banking usage stands at 92%,[22] ahead of the US (85%) and broadly comparable with leading nations.[23] The UK is also a heavy user of digital media and commerce; 89% of people stream online video, which is among the highest internationally).[24] And online retail accounts for 31% of all sales[25] – far ahead of most nations except China (47%).[26]

Adoption of the best connectivity technology

Despite its relatively high use of some digital services, the UK's adoption of the best connectivity technology lags behind its availability. Full-Fibre, widely considered the gold standard of broadband technology, now reaches 78% of UK premises, but only 42% of those households take it up – meaning that just 33% of households actually subscribe.[27]

This contrasts with 94% in China[28] and 71% in Sweden.[29] Population density and the existence of adequate legacy networks partly explain the differences; most UK households already have connections fast enough for everyday digital life. But the gap between the opportunity and take-up remains significant.

Households not connected

5% of households still have no internet connection, and adoption is slowing. In 2025, Ofcom reported that among households without internet access, 81% are unlikely to obtain it within the next year for a variety of reasons including confidence with a mobile alternative, affordability or not seeing the need for it.[30]

"Digital connectivity is transforming how we live, work and connect with the people and things that matter most. Building world-class networks is only the start. To unlock the full benefit of this transformation, we need to make sure everyone can access the technology and the opportunities it creates. That means a clear plan for the country, backed by policies that ensure no customer is left behind."

Claire Gillies,
Chief Executive, BT Consumer

"Ten years ago, we might still have been debating whether truly universal connectivity was even possible, particularly in rural or remote parts of the country. In 2026, the technology exists so that everyone can be connected, everywhere, all the time. When connectivity and participation is uneven, opportunity becomes uneven too. That is why getting it right really matters. Digital inclusion is about confidence, affordability, safety, relevance and support. It's not enough to assume "build it and they will come". People need support to take their first steps into the digital world, followed by confidence-building service design that helps them communicate, bank, watch media and live a safer life online. But this is not a challenge any one organisation can solve alone. A coordinated response across industry, regulators and government is essential."

Natalie Black CBE, Group Director for Communications and Networks, Ofcom

Consumer benefits and outcomes

The largest gap between the UK and these other countries appears not in infrastructure or usage, but in outcomes. In measures such as satisfaction, trust and confidence, the UK sits near the bottom of our comparator group. These measures are significant because trust and confidence lead to adoption, which gives policymakers the reassurance they need to facilitate change, and industry the confidence to invest.

Satisfaction with public services

Public satisfaction with digital services is lower (67%) than in Sweden (71%), Estonia and Australia (74%) and China (83%).[31] In the UK, the public is yet to be convinced that digital technology has had a positive impact on public services.[32] Satisfaction comes from being able to complete tasks quickly, easily and conveniently, and the outcome matters more than the channel. This translates into efficiency gains. Estonia estimates that digital identity and integrated services save citizens roughly five working days annually and generates economic value equivalent to about 2% of GDP.[33]

Trust

Trust also differs markedly. 60% of UK respondents report significant loss of trust in the internet due to scams – higher than Australia (49%), Estonia (44%) and China (45%).[34] Fraud often occurs at the boundaries between sectors where protections are inconsistent, and repeated exposure leads some people to disengage entirely.

Digital skills

The UK also lags behind in digital skills. Around 3.8 million adults still lack the full range of Essential Digital Skills needed for everyday life,[35] and up to 22 million adults in the workforce lack the Essential Digital Skills required in their jobs.[36] Workplaces remain the main route to improving digital capability, but skills training is fragmented across

sectors and organisations. We have also seen that digital familiarity is not the same as digital capability or wellbeing. Even among younger people who are confident online, evidence from Ofcom[37] and the NHS[38] shows rising levels of anxiety and harm.

Other countries treat digital skills as national infrastructure. Nations such as Singapore, Sweden, Estonia and China embed skills across education, adult learning and employment pathways, while also debating safeguards around harmful online experiences, including Australia's restrictions on social media use by under-16s.[39]

The economic effects of digital adoption are complex, but skills play a critical part in translating technology into economic benefit. International organisations such as the OECD[40] and World Bank[41] find that digitalisation can support productivity, growth and inclusion, but only when combined with skills, institutional capacity and organisational change. Without these, digital transformation can widen inequality without delivering sustained productivity gains.

"As the UK's financial system becomes increasingly digital, the challenge is not simply to innovate, but to ensure that change is coordinated, secure and works for everyone. Done well, this will increase digital inclusion that supports independence and financial wellbeing. Realising this potential will depend on clear rules, strong consumer protections and sustained collaboration across industry, regulators and government. Getting these foundations right is essential if digital change is to build confidence, reduce risk and deliver long term value."

David Geale, Executive Director of Payments and Digital Finance, the Financial Conduct Authority

What the UK can learn

In spite of their different governments, economies and cultures, we found that those digital societies which are getting the highest level of economic and consumer benefit share several characteristics.

1 A shared national goal of full participation in a digital society

High-performing nations treat digital participation as a long-term national objective rather than a collection of projects. Their long-term plans (such as industrial strategies) acknowledge where investment, impact and measurement rely on digital infrastructure and capability. They coordinate digital change by aligning standards, regulation, incentives and funding nationally, and citizens are supported locally through trusted organisations.

2 Citizen-centred service design and trusted support

Services are designed around people. Accessibility, identity and fraud protection are embedded from the start rather than added later. Safety and inclusion reinforce each other; people use systems they trust.

3 Recognition of connectivity as essential infrastructure

Digital infrastructure is treated like other essential infrastructure, which ensures that it is universally accessible and affordable.

4 Clear plans for retiring legacy systems

Countries set clear timelines, communicate early and provide support while migration takes place, recognising that it is in nobody's interests for more vulnerable consumers to be left on older and more fragile systems.

5 Partnership between the public and private sectors

In some countries, shared foundations are established through industry-led frameworks operating within regulatory guardrails. In others, government plays a more direct convening role. Both models can succeed, as long as responsibility is clear and incentives are aligned.

6 Measuring consumer outcomes as well as activity

Success is measured through time saved, reliability, trust and participation, not simply service availability, logins or transactions.

What this comparison tells us

Evidence from other countries suggests that digital success is not determined by infrastructure alone. The UK compares well on connectivity and usage, but is far less consistent when it comes to outcomes. In countries where participation is strongest, digital access has been treated as essential, service design standards are clear and consistent, support mechanisms are visible, and major transitions are sequenced deliberately rather than left to evolve organically. The UK clearly has no lack of innovation or ambition, but participation depends on a set of foundational conditions that work together.

Connecting the nation

Katie Milligan, Chief Executive, Openreach

"Over the past decade, Britain has been rebuilding one of its most important national assets: the network that keeps our homes, businesses and public services connected. Broadband is no longer a nice-to-have. It helps people work and learn from anywhere, access healthcare, manage their money, stay close to the people they love and access the services our country depends on.

Full-fibre is significantly more reliable than older technology, which means fewer failures and less disruption for customers. It's also more energy efficient and has a lower carbon footprint than copper networks. For businesses, it provides the stable, high capacity foundation needed for modern hybrid work, cloud services and AI enabled productivity. This is why Full-Fibre is important, and why finishing the job is now a national priority.

At Openreach, we (and our owners, BT Group) have committed more than £15 billion to building a Full-Fibre network that's faster, more reliable and more resilient than anything that came before. Other network providers have also played a valuable role, helping accelerate rollout and broaden choice. Government support has been vital too. In many rural and hard-to-reach areas, the cost of building Full-Fibre is simply higher than commercial investment can justify. Public funding has stepped in to close that gap.

But we can't pretend the job is done. Millions of homes still can't order a Full-Fibre service. Some are in the hardest-to-reach places. Others are in apartment blocks where residents can't have Full-Fibre installed without the written permission of the landlord or freeholder. This is a real barrier to digital inclusion.

Britain has made real progress, and that is worth recognising. The challenge now is to keep going. To tackle the hardest cases, make the right policy choices, and make sure that no one's left behind. We're proud of how far we've come. But there's still more to do – and we're determined to get it done."

Mobile: closing the digital divide

Nicki Lyons, Chief Corporate Affairs and Sustainability Officer, VodafoneThree

"Today, connectivity is a fundamental requirement for participating fully in modern society. But as of 2025, the UK lags all 27 EU countries for 5G download speeds, causing millions to potentially lose out on the benefits of a truly world-leading mobile network.[42]

We want to reset the expectations and confidence that people have in their mobile connection. To do this, the telecoms industry is testing new models to keep the nation connected. Across the industry, we are investing in the next-generation networks that will underpin the UK's digital transition *and* working to ensure people can adopt, understand and benefit from the digital tools that these networks will enable."

"As the UK moves toward a next generation digital infrastructure, retiring older mobile technologies such as 2G and 3G marks another important, sector wide step. Reallocating these frequencies allows the industry to provide better performing 4G and 5G services, all while reducing the energy required to run these networks. Doing so responsibly, however, will mean ensuring customers who rely on older devices or services are supported every step of the way. Similarly, initiatives such as the Shared Rural Network will remain a vital part of the equation when it comes to improving mobile coverage in some of the UK's hardest-to-reach locations.

We recognise the role our industry plays in closing the digital divide, though past experience also shows us that no single organisation can solve it alone. Ultimately, meaningful change requires collective action – from government, civil society, charities, educators, technology partners and the wider private sector.

Inclusion and innovation: banking on a better digital future for the UK

Jose Carvalho – CEO Retail Banking and Wealth, HSBC UK Bank plc

Solange Chamberlain – Chief Executive, Retail Bank, NatWest Group

Vim Maru – Chief Executive, Barclays UK

Jasjyot Singh OBE – Chief Executive, CEO Consumer Relationships, Lloyds Banking Group

Over the past 30 years, financial services have been front and centre in the UK's digital transformation. Proudly responsible for looking after our customers' money and financial lives, every day we facilitate millions of interactions – from small daily payments to the big moments like buying a home, navigating a major change in life or planning for the future.

Encouraged by their interactions with digital-first companies like Amazon, Uber and Facebook, people's expectations of speed, personalisation and simplicity, keep rising. In response, the financial services industry has been evolving constantly. Digital is now the main way many people interact with financial services.[43] Customers value the control, immediacy and flexibility it offers. And they value a broader set of propositions that make their lives easier; reward and loyalty schemes, savings pots, dynamic in-app education and accessing credit scores."

"Confidence in digital systems is only as strong as its weakest link."

Digital banking can't happen without safety, trust and, in a digital age, collaboration

Putting our customers at the heart of what we do and making sure they can have prosperous digital and financial lives calls for more than a good app. People need reliable access, motivation, knowledge, confidence and security. Crucially, they also trust. For consumers to engage, they need to see the value, safety and simplicity of the digital service they are engaging with. Journeys must 'just work'. They should be designed intuitively, accessibly, and be resilient when something goes wrong. One bad digital experience somewhere impacts digital confidence and engagement everywhere.

Each major retail bank has invested separately invested in digital accessibility, embedded inclusive design, customer skills programmes, assisted digital channels and support. To further build trust, we have together worked on initiatives like the Banking Protocol (a rapid response scheme linking bank branch staff and police). This has stopped substantial fraud and helped protect customers at the point of vulnerability.

We know that when we can align on key areas that matter for our customers, we can often reduce duplication and friction, and lift outcomes across the board.

Inclusion is not a competitive space. The benefits of going digital are clear. It empowers customers with more information and lowers costs for firms which can mean cheaper products and services. Current indications are that across sectors, over 95% of customers are digitally active. But we recognise more needs to be done to ensure the digital world can work for everyone.

In financial services, another strong precedent of working together when it matters most – particularly when it comes to protecting customers and support people at risk – are Banking Hubs. These are shared, face-to-face banking services in communities, co-funded by the UK's biggest banks through a not-for-profit company, Cash Access UK. This collaboration has been a huge undertaking. Many people said it would be impossible for competing banks to share a building. But the hubs are now a successful part of our collective community footprint. There are currently over 200 hubs in communities across the UK, and we have made a joint commitment to open 350 by 2029.

Digital banking as part of modernising the UK

Government and firms across different sectors have worked hard to transform their offering to customers but there are areas where we can do more to collaborate across the UK economy:

- **Connectivity and digital access** – how can we work across sectors to build national resilience, by considering the Internet as critical national public infrastructure?
- **Digital skills and education** – AI is accelerating the pace of change. How do we work cross-sector to support the right digital skills, ensuring citizens cannot just navigate digital interfaces safely and responsibly but unlock the opportunities of new tools and technologies – including with AI?
- **Digital service standards** – each sector provides support to vulnerable customers and customers in difficult circumstances, such as during a bereavement. How can we do this more quickly and efficiently across sectors and across Government?

We must also be honest about the cost of inaction. Fragmentation, duplication and exclusion risk slower growth, eroding trust and leaving people behind.

For the first time in a generation, we have the tools, the data and the technology to reshape how the UK functions economically and socially. Through our scale, reach and extensive experience in digital transformation, the Financial Services industry has learnt a lot about what motivates customers, what challenges they face, service expectations and environmental factors. But there is much we can learn from looking to other sectors and international examples. While our own delivery plans continue, there is an opportunity to consider collaboration where it makes sense for consumers and is non-competitive.

Working with other sectors, we can ensure the next chapter of a digital UK is a more productive, more trusted, and more inclusive economy; one in which digital puts opportunity within reach and ensures everyone can thrive.

"A truly effective modern society depends on full digital connectivity and digital services that work for everyone. As the UK continues its digital transformation, inclusion cannot be an afterthought – it must be a foundational principle if we are to drive growth, resilience and social cohesion."

Sir Ron Kalifa OBE,
author of the UK Fintech Review
and former CEO of Worldpay

Case study:

Singapore: a life-long skills provider

In Singapore, skills training is seen as a normal part of working life. Its national programme, SkillsFuture Singapore, helps adults gain new skills throughout their careers. Every adult is given credits they can use to pay for approved training courses, ranging from basic workplace skills to specialist technical training. The aim is to help people stay in work, progress in their careers, and adapt as jobs change.

The programme is co-designed with employers to make sure it aligns with real jobs and future skills needs, so that people can move between roles or industries as the economy changes. People who are over 40 are six times more likely to participate in digital skills and career transition training, and between 2023 and 2024 the proportion of digital/tech courses being taken tripled.[44] Since its launch in 2016, 37% of Singaporeans have used their training credits, and 55% of previously unemployed trainees found jobs within six months of finishing the programme.[45]

Case study:

Sweden's hybrid digital-human approach

Sweden combines advanced digital infrastructure with strong human support. Around 95% of adults use BankID, which enables seamless access to banking, public services and healthcare.[46] Adoption and trust are high. Accessibility is reinforced by Swedish law, which sets binding standards with fines for non-compliance. The Swedish approach works because it blends:

- Hybrid delivery: citizens can use digital services confidently, with face-to-face, telephone and local support available when they need it.
- Shared responsibility: Banks, agencies, and local authorities collaborate to reduce drop-out and frustration, allowing smooth transitions between assisted and self-service journeys.
- Systemic impact: most essential digital services meet accessibility standards, while ongoing improvements ensure new and existing services are inclusive.

Chapter 3

What do people really need?

Chapter summary

Between 14 and 22 million people experience at least one barrier to using digital services. Our needs-based segmentation highlights the real challenges people face when they use (or attempt to use) a wide range of digital services. Although there are differences between the segments, they share points of friction. If we can resolve these issues, we could meet the needs of millions more people and open up digital participation dramatically.

The myth of the "excluded minority"

Most people don't want "transformation." They don't want to be educated or migrated – they simply want the systems they use every day to work. People want to manage their money, book GP appointments, stay in touch with family and enjoy entertainment. When services do these things well, the technology disappears into the background. When they fail, people feel frustrated or anxious; they find workarounds, rely on others or simply stop trying.[47]

There is a persistent myth that most people are coping, and only a small, static (usually older) group is "left behind." Framing the problem this way encourages marginal fixes and perpetuates inequality. Our research busts this myth. And we have found that confidence and capability are not fixed traits either. Most people are neither permanently confident nor permanently unable to use digital systems. Instead, capability is situational. It varies by task, context and what else is happening in someone's life.[48,49] Very few people are wholly offline,[50] yet millions are *part-confident;* able to use some services for some tasks but blocked or anxious in others. Few of these people would describe themselves as "digitally excluded". A person can be happy messaging family and shopping online, but struggle to complete a government form, change a banking setting, prove identity, or recover account access after a mistake.[51,52]

Problems frequently surface at moments of stress and high stakes like a password lockout, a broken device or having to perform an unfamiliar task under pressure. Even highly digitally literate people slow down and double-check when they are sending money, applying for benefits or managing health issues where mistakes have significant consequences.[53] And a badly designed service will flummox even experienced users – five apps to park locally, identity checks that require documents people no longer receive, the ability to open but not close an account, or nine different apps to enable a child to complete their homework. These often lead people to find practical workarounds that are insecure or exhausting – or just to disengage and give up.

This is not simply a matter of age. A period of poor mental health can affect short-term memory, our ability to process complex information and our ability to make decisions, communicate and navigate online forms.[54] Someone who is usually able to navigate services online might switch to analogue options so that they can limit access to credit, control their spending, or because they simply can't remember any of their login details. People can also fall out of step after time out of work, role changes, or exposure to new tools.[55] Many young people leaving school lack the skills, devices or confidence to navigate today's job market. The pace of change means any of us can quickly feel the frustration technology was supposed to remove.

"In a society that's digitising as rapidly as ours, some of us will struggle all the time, but all of us will struggle some of the time."

Tom Loosemore,
Founder, Public Digital

Why design choices matter

Categorising people as “included” or “excluded” understates the scale and complexity of the challenge. It also misdiagnoses the solution, and effort goes into remediation at the margins (training, device donations) rather than improving the design of services so they work for more people.

Design choices shape people’s experiences. Multiple logins, changing verification checks and unfamiliar interfaces compound people’s stress, especially when there’s no obvious way back in after a mistake and no phoneline to call. A single convincing impersonation attempt can trigger a cascade of recovery steps including account freezes, repeated identity verification and hours spent on helplines. Even when people avoid financial loss, the experience can undermine their confidence. But small, practical design principles – clear escape routes back to a familiar homepage, visible help and an easy path to speak to a person – can turn each visit into an opportunity to build people’s confidence.

There is also a smaller group for whom full online engagement will never be realistic; people with severe cognitive impairments, some with profound disabilities, and others who, for personal or cultural reasons, prefer offline channels. Their needs are different and require sustainable alternatives. In practice, this often means everyday delegation: a daughter logging into a parent’s bank account, a neighbour completing an online application, a volunteer helping someone navigate identity checks. This informal support is widespread but largely invisible in system design, and often carries risks both for both the carer, and the person being cared for.

When systems are hard to navigate, the cost does not disappear. It is redistributed to families, frontline staff, call centres and charities. Friction in design becomes demand elsewhere in the system.

Our segmentation shows that better digital design would address a wide range of needs – and yet it has often been lower on organisational agendas than training or device provision, which serve fewer people. Understanding people’s needs is essential to target effort where it has the biggest impact.

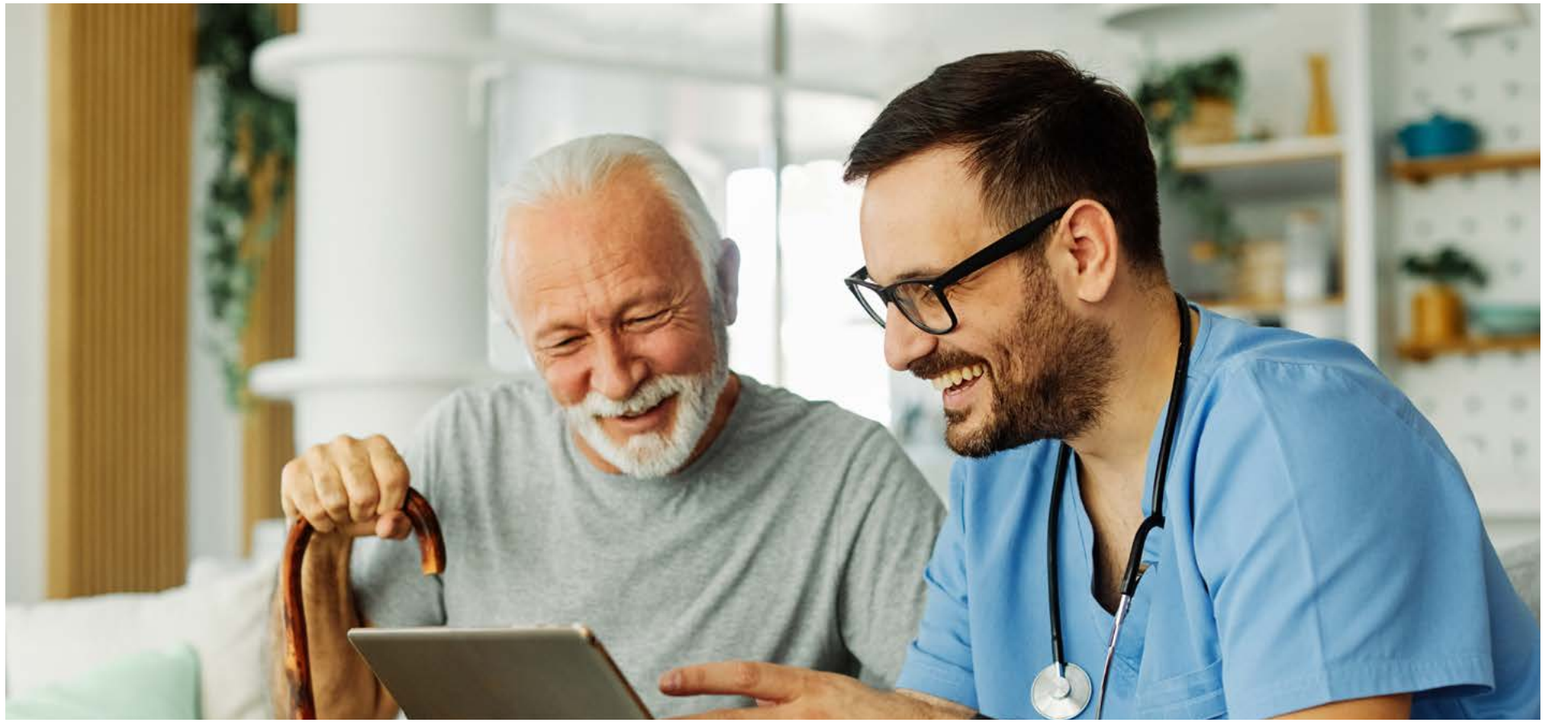
Looking at people’s needs

Until now, there has been no common, cross-sector view of people who struggle with digital services. Organisations design around what they control: banks build banking journeys; telecoms firms optimise connectivity offers; government departments design processes that follow policy rules. Each makes choices that make sense in isolation, but together they create complexity that nobody would design intentionally.

People experience this as a proliferation of small hurdles: multiple passwords to remember and recover; repeated proofs of identity in different formats; inconsistent language describing the same things; and failing to find help when things go wrong. For confident users these are irritations, but for people under pressure they can be overwhelming.

Over the past two decades, research by academics, regulators, industry and charities has mapped where journeys break down and what helps people succeed. Much of this work is sectoral and task-specific, and it is rarely brought together. As a result, the same people are described using different segmentation models and different language, which makes shared problems harder to spot and coordination harder to achieve.

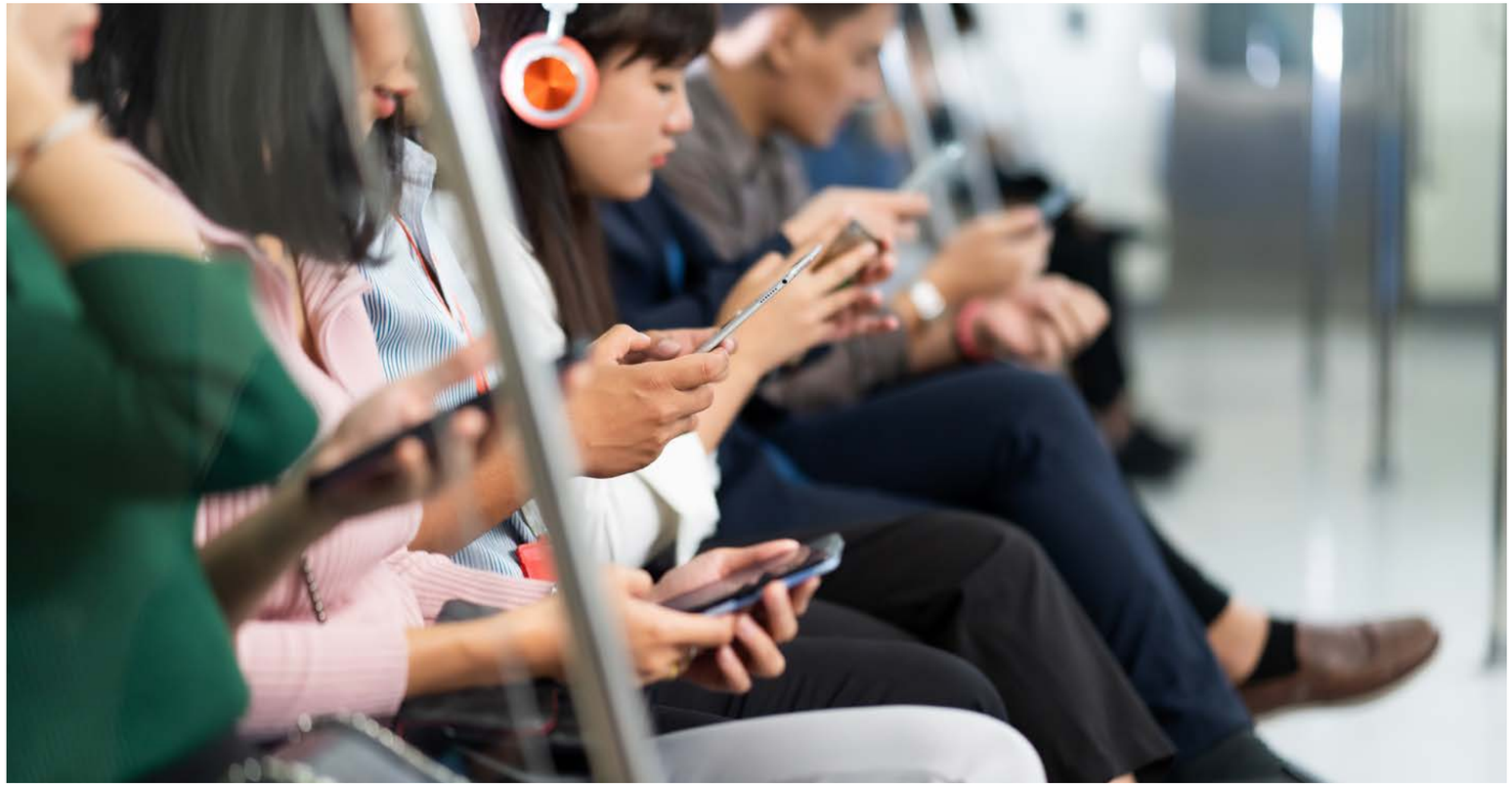
Many segmentation approaches rely on demographics (age, income, disability). These characteristics are important, but they don't explain what people are trying to do, where they hit barriers, or why systems fail them. This approach also ignores that idea that confidence is situational; the same person can feel capable for some tasks and overwhelmed for others, depending on the risk involved and pressures in their life.



Towards a common needs framework

To design services that work for people who struggle we need a common, actionable view of their needs. We have brought together data and insight from regulators, industry, charities and third-sector organisations, and incorporated lived experience from case studies and qualitative work. We looked for patterns that recurred across services and contexts.

We chose a needs-based approach to shift attention from personal characteristics to what needs to be true for everyone to participate. This makes interventions more likely to have impact. From the evidence, a small set of shared “needs segments” emerged consistently across different sectors and services.



How many people struggle?

Multiple sources indicate the scale is substantial: between 14 million and 22 million people in the UK experience at least one significant barrier, risk or dependency in navigating a digital-first society.[56] This range is large, but the barriers tend to cluster around a relatively small set of core needs. Tackling these needs would include many millions of people in a digital society.

There are also some relatively easy ‘wins’.

4–8 million

4–8 million people would build digital skills if they had trusted tools and routes to learn.[57]

~5 million

Enabling carers or families to support others digitally could unlock participation for a further ~5 million people.[58]

The seven needs-based segments

These segments are **needs descriptions**. They are not mutually exclusive; people can experience multiple needs, temporarily or permanently.

1 Connectivity Cravers

Who they are:
People who want to be online but lack reliable access to suitable devices, data or connectivity.

How many people (estimate):
1.6m–5m[59]

2 Capability Seekers

Who they are:
People lacking specific, goal-driven digital skills such as email setup, online job applications, or marketing a business.

How many people (estimate):
4–8m[60]

3 Digital Rejectors

Who they are:
People reluctant to adopt digital services, preferring human contact or distrusting institutions, surveillance, and data use.

How many people (estimate):
>2m[61]

4 Assurance Seekers

Who they are:
People who want to participate but lack confidence in high-stakes tasks like managing money, benefits, or health.

How many people (estimate):
>5m[62]

5 Reliant on Others

Who they are:
People relying on others to complete digital tasks, including family, friends, or paid supporters, with dependence changing over time.

How many people (estimate):
>5m[63]

6 Diverse Needs Users

Who they are:
People with disabilities, neurodivergence, low literacy or limited English for whom standard interfaces do not work.

How many people (estimate):
>4m[64]

7 Safety Exposed

Who they are:
Active online users at heightened risk from scams, impersonation or coercion. They have devices and connectivity but struggle to judge risk or recover after harm.

How many people (estimate):
3–5m annually[65]

1 Connectivity Cravers (1.6m – 5m people)

Description: Those who want to be online, but who lack reliable access to devices, data or connectivity. Their need is often driven by affordability, in households that struggle to manage competing priorities with limited budgets. Other factors include the lack of connectivity in rural areas, blocks of flats and urban cold spots.

Key design considerations:
Affordable and dependable broadband and mobile coverage where they live and work.

Carmen.

29, single, civil engineer.
Lives in East London in a rented flat.

> **I wish I could get decent broadband**

"My flat doesn't have decent broadband and the mobile signal where I live is pretty rubbish too. I have to do all my life admin in the office, which my boss doesn't like. I can't stream either, which is super annoying. But flats with decent broadband seem hard to find, and expensive. I feel like I'm in the dark ages."

Chris.

38 single parent. Three children (8, 10, 16).
Lives in a house in Swansea, with a mortgage.

> **The kids can't do their homework without a laptop**

"Since my divorce we're struggling to make ends meet. My kids all need broadband at home for school and to chat with their friends, but just paying the bills is a real struggle. My mobile phone is essential for work, but I often run out of data – I just can't afford it. My dad guilt is through the roof."

Carol.

61, farmer, married, Yorkshire.
Lives in home owned by farm business.

> **It's taking ten times longer than it should**

"We can't get decent broadband at home and the mobile signal around the farm is non-existent. DEFRA assume everything is done online now, so that's a real struggle. I could save 20% on my fertiliser costs if I could use the GPS features on my tractor, but it needs a mobile signal!"

2 Capability Seekers (4-8m people)

Description: People lacking the specific skills for their circumstances – from the basics of setting up an email account or connecting to wi-fi to applying for a job online or marketing a small business. Usually there's a very specific motivation, not a general 'skills gap'.

Key design considerations:
Flexible, trusted, on-demand support when it's needed – including in-journey guidance and informal learning that fits around daily life.

Sofia.

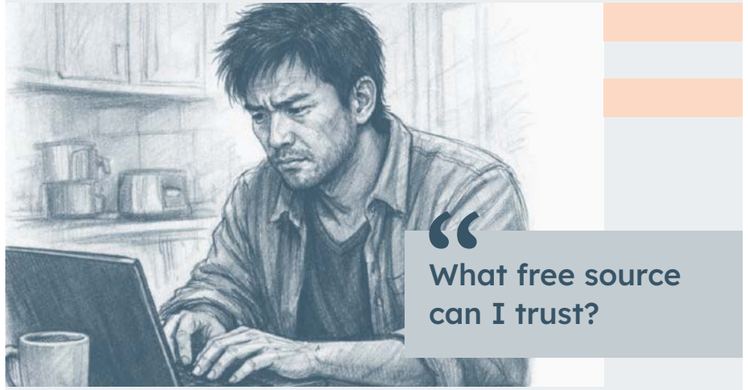
79, retired nurse.
Lives alone in flat in Brighton.

"If someone could show me how...

"I like using my tablet. I video call my friends in America which is brilliant and free! I like watching boxsets on Netflix, as daytime telly not my thing. My next mission is to work out how on earth to create a photobook as my storage is full and I don't want to lose all my pictures. I've been paying £1.99 for extra storage but I need even more now."

Suresh.

48, newly unemployed for first time in career.
Lives in Essex.



"What free source can I trust?

"It's tough right now. It's been years since I've applied for a job. I've put together what I thought was a reasonable CV, but I just keep getting rejected at the first stage, I'm obviously doing something that the AI bots don't like. My friend said I should set up a profile on LinkedIn but I don't know what a good profile would look like for me – applying for jobs is so different now. I'm not sure what to do."

Samuel.

31, mobile barista service.
Lives in Leeds.

"I'd love to practice in a safe space

"I've just started my mobile coffee company and want to spread the word. I need to work out where to put my time and energy on social media and how to develop content. I'm also being asked to do contracts for corporate events, but I've never done anything legal before. I know AI can help but don't know how to use it sensibly, and it's all a bit daunting."

3 Digital Rejectors (>2m people)

Description: People with low motivation to adopt digital services, preferring human contact. This can be driven by fear of fraud, simply preferring things how they are, or being wary of surveillance. They aren't behaving irrationally – their refusal is based on logic and experience.

Key design considerations:
Above all, they need a reason to make the change. Offer respectful alternatives, visible human routes and clear reasons to change with a seamless transition.

Rose.

74, charity worker, 5 grandchildren.
Lives in Camberley.

"I go to my clubs and volunteer at the local charity shop, so why do I need online friends? I'm in town all the time so can easily get what I need. I do pay for things by card, as lots of places don't take cash now, but I do my banking in the Hub. I have a basic mobile phone which the grandchildren laugh at. I'm happy doing things the way I always have. If it isn't broken, don't try to fix it!"

Ricky.

33, hotel worker.
Lives in Torquay.

"I spent my childhood in and out of foster care and school didn't work for me. The system has let me down so often and I feel like I've been labelled by society, even though I've worked since I was 16 and never been in trouble. I don't trust the government or these big corporate organisations. I don't want anyone monitoring me. I pay for everything I can using cash. I don't trust them with my data."

Roberto.

81, retired GP.
Married. Lives in Goole.

"I just won't bank online, however much I'm told I should. I've got friends who've been scammed and I'm not going to take the risk. I'd prefer to get on a bus and go to a branch for help – then I won't lose any money. I will use the internet for calling the grandchildren, and my wife does our shopping online, but it does make me really anxious. We can't afford to lose money."

4 Assurance Seekers (>5m people)

Description: People who want to engage but lack confidence when online, particularly for high-stakes tasks such as managing money, benefits or health. Fear that if they get it wrong, they will be to blame.

Key design considerations:
Simple intuitive design. Reassuring and appropriate language. Safe or calm modes. Access to support and help during the journey. Ability to practice. Strong preference for trusted brands and human confirmation.

Abdul.

84, widowed. Lives in an assisted living complex in Nottingham.

“My wife used to do everything online and I am lost without her. I tried to book a GP appointment online but no one rang me back, I must have done it wrong. My son bought me a new TV, and I can’t use it! This is just so overwhelming – I keep putting off tasks until my son comes round and then he can show me what to do.”

Anna.

36, part time teaching assistant.
Married and 1 child in Port Talbot.

“I use my phone all the time – WhatsApp, school emails, ordering shopping. That’s fine. But when it’s something important – like renewing car insurance – I panic a bit. The forms are long and I’m scared of clicking the wrong thing. What if I miss something and it costs us money? I usually wait until my husband gets home or I ring the helpline. I just don’t trust myself with the big stuff.”

Ava.

23, trainee beautician.
Lives with parents in Aberdeen.

“I need to apply for universal credit as I’m training to do cosmetic beauty treatments. I have no idea whether I’m filling the form out correctly, some of the language is so confusing. Apparently if I get it wrong they can cut my benefits or prosecute me, which is terrifying. I wish it was easier or someone could check it for me.”

5 Reliant on Others (>5m people)

Description: People who depend on family, friends or paid supporters to complete some or all digital tasks. Levels of dependence vary over time. Retaining independence may be important but they need to be safe. Often share passwords and logins with others as the default way to get support.

Key design considerations:
Safe, auditable delegated access (both for and beyond formal Power of Attorney), recognition of carers and flexible permission controls that preserve dignity.

Omar.

44, has lost custody of children and is experiencing severe depression. Bedsit in Norwich.

> **I just need help right now**

"I'm really struggling right now. Just getting up each day is a challenge and the slightest issue makes me panic. I've stopped reading emails. I'm off sick and can't face looking at my bank balance. I've just given my mate my passwords and he's just pretending to be me and sorting everything out. He gives me cash each week. I can't think more than one day at a time."

Otis.

20, moderate learning difficulties, in a shared house with supported living in Derby.

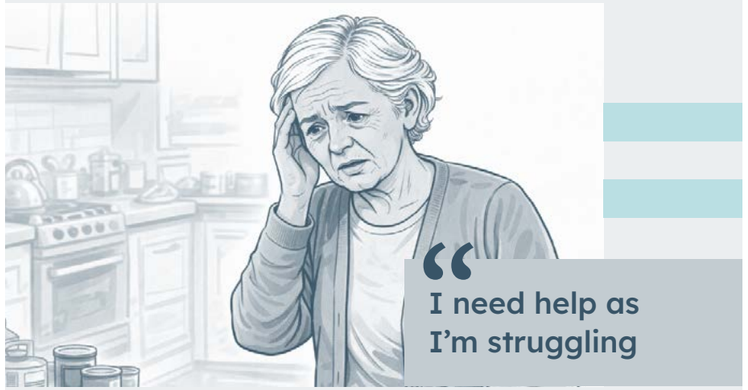
> **I want more independence – safely**

Otis: "I want to go shopping without asking for money first. I wanted to go to the cinema with my friend and somebody else had to buy the ticket and print it off for me. I'm not a child."

Otis's carer: "Otis really wants to be independent, but he's not good with money. He's given away everything in his pocket to strangers before now."

Olive.

80, early stages of dementia. Lives alone in Loughborough, nearest family in Sheffield.



> **I need help as I'm struggling**

"I keep making silly mistakes and it's so frustrating. My kitchen cupboard is full because I think I've run out of things when I haven't and then I forget to eat so I was wasting food and money. I've asked my home help to do my shopping now, I just give her my bank card and pin number."

6 Diverse Needs Users (>4m people)

Description: People who need “digital” to work seamlessly with the everyday tools they rely on to use their computers or phones, such as screen-reading software, magnifiers, voice readers or modified keyboards (“assistive technology”). May also need simpler layouts or alternative formats.

Key design considerations:
Interoperability of digital propositions with adaptive tools. Simpler versions. Accessible design. Adjustable parameters. Space to disclose needs to provider through a ‘tell me once’ approach.

David.

42, visually impaired, software engineer. Manchester.

> **Build accessible services!**

“As a software engineer, I manage pretty well online. I have assisted tech, including screen readers and enhanced browser functionality but some of the websites and apps are just not built with adaptive technology in mind. PDFs, videos, images and complex site navigation make things a lot slower or impossible. It’s crazy that charities can build compatible sites but businesses can’t.”

Davina.

56, wildlife conservationist with severe dyslexia. Wiltshire.

> **Make it voice readable and simple**

“I ask people to call me rather than text as I struggle to read. My girlfriend helps me with the online stuff I need to do – I feel ashamed telling people that I can’t do it myself. I’m not stupid – just dyslexic. If things were written more simply, or it was easier to use voice readers I could do a lot more without asking for help.”

Daisy.

28, civil servant. Neurodiverse living in Croydon.

> **Just design things well**

“Most of the time doing things online is fine but when the design is wrong it actually makes me feel sick. Small thing, but I tried to order a pizza on an app and emojis started dancing all over the screen I just had to forget it. My bank now has the option to cut the music when I’m in a queue, which I love! So many companies are just careless in their design.”

7 Safety Exposed (3-5m people)

Description: Active users of digital services at heightened risk of harm online. Find it hard to judge risk, and are more likely to experience scams, impersonation or coercion. They are more exposed to harms where language induces a sense of urgency and fear without time for considered thought.

Key design considerations:
Safety-by-default design, proportionate friction at high-risk moments, clear warnings and rapid human support.

Emily.

32, self-employed therapist. Lives in Birmingham with her 4 year old son.

“I run everything through my phone – bookings, suppliers, banking. I got a message saying my supplier had changed their bank details. It looked exactly like them and I was rushing between clients. I paid £1,200 for stock and then they just disappeared. The bank asked if I’d checked properly – but how was I meant to know? I feel stupid. That’s a week’s earnings gone. I can’t afford mistakes like that.”

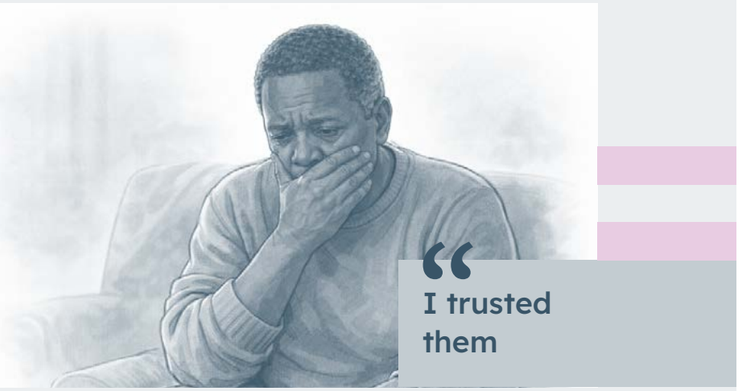
Ethan.

16. A-level student. Both parents work full time. Lives in Glasgow.

“A message came from what I thought was my mate asking me to vote for him in a competition. I clicked the link. Next thing my account was sending messages to everyone asking for money. People thought it was me. I felt sick. My mum was angry because money got taken from her card too. I’m online all the time – it’s just normal. But it feels like one click and everything blows up.”

Ezra.

72, housebound with anxiety, lives in Cardiff.



“I lost over £3,000 on a scam over 6 weeks because she said it was urgent and she needed help and I really felt sorry for her. She kept asking for more and more money and before I knew it I’d lost so much and then she said if I paid for her flight home I’d get my money back and I lost even more. I feel so ashamed and embarrassed that I fell for it. I haven’t told anyone.”

What people have in common

Although they have differences, these segments share recurring points of friction that repeatedly undermine successful digital engagement. If we can resolve these issues, we can address many of these different segments' needs at the same time.

High cognitive demands and unforgiving systems

People are asked to create accounts, juggle passwords, configure devices and understand data and privacy – often in different ways across services. These tasks demand attention and memory when users may be tired or distracted. Mistakes are common and when recovery is hard or punitive, people's confidence collapses.

Unreliable access and the cost of staying connected

Participation requires a suitable device, reliable connectivity and enough data. When any of these are missing, people get stuck early and abandon journeys. Low or unstable incomes increase the effort, stress and risk of staying connected – rationing data or relying on older devices are rational coping strategies that nevertheless raise friction.

Limited support and disrupted learning

Digital confidence is learned through repeated small successes and informal help. People usually look for support *when they get stuck*. When help is unavailable, rushed or untrustworthy, users disengage. Repeated negative experiences erode trust and confidence.

Early barriers and exclusion by design

Some people are blocked before they start: they can't meet identity checks, show proof of address, or access essential documentation. Without basics like identity or a bank account, participation in many digital services is effectively impossible.

These problems appear at two levels:

Provider-level problems: high cognitive load at first use, hidden or fragmented support, assumptions of ideal conditions (modern devices, uninterrupted attention) that exclude many people.

System-level problems: repeated proof-of-identity requests across services, inconsistent standards, and a lack of interoperability that pushes the burden onto individuals.

Designing for participation

To design services that meet the widest range of needs across the segments, we would need coherence at a system level backed by thoughtful service design. People's confidence could also be increased by the handing of the baton between trusted services and organisations, providing seamless support across a spectrum of their everyday needs. Design principles could include:

Ensuring that everyone can get connectivity

Broadband and mobile signals need to work where people live, work and travel, and need to be affordable for people on the lowest incomes.

1 Designing for realistic users
Assume that many people will have interrupted attention, older devices and limited data.

2 Ensuring that friends, family and carers can support people easily and safely
With digital and non-digital channels to help people who struggle permanently or temporarily.

3 Making recovery easy
Simple, visible routes to regain access and undo mistakes.

4 Providing support in the moment
Visible, trusted, human help when people need it most.

5 Treating assisted routes as mainstream
Plan, resource and measure offline and supported options.

6 Measuring true outcomes
Make sure people can complete end-to-end journeys, recover from mistakes and retain their confidence over time.

"Digital technology has transformed how people manage their money – from comparing insurance to finding better energy deals. But for the whole of society to benefit, digital services need to be designed for everyone. Getting that right isn't just a social goal but is essential for a competitive, fully inclusive and customer-focussed digital economy."

Peter Duffy, Chief Executive, MoneySuperMarket

A case for rethinking the UK's approach to broadband affordability

A consequence of the internet being vital to modern life is that when household budgets are squeezed, the broadband bill is an essential service that still needs to be paid for rather than a luxury to go without. This creates an affordability challenge which keeps many households offline, and puts pressure on the finances of those who already rely on it.

In general, the broadband market has lots of choice and prices are lower than in other developed nations (unlike our electricity prices). Despite this, millions of households face financial strain across their bills – in energy, food, housing and communications)[66,67,68,69]. That is a poverty challenge, not a connectivity specific one.

There have been welcome efforts from Ofcom, charities and many telecoms providers to support consumers. The main support available is through voluntary 'social tariffs' – which over 30 providers offer and give a discounted tariff to those on Universal Credit or equivalent benefits.

However, despite these efforts, we know that social tariffs cannot resolve the affordability challenge.

A review by Citizens Advice[70] found that unlike alternatives, they are held back by not suiting the automatic eligibility that exists for energy bill support, as well as inconsistent rules and packages. While half a million households benefit, 70% of those eligible are unaware they exist and less than 9% of those eligible take them up – and this figure is falling, not rising. Buying habits also complicate the picture for social tariffs, with some people finding better deals when buying services as part of a bundle or by shopping around. But low take-up is also having real consequences. Of the 1.5m households who don't have internet access at home, 53% are in less affluent social groups (band D & E), and 27% give cost as a reason[71] for not being connected.

For those online, new analysis of ONS Living Costs data[72] looks at households' actual purchase behaviour, as well as comparable measures such as 'fuel poverty' and 'food poverty'. The paper finds that costs above 3% of income, especially when using social tariffs, constitute a reasonable cut-off for identifying notable affordability challenges for a household. About 1.7 million households who are offline or only use a smartphone could get home broadband 'affordably' by this measure, with 700,000 of those not paying more than they do today if they get the best offers or qualify for a social tariff.

This new analysis also sheds a light on how a new approach to the affordability challenge could be targeted with precision to have an impact where it is most needed. Modelling the cost of moving offline or mobile-only households onto a basic broadband offer we can see that 400,000 households would have to spend over 3% of their income even on the lowest social tariff. It is this final group for whom broadband would be structurally unaffordable, and who most need a new approach.

If broadband is to be treated as an essential service, the logical response is to develop a targeted, explicit subsidy for them. 25% of this group already have other telecoms bills that are above 3% of their income – such as a landline or simple mobile phone – and may face limited additional costs. For others, the cost of targeted support would be dwarfed relative to the economic and social returns from full participation.

There are many ways that this support could be delivered in practice, with some approaches proposed recently by Citizens Advice and others.[73] Now is the time to develop a focussed solution to remove affordability as a barrier to participation.

Modernisation should not mean abandoning people to “legacy services”

Paul Farmer CBE, Chief Executive, Age UK

“Despite all its promise, for a significant minority, the relentless march of technology does not feel like progress. It brings confusion, stress and exclusion. Too often, older people who can’t easily move at the same pace as the rest of society are left relying on outdated systems, while mainstream services move on without them.

Digital transformation frequently assumes that those who can’t keep up will continue to use “legacy” options. Over time, however, these systems become neglected, under-resourced and increasingly unreliable. They can also end up costing people more. Modernisation must not mean abandonment.

Infrastructure that people still depend on should be actively maintained and designed to meet their needs for as long as it is required. And removing human support altogether does not encourage digital take-up; it simply pushes people further away.

Looking ahead, a model closer to “assisted digital” may offer the best solution. This involves businesses operating digitally while remaining ready to support people who need extra help. This will require sustained investment, particularly for the minority with significant difficulties, but it is far preferable to leaving people stranded on failing systems.

Above all, we must recognise that ageing itself brings challenges. Cognitive decline affects everyone to some degree, making constant technological change harder over time. This will affect all of us. There is a genuine opportunity to make a digital future work for everyone. But progress that leaves people stuck on obsolete systems is not progress at all. With proper planning, inclusive design and shared responsibility, we can modernise without leaving anyone behind.”

Chapter 4

The prize of participation

Chapter summary

As a nation, we haven't yet decided whether digital is truly 'for everyone' while digital services are becoming increasingly important. The reality is that if we can create a digital society that works better for everyone, everyone benefits – including the digitally confident. 'For everyone' doesn't mean that everyone has to be on email or use digital tools. It means ensuring that there are non-digital support channels and assisted services. The social and economic prize of participation is so significant that can't afford to see it as a moral extra. It is a prerequisite of a modern, productive and inclusive digital economy.

Is designing systems for total participation worth the effort?

Full participation is often treated as unrealistic; either unachievable or too expensive to justify. The difficulty is real. Designing systems that work for almost everyone requires coordination, investment and patience.

But partial participation has costs too, albeit less visible ones. When new services don't work for a proportion of people, organisations often maintain parallel channels, manual handling and ageing infrastructure for longer than they had planned. The effort shifts onto contact centres, frontline staff, carers and families, who are often unpaid.

This chapter explores whether broad participation is an optional extra, or a necessary precondition to digital systems delivering the value they promise. It also explores what we mean by "full participation". Does it mean that everyone needs to have digital skills themselves, or that some people can benefit from digital tools that offer support themselves, or enable other people to do so? To answer these questions, we examine what changes for individuals, organisations, public services and the wider economy when participation rises – and where costs appear when it does not.

The lived experience: what changes for people

When systems are predictable and consistent, people can simply complete tasks and move on. This brings immediate financial and practical benefits to consumers. People who can use digital services confidently are more likely to find cheaper goods and services, manage money effectively and access support earlier when problems arise. Estimates suggest the cost of not being online is around £400 per household each year,[74] while wider inclusion could return hundreds of millions annually to households through lower costs and inefficiencies avoided.

The impact on people's confidence is equally important. Many people initially express little interest in being online but become engaged once they see practical value – comparing prices, video-calling family or managing appointments independently. Small successes accumulate into confidence because familiarity reduces perceived risk.[75]

This is particularly marked for disabled users. Although disabled people are less likely to be internet users, those who are online report larger gains.[76] Many report reduced isolation and greater independence, especially when services are simple and reliable. In this way, accessible design promotes independence.

New interfaces take this further. Voice interaction, translation and AI-enabled dictation increasingly allow participation for people with literacy, language or cognitive barriers. Where systems previously depended on reading and navigating complex forms, they can now respond to speech and intent.[77] This can open up services to new users.

However, independence can't be the only benchmark for inclusion. Many people need help with digital services (and other services besides) when they are ill, bereaved, stressed or ageing. Today, getting someone to help with digital services often relies on insecure workarounds – password sharing, impersonation or informal delegation. Designing services to allow recognised supporters, adjustable permissions and audit trails reduces risk while preserving people's dignity.

"Making sure everyone can connect, participate in and benefit from our digital world is fundamental to an inclusive society. The principle of universal access has always been at the heart of television in the UK. We want to offer every viewer more choice and more control. Freely plays an important part in this by helping people who aren't connected discover a simpler, more flexible way to access high quality TV, without cost becoming a barrier. Through Freely, we can play our part in the cross-sector effort to achieve a more inclusive future."

Jonathan Thompson,
Chief Executive, Everyone TV

The hidden workforce: people who support others

Millions of interactions are carried out by people who are supporting someone else. Around 5 million unpaid carers support others in the UK,[78] and roughly 11 million people help someone else manage money or services,[79] often through very risky workaround such as sharing PINs or passwords. These relationships keep daily life functioning but remain largely invisible in service design.

Poorly designed services transfer effort onto this hidden workforce. Families spend hours navigating systems that do not recognise their role, frontline staff act as informal translators and voluntary organisations fill gaps between sectors. The cost doesn't always appear in providers' budgets (unless it translates into fraud and failure demand), but it is borne in people's time and brings stress and risk.

Better design changes this dynamic. Recognised delegation, graduated permissions and clear accountability would allow supporters to help safely without removing the individual's autonomy. This reduces fraud risk, lowers contact volumes and removes the need for improvisation. A system designed for supported use is also more resilient. It reflects how people actually live (interdependent rather than isolated) and therefore fails less often.

Why making services work for more people helps everyone

When services of any kind are designed to work for almost everyone, they appear quickly on organisational balance sheets as well as in everyday user experience. In contrast, running old and new systems side-by-side is expensive. Staff time is absorbed by multiple channels, duplicated processes and manual workarounds. The scope for mistakes increases and costs are pushed into customer service teams and back-office processing. Those costs ultimately lead to higher prices, longer waiting times and less capacity to invest in improvements.

Designing for broad participation reduces those costs through:

Simpler operating models

When organisations can assume a reliable baseline of access, they can standardise processes, automate recurring tasks and retire legacy workarounds. This reduces unit costs and failure demand.

Where interoperability is built in (for example, shared identity or common payment rails), the payoff multiplies because providers stop rebuilding the same foundations.

Better data and earlier intervention

A consistent digital relationship with customers supplies near-real-time signals about service quality and emerging problems. Instead of reacting to complaints, organisations can detect small failures early and fix them before they escalate. As basic flows become more dependable, organisations can introduce predictive maintenance, automated alerts and simpler complaint triage.

More productive human support

Human channels will always be necessary to accommodate complexity, vulnerability and the inevitable exceptions. However, they can be more effective when they are liberated from routine fixes. Assisted support then becomes about coaching, escalation and resolving genuinely complex cases. This improves staff morale and reduces turnover; it also turns costly contact time into an opportunity for inclusion rather than a symptom of failure.

International examples show that shared building blocks and inclusive design accelerate adoption, which enables providers to scale more confidently. Sweden's interoperable payments and identity systems, for instance, produced rapid uptake and a consistently simpler customer experience.[80]

There are immediate user benefits too. Even people who are already online gain when services are more consistent and forgiving with fewer logins, clearer interfaces and predictable recovery routes. When interfaces reduce cognitive load and support is easy to find, people can progress their digital activities from entertainment and shopping to higher-stakes tasks like banking and benefits. In this way, inclusion raises the floor for everyone and reduces the risk of failures that generate political and regulatory challenges.

Designing for inclusion can also reduce commercial friction between firms. A lack of consistent standards adds cost because every organisation needs to develop its own approaches and consider the risks of getting it wrong. With consistent standards in place, competition can shift to quality, innovation and price rather than to the ability to avoid the costs of serving harder-to-reach customers. This produces fairer markets and stronger incentives to invest in long-term improvements.

"Digital exclusion is the new frontline of social inequality – often penalising those who can least afford it. This data revolution must be a public good that addresses exclusion and levels the playing field for everyone."

Lord McNicol of West Kilbride

Community and place: participation beyond the individual

Communities function when people can see what is happening around them and take part easily. Increasingly, this takes place online. Shops, cafés, tradespeople and community enterprises rely on online listings, bookings and messaging to reach local customers. Community noticeboards, local marketplaces and social media groups keep spending circulating locally, and many people now search online first when they need advice or practical help, often finding support through organisations such as Citizens Advice, Age UK and local voluntary groups.

GP surgeries, libraries, housing providers, councils and charities also communicate and transact online. Without reliable access, people can lose awareness of what is available to them and can become disconnected from decisions affecting their neighbourhood.

Although more than 98% of the UK has access to 'superfast' broadband (speeds of over 30Mbps), rural communities still experience weaker connectivity than urban areas. Only 47% of rural premises in England have access to gigabit-capable broadband (speeds of over 1,000Mbps) compared with 84% in urban locations,[81] and households in remote areas are far more likely to rely solely on mobile data connections.[82] Even when they are connected, the experience can be very different; rural residents report lower satisfaction with reception and signal strength (77% compared with 81% in urban areas).[83]

Translated into everyday activities, at around 30 Mbps, a household can comfortably stream high-definition TV on one device, but it may slow down if several people are online at once. A 1 gigabit (1,000 Mbps) connection is fast enough for multiple people to watch ultra-high-definition TV at the same time, work from home with large file uploads, make video calls and run smart devices without noticeable buffering or delay.

This is important because increasingly, connectivity shapes economic opportunity. Remote and hybrid work expands employment options for rural residents, who already work from home slightly more than urban populations (34% versus 30%).[84] For local businesses, online sales, digital marketing and booking systems extend markets

far beyond geographic boundaries. In sectors such as agriculture, reliable connectivity also underpins data-driven production methods that improve efficiency and sustainability. This reflects the direction of the government's Industrial Strategy, which links regional growth to workforce capability and dependable digital infrastructure embedded in everyday business activities.

Increasingly, digital participation now determines whether local economies can remain viable, or whether they hollow out. Communities with reliable connectivity and participation are more likely to gain visibility, opportunity and resilience. Emerging evidence suggests that digital connectivity is now factored into property values, with studies estimating uplifts of between 1 and 3% where homes gain access to faster broadband, and estate agent data showing higher demand for properties marketed with fibre connectivity.[85] Many nations and regions of the UK have recognised the importance of connectivity but have taken different approaches to connectivity investment, skills support and local economic strategy. Areas where support and service design develop together are better able to convert digital access into productivity and participation. In this sense, digital transition is as much a local economic policy challenge as it is a national one.

Public services

Public services face a distinctive version of the challenge described in this report. Like universal industries they must serve everyone, but unlike most private services they can't choose their users or withdraw provision. They must work for the whole population, all the time.

Recent policy direction reflects this reality. The government has published a *Digital Inclusion Action Plan: First Steps*,[86] which emphasises that digital inclusion is crucial for reducing inequality in employment, health, and access to services. In March 2025 the Prime Minister placed digital transformation at the centre of public service reform, arguing that coordinated digital change could deliver efficiency savings of up to £45 billion – comparable with annual local authority spending on adult and children's social care.[87,88] The Chief Secretary to the Prime Minister's "Move Fast. Fix Things" speech[89] set out the same expectation from the citizen's perspective – suggesting that if banking and shopping can be made to work well online, public services should too. The proposed response was a common digital platform, with the GOV.UK app as the front door, followed by the creation of the CustomerFirst unit within the Government Digital Service. These ambitions will rely on people being connected and participating online.

Health and social care

Health and social care sit at the sharpest edge of the transition. Workforce constraints and financial pressure mean digital tools are one of the few credible ways to improve access and sustainability. The NHS 10-Year Plan acknowledges that parts of the service remain "distinctly analogue", while setting out a shift towards earlier, home-based and preventative care.

Whether this ambition succeeds depends on people being connected. Technology enabled care already illustrates the dependency. Millions of older or disabled people live alone and manage independently most of the time, but any deterioration can be gradual and go unnoticed. Sensors and monitoring systems can detect changes in movement, sleep or medication patterns, allowing earlier and more proportionate intervention. These approaches are now embedded in mainstream adult social-care practice and have been shown to reduce avoidable hospital admissions and support independent living.

Case study:

Liverpool City Region – building digital confidence through local delivery

The Liverpool City Region Combined Authority developed a place-based digital inclusion programme to support residents with low digital confidence, skills and access. The programme was delivered through a public-private partnership which included Liverpool City Region, the Metro Mayor's office, Lloyds Bank Academy, Vodafone, Assurant, the Financial Reporting Council and others. The scheme has helped more than 5,500 residents get online.

As Cllr Liam Robinson, the Cabinet Member for Innovation, says, "Technology and connectivity play an increasingly central role in our economy and our lives, which is why we're committed to making the Liverpool City Region the most digitally connected in the country. The increasingly dominant role of connectivity means those who cannot navigate the new digital world risk falling further and further behind, unable to access jobs and services, and even becoming isolated from family and friends. That's why I'm so proud of what we have achieved through this – helping thousands of people get online and building the capacity of community organisations to continue to support more people in the future."

Sharon's story – building confidence step by step

Sharon, 52, is a carer for her partner. Before joining the programme, she had very limited experience of using the internet. Everyday tasks like sending and receiving emails felt out of reach. She wanted to change this so she could better support her partner and look for part-time work, but she didn't know where to start.

Sharon was referred into the programme and received face-to-face training through the Lloyds Bank Academy. This focused on practical essentials:

- setting up and using a device
- connecting safely to the internet
- getting started with email and everyday apps
- understanding how to stay safe online

Sharon wasn't expected to already have the tools, confidence or knowledge to take part. She was given a device and data, and patient, in-person support that allowed her to learn at her own pace. With the right support in place, her confidence grew quickly. She began using the internet to search and apply for jobs, compare prices to manage household costs, and make video calls to family members living abroad.

Sharon now has a job and is looking forward to doing some more in-depth training to develop her skills. Her experience shows how small, practical interventions, delivered in the right way, can unlock wider opportunities for people.

Supporting informed choices during digital change

Ruth Bacigalupo,
Head of the Financial and Digital Inclusion Branch,
Welsh Government

"In Wales, digital inclusion is treated as both a social justice and economic issue. We want to ensure people have real choice in how they use services and stay connected, whether that's online or offline. The Welsh Government sets clear national direction, but delivery is led locally. Local organisations can identify problems earlier, fix broken journeys more quickly and reach people often missed by national programmes, including families facing multiple disadvantages and people experiencing poor mental health or housing insecurity.

One of our programmes worked through trusted local organisations to reach people facing digital barriers. More than 2,100 organisations took part, helping an estimated 182,000 people across Wales to build confidence and basic digital skills in familiar settings. This approach strengthens both local economies and community life. By supporting informed choice, rather than forcing a single digital route, Wales is helping more people participate in work, learning and services, while recognising that digital will never fully replace the need for offline options."

Their effectiveness depends on infrastructure outside the care system's control. Remote monitoring, shared records and mobile working all require reliable home connectivity. Even for people who never actively use the internet, connectivity underpins safety. It is becoming part of the basic infrastructure of modern care.

Education and skills

Education already operates as a digital service. Schools set work online, communicate with families digitally and rely on platforms for teaching and assessment. OECD analysis shows that lack of access and skills compound existing disadvantages among children. Guaranteed devices and connectivity allow pupils to complete assignments, use adaptive learning tools and collaborate with teachers and peers. Yet one in five children is affected by digital poverty: around two million lack a suitable device and over half a million lack both device and home internet.[90]

Inclusion particularly benefits pupils with special educational needs and disabilities. Assistive technologies – captioning, screen readers, dictation and structured digital materials – increase independence, engagement and attainment. Department for Education evidence reports improvements in independence (92%), confidence (89%), engagement (86%) and attainment (64%) when these tools are embedded in teaching.[91]

The implications extend beyond schooling. 22 million adults of working age – half the working population – can't complete **all** Essential Digital Skills tasks. This represents both a major skills deficit and the largest single opportunity to improve productivity. Access alone is insufficient; young people who use technology socially don't automatically acquire workplace skills such as collaboration, communication or cyber awareness. Targeted support is required to turn users into confident participants in the digital economy.

As careers become longer, continual retraining becomes normal. International experience shows that structured lifelong learning systems improve employment outcomes and workforce adaptability.

"In today's digital world, lacking digital skills is life and career limiting. Yet half people of working age can't complete all the essential tasks needed for work. The very basics. This is the UK's biggest upskilling opportunity and the route to unlocking productivity and social value at the same time."

Liz Williams MBE, Chief Executive, FutureDotNow and Chair of Good Things Foundation

"Many young people are active users of digital platforms but still lack the skills employers increasingly expect, such as online collaboration, professional communication and cyber awareness. Without targeted support, too many young people struggle to bridge this gap. If we want young people to thrive, we must stop making assumptions about their capabilities and start investing in inclusive support. That means ensuring access to connectivity and devices, embedding digital skills into learning and training, and giving young people the guidance they need to become confident, capable contributors to the digital workplace."

Sareena Bains, Chief Executive, Movement to Work

The economy: diffusion rather than invention

The economic case for reliable digital infrastructure is increasingly well quantified. Analysis for Openreach by Cebr estimates that nationwide Full-Fibre broadband could generate around £70 billion in additional UK productivity over time,[92] while research by Assembly for BT suggests that improved mobile infrastructure could unlock a further £230 billion in economic value.[93] As well as faster connections, these gains arise from the wider changes they enable; firms adopting digital tools, services reaching new markets and people participating more fully in work and other activities. Economic value is, however, not only measured in output. When people can participate confidently in digital systems, they are more able to engage in work, education and enterprise, but also in civic life.

Research from the Economics Observatory notes that under-investment in enabling infrastructure, weak coordination between sectors, and the absence of clear long-term direction create persistent difficulty turning innovation into widespread use.[94] As they note, many firms with strong potential "have not benefited from the diffusion of technology and innovation from the most productive companies". The government's Industrial Strategy also emphasises that productivity growth comes through technology adoption and diffusion.

Productivity growth therefore depends on diffusion – the spread of what already works into everyday business practice, public services and people's working lives. The UK performs strongly at the technological frontier but less well at adoption at scale. A digitally confident population is a precondition for those gains to be realised across the whole economy, but digital exclusion, fragmented systems and ageing infrastructure can act as practical barriers.

A digital economy cannot function efficiently if confidence and capability are distributed inconsistently. Where adoption stalls, organisations must maintain parallel systems, investment is diluted, and innovation scales more slowly. This leads to economic drag. A nation that does not carry the majority with it pays in foregone productivity and in the ongoing cost of maintaining workarounds.

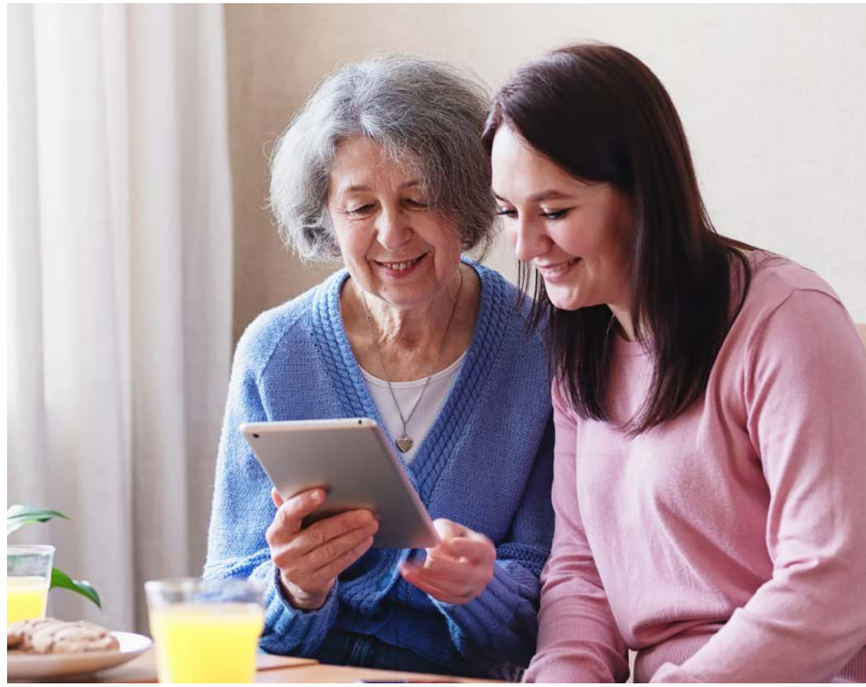
Research carried out by PwC for the BBC and Everyone TV helps quantify the effect.[95] The analysis is deliberately cautious, presenting lower-bound estimates rather than projections under ideal conditions. The study estimated that digital upskilling alone could be worth around £7 billion a year, even before accounting for the accelerating influence of artificial intelligence – and because the modelling assumes neither full coordination nor widespread take-up, the long-term effect could well be larger.

Participation also shapes employment. Reliable connectivity makes it easier for unemployed and economically inactive people to find work, particularly through remote and flexible roles. Evidence from the Superfast Broadband Programme links improved connectivity with higher employment and around £1.1 billion in annual productivity gains.[96]

The study concluded that widespread participation could unlock tens of billions of pounds in additional economic value through productivity gains, employment effects, public sector savings and improvements in wellbeing. Even these figures remain cautious, excluding wider spillovers and the compounding benefits that emerge when adoption becomes coordinated across sectors.

"Digital exclusion is often the result of lack of opportunities, support, training or inspiration, and rarely a lack of interest. When looking to address this, we need to really engage with the fact that people have wildly varied life experiences, and designing solutions for one size fits all will miss huge swathes of the population. Small Business Britain, through the Maple and Lilac Reviews, is looking at how to break down the barriers to access digital skills, ensuring they are available to all and to make sure that you have the same chance to start and grow a business in the UK regardless of your background and experience."

Michelle Ovens CBE, Founder and CEO, Small business Britain



Case study:

Feeding the nation without a signal

Nigel Wickham, Farmer, Kent

"My family has farmed for generations. The fundamentals haven't changed – you still work with weather, soil and livestock – but the tools have. The modern British farm is closer to an engineering business than a pastoral postcard. Tractors steer themselves using satellites orbiting 17,000 miles above us. Cows wear electronic tags that flag health issues before a human eye would spot them. There are soil sensors in the ground, software in the shed, and data flowing from almost every machine we use. And yet, fifty yards from the farmhouse, the signal can disappear completely.

The NFU's Digital Access Survey in 2024 found only 22% of respondents had reliable mobile signal across their whole farm, around one in ten reported no 4G/5G access, and 21% were on broadband speeds under 10Mbps.

We have invested heavily in precision technology, which reduces input costs. It allows fertiliser and crop protection to be applied exactly where it's needed. It cuts waste, improves yields and helps manage environmental impact. But precision farming requires consistent, reliable connectivity – not just in the kitchen next to the router, but across fields, yards and livestock buildings. When connectivity drops, we can't take advantage of our precision technology to reduce costs, reduce chemical input and maximise yields. Livestock can't be checked using a webcam from the farmhouse during lambing or calving. B&B guests expect good Wi-Fi, which isn't always available. None of this is dramatic in isolation, but it adds up, and family farms that already operate on tight margins.

If we expect UK agriculture to be productive, resilient and environmentally responsible, the digital foundations must reach beyond the garden gate. The technology exists and the appetite to use it exists. What is missing, in too many places, is the connection that allows it to function properly."

Society: trust, dignity and cohesion

Much of the value created by digital participation does not appear neatly in traditional economic measures. A significant share is experienced directly in daily life. The BBC / Everyone TV / PwC analysis estimates that full digital inclusion could generate wellbeing benefits worth up to £30 billion annually, largely through improved life satisfaction, reduced isolation and easier access to essential services.[97]

People feel connected and able to participate when systems work well for them. When they do not, they can feel embarrassed, anxious and eventually mistrustful. Over time these everyday interactions can shape how people feel not only about institutions, but also about each other. Digital technology is often discussed as a force that fragments society. Social media environments can amplify division and misinformation, and poorly designed systems can weaken trust. But there is also evidence that well-designed, inclusive digital environments can strengthen social cohesion in. Studies of digital public services consistently find better experiences are associated with higher institutional trust.[98]

Participation also affects dignity. When people can rely on access and get support when they need it, more can manage everyday tasks independently rather than relying on intermediaries or insecure workarounds. Research on wellbeing repeatedly links accessible services with higher confidence, participation and life satisfaction.[99]

The effects extend further into social connection. Digital systems cannot replace relationships, but they can help sustain them by making it easier to stay in touch and seek help early. Work on social capital highlights how belonging, trust and connection shape long-term outcomes.[100] Inclusive design supports this indirectly through many small, dependable interactions that keep people engaged in everyday life.

A recent study led by the Royal Society of Arts, the Behavioural Insights Team, Meta and others analysed anonymised data from 20 million people and linked it to long-term earnings records. Its central finding is that the breadth of our networks strongly correlates with economic mobility.[101] Children from low-income households living in highly connected areas – where friendships with children from higher-income backgrounds are more frequent – earned 20% (almost £3k) more per year by age 28 than those in the least connected areas. Economic connectedness proved a stronger predictor of upward mobility than exam attainment. Designed correctly, universal participation can encourage mixing across lines of difference and help reduce isolation, improve mobility and strengthen social fabric.

> "Although the evidence base is still emerging, digital connection has clear potential to build social capital by expanding access to wider, more diverse networks that shape opportunity. Evidence shows that these 'bridging' connections – beyond immediate circles – are strongly linked to economic mobility and life chances. For many, especially young people, digital access can open pathways to mentors, information and opportunities that would otherwise remain out of reach. These benefits will remain unrealised for millions that are digitally excluded."
>
> **Tom Stratton, Chief Impact Officer, RSA**

Partial participation is holding us back

This chapter has shown that digital systems are constrained by partial participation. Organisations must retain legacy systems and parallel processes because they can't rely on the main channel to serve their customers or users. Staff spend time correcting avoidable failures instead of addressing complex needs. Families and carers have to compensate for gaps in design. Public services can't reach everyone, and the benefits of innovation can't diffuse across the system.

As participation rises, digital systems can change too. Processes can be standardised and shared infrastructure becomes reliable enough to support coordination across sectors. At this point, the full benefits of digital delivery really become apparent.

The question is therefore not whether inclusion is socially desirable, but whether digital systems can mature without it.

Digital inclusion is often treated as a programme that accompanies transformation. However, our analysis suggests that digital participation determines whether transformation becomes self-sustaining. Seen in this light, digital participation is not a social add-on, but part of the infrastructure that makes growth and reform possible.

Why haven't we won the debate on digital inclusion?

Dr Emma Stone, Director of Evidence and Engagement, Good Things Foundation

"Eight million people in the UK still lack the most basic digital skills. Two million households struggle to afford a reliable connection. These figures represent families unable to book GP appointments, parents anxious about what their children encounter online, older people more vulnerable to scams, and workers missing out on jobs or training. Yet digital inclusion remains on the sidelines. It is rarely treated as foundational to modern life, even though digital technology now runs through almost everything we do. So why hasn't this debate been won?

Missing: a clear, shared understanding of what people need

Nationally, we still lack a shared definition of the basics every household needs to navigate daily life. Without that clarity, government, businesses and public services operate to different assumptions, and people fall through the gaps. The Minimum Digital Living Standard[102] offers a straightforward benchmark, shaped by the public, for what "good enough" looks like. It is not bureaucracy. It is common sense: the essential digital foundations every household needs to live with dignity, participate fully and stay safe.

Missing: the right data to see what's really happening

Digital exclusion is often invisible. You may not know someone is struggling until they miss an appointment, make a mistake on a form, or fail to understand a bill. Many organisations simply cannot see how digital barriers affect their own customers or communities. Three simple questions – the "indicators of digital inclusion" – can change that. They are practical and ready to use across sectors. Applied consistently, they would help services identify who is being held back and why, enabling support that works in real life rather than in theory.

Missing: digital inclusion baked into services from the start

Too often, people are left to fend for themselves, relying on family, friends, volunteers and overstretched community centres. That should not be the hallmark of a modern digital economy. This challenge must be everybody's responsibility. Those focused on poverty, health or housing do not always recognise digital barriers. Those working in digital or AI do not always see the human consequences. And those local organisations dedicated to digital inclusion are often constrained by short-term funding.

If this is to change, digital inclusion must be baked in, not bolted on – embedded in the design and delivery of services from the outset. When financial, health and public services are built with inclusion in mind, everyone benefits."

More than a moral case

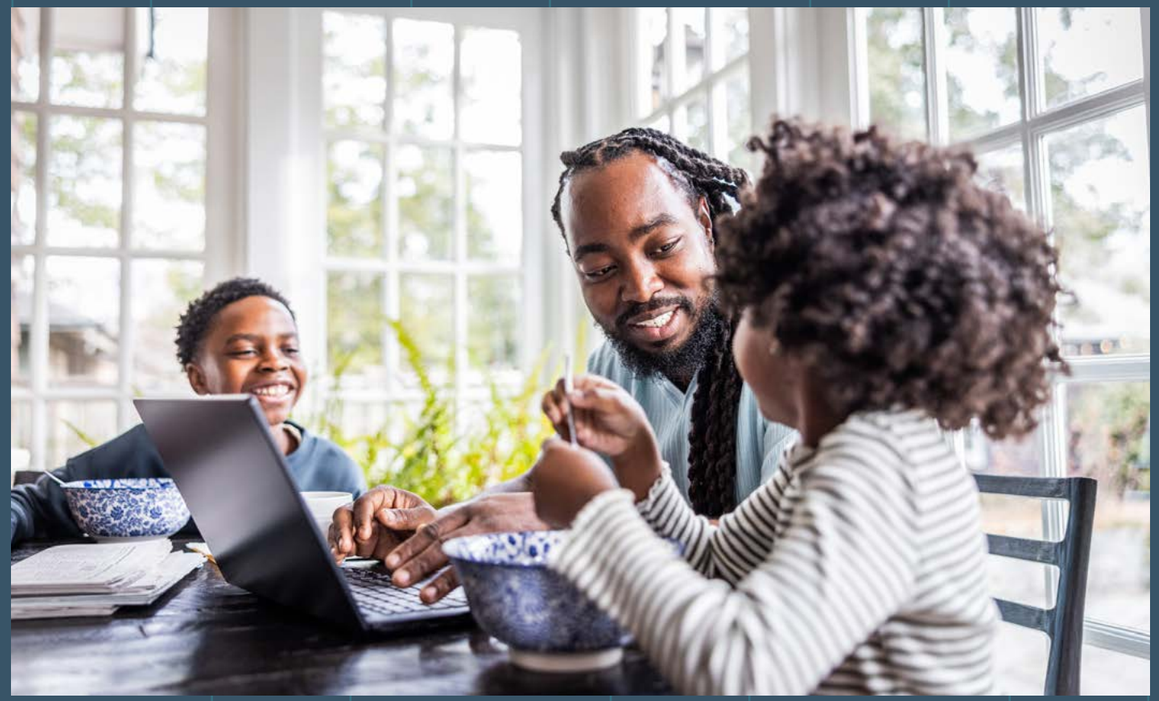
"The moral case for digital inclusion is compelling. But it is also a matter of national interest. As cyber threats, scams and misinformation rise, helping people stay safe online strengthens collective security. This is national resilience. A decent digital foundation is now essential to earn a living, manage money and support a family. It is part of a modern standard of living. When people can use digital confidently, pressure on services falls and trust improves. Businesses depend on staff and customers who are comfortable online.

We can win this debate – and some places already are. In Leeds, 100% Digital Leeds has built long-term, joined-up action. In Wales, the Minimum Digital Living Standard is guiding policy. Through the National Databank, mobile networks are providing vital connectivity. And across the National Digital Inclusion Network, thousands of community groups, libraries, banking hubs and local charities offer practical support. These examples show that change is possible.

We will have won when digital inclusion is no longer seen as a “nice to have” or a corporate social responsibility project. When government, industry and civil society share responsibility and work to a common vision. When digital inclusion is truly baked in – so that everyone can participate, and everyone can benefit."

Chapter 5

What kind of future do we want?



Chapter summary

Over the past 20 years the UK has been making choices, sometimes deliberately but often implicitly, about how digital systems are designed, sequenced and governed. The difference between a coherent transition and unmanaged drift lies in the choices we make now in terms of policy, regulation, coordination and design. Looking internationally, there are some very different models of a digital society, each of which has strengths and weaknesses. We now need to make an active choice as a nation as to what kind of digital future we want.

Choosing a digital future

The UK is already navigating choices, sometimes deliberate but often implicit, about how systems are designed, sequenced and governed. The difference between a coherent transition and unmanaged drift lies in the choices we make now in terms of policy, regulation, coordination and design. These choices could plausibly produce very different outcomes over the next decade.

We have been asked whether it is reasonable or even sensible to ask how we can make meaningful choices about the shape of a digital society when technology itself is evolving so quickly. But technological certainty will never arrive, and waiting for it would exacerbate existing fragmentation. During times of rapid innovation, having a clear direction becomes ever more important. The foundations we set now in terms of access, affordability, design standards, support and accountability will determine whether future innovations amplify people's confidence or compound their exclusion.

We have identified four models that show how a nation can approach digital transition. Rather than being suggested blueprints or predictions for the future, they are illustrative models drawn from our international research. These can help to clarify trade-offs, surface implications and inform a more focused national conversation. They can also help us think more clearly about the destination we are aiming for.

Model 1:
the fragmented digital nation

Digitisation by drift

Allowing digital transition to be market-led and organic can feel as though it promotes individual choice. It is flexible and non-interventionist, and many people find that many services work well, most of the time. But this comes at a cost. Some services feel intuitive and efficient, but others feel clunky or unreliable. People have to navigate new systems, remember multiple logins and jump between online and offline steps to complete a task. The effort and burden is absorbed by end users rather than by the services themselves.

Offline options still exist but they deteriorate slowly and become harder to find. What feels like convenience for most people becomes a barrier for others. Over time, everyday life shifts behind digital doors and people who struggle to access them rely on a shrinking set of imperfect alternatives. For partial digital participants, the cost of living rises, and it becomes harder for people who help others to keep systems working at all.

Fragmentation creates a growing dilemma in universal services like banking, telecoms and healthcare. Organisations invest in modern digital systems but have to maintain legacy routes for a diminishing group of users. This absorbs time and money, locks in duplication, and can inhibit innovation and drive higher costs.

Each new wave of technology exacerbates the problem. The underlying foundations are never fixed, so adoption curves become steeper and faster. Productivity suffers as people and organisations spend time navigating systems rather than achieving their goals. Over time, these everyday frictions accumulate into system-wide costs for industry, the wider economy and ultimately for the public. Over time, fragmented nations risk falling behind because they must continue rebuilding the basics. This drags them backwards regardless of how well they innovate.

Benefits

- Low upfront public coordination costs
- A high degree of autonomy for individual organisations and sectors
- Scope for local experimentation and innovation

Trade-offs

- High long-term costs from running parallel digital and analogue systems
- Distorted competition as new entrants can design services to be digital-only, targeting digitally confident customers. Incumbent providers must maintain analogue channels and absorb the costs of universal access
- Inconsistent experiences that drive frustration and failure demand
- Structural digital inequality as services move online

United States

In the United States, highly decentralised decision-making shapes people's everyday digital experiences. Citizens encounter different systems, rules and access routes depending on where they live or which agency they deal with. Services rarely connect, information is asked for repeatedly and help routes vary widely. For many people, especially those managing health, benefits or employment across state lines, this inconsistency creates frustration and delay – even when services are technically available online.

In summary

Fragmentation feels flexible, but digitising without thoughtful planning actually erodes choice. Cost and effort are shifted onto citizens and frontline services. Without shared foundations, digital change creates confusion, failure demand and inconsistent outcomes, even when intentions are good. Over time, fragmentation increases cost and inequality and makes later change harder, slower and more expensive because each reform must first connect systems that were never designed to work together. At the moment, this model is the path that the UK is closest to, and where we are heading if we make no changes.

Model 2:
the state-controlled digital nation

Digitisation by mandate

In a state-controlled digital nation, digital change is led decisively from the centre. All major systems are designed by the state and rolled out rapidly. People are expected to adopt standard services, standards are enforced and mass participation is built into how services operate. For most citizens, everyday interactions feel fast and consistent – almost frictionless. Services work in the same way wherever you live. Onboarding is straightforward and once people are enrolled, they rarely need to re-enter information or work out which route to use. Healthcare, transport, benefits and utilities connect seamlessly. Offline options diminish rapidly but in a planned and coordinated way. Transitions are managed centrally rather than being left to individual organisations or citizens to navigate.

For many people, this feels efficient. Systems work for them and they have few choices to make. But when their circumstances fall outside the norm, or if they want to opt out, question a decision, or take a different route, they have limited options and limited control over what happens. The same consistency that delivers speed can also constrain choice and flexibility.

Trust in this model is largely brought about by consistency and ubiquity. Citizens are expected or required to participate, and consent is implicit in system use rather than actively managed. This can work in societies where trust in institutions is high and/or individual choice is secondary to efficiency and stability. It travels less well into cultures where trust in authority is weaker, and expectations of personal autonomy are strong and reflected in both culture and law.

Civil society and community organisations typically play a limited role. They may support specific groups or edge cases, but they do not shape system design or governance. Lived experience is generally addressed once issues arise, rather than informing how systems are built or how risks are mitigated.

Benefits

- High levels of interoperability by design
- Rapid national delivery at scale
- Consistent citizen experience across services
- Clear accountability for system performance

Trade-offs

- Limited citizen choice and control
- Significant privacy and civil-liberty limitations and concerns
- Innovation constrained to state-defined priorities
- High dependency on central systems, with limited resilience when they fail or are compromised
- Works best where there is a high degree of compliance and broad acceptance that efficiency and scale should take precedence over individual control.

China

China has pursued one of the most extensive state-led digitisation programmes in the world. National digital identity, payments, health, travel and service platforms are tightly integrated, which promotes fast, consistent access in everyday life. However, routine activities are widely traceable, linkable across systems and visible to the state. Data flows between government and approved platforms with limited transparency. Individuals have limited ability to opt out, remain anonymous or challenge automated decisions when problems arise or data is incorrect.

India

India has built one of the largest public digital infrastructures in the world, anchored in a biometric identity system. This has enabled the rapid expansion of digital payments, bank accounts and access to welfare, simplifying service delivery for millions of people. At the same time, reliance on a single, nationally mandated identity system creates rigidity. Biometric authentication failures caused by worn fingerprints, connectivity issues or data mismatches have left some people unable to access essential benefits at critical moments. While the intention is to be inclusive, limited local discretion and weak fallback routes mean that people who don't fit standard patterns can find themselves excluded, with little remedy.

In summary

A centralised digital nation can deliver speed, consistency and scale. Shared digital foundations enable efficiency and interoperability that fragmented systems struggle to achieve. However, these outcomes come at the cost of choice, flexibility and individual control. Trust is assumed, and innovation is shaped by state priorities rather than citizen needs. While effective in some national contexts, this model would sit uneasily with the UK's cultural values, competitive markets and expectations of consent and accountability.

Model 3:
the co-ordinated digital nation

Shared foundations, distributed delivery

In a co-ordinated digital nation, services feel joined up. As a citizen, you encounter broadly similar (though not identical) systems each time you interact with an essential service. Common components, such as proving who you are, making payments and accessing support work in noticeably consistent ways across sectors. They are familiar enough to feel predictable, but flexible enough to adapt.

Digital services aren't identical, but they are compatible. You don't need to relearn the basics each time. Information is shared between services securely rather than being asked for repeatedly. This makes individual services quick and easy to use. When things go wrong, it is clear who is responsible for what and how to get help, and redress is visible rather than opaque.

Offline and assisted routes still exist, but they are designed and maintained with intention rather than left to decay. Legacy services are openly switched off to clear timetables and support is available during the transition. People who need support are signposted early, and alternatives are made visible rather than hidden. For many citizens, digital services feel reliable and change feels manageable rather than imposed.

Choice still exists. Organisations design their own services and compete on quality, innovation and responsiveness. The experience feels coherent not because everything is controlled from the centre, but because the foundations are shared and the rules are clear.

This model demands more of institutions. It requires collaboration across organisational boundaries, long-term commitment beyond political cycles and investment in governance as well as technology. Benefits accrue over time rather than immediately, and success depends on discipline in maintaining shared foundations as services evolve even when incentives pull towards fragmentation.

Benefits

- Lower long-term costs through reduced duplication
- More consistent experiences without loss of choice
- Greater resilience as systems can evolve independently
- Stronger incentives for innovation and service quality

Trade-offs

- Higher upfront effort to agree standards and governance
- Slower initial progress than fully centralised models
- Ongoing coordination required across sectors
- Dependence on trust, capability and sustained leadership

Canada

Canada has pursued coordination through shared standards and collaboration rather than central control. Federal, provincial and territorial governments work together on common approaches to digital identity, trust frameworks and service interoperability, but they retain autonomy over delivery. This has reduced duplication and improved consistency in some areas, particularly behind the scenes. Standards set by industry have, in some areas, moved more quickly than formal legislative routes could have achieved. For citizens, experiences still vary by service and location, but there is growing emphasis on making systems connect more effectively. Canada demonstrates how coordination can be built incrementally within a decentralised system without abandoning local autonomy.

Sweden

Sweden combines widespread digital identity and payments with a clear expectation that services work together. Citizens benefit from fast, integrated services across banking, government and healthcare, and they still choose their provider. Support is easily accessible for people who need help. High levels of trust and strong governance underpin the model and allow shared infrastructure without centralised control.

In summary

A co-ordinated digital nation balances efficiency with choice. By agreeing and maintaining shared foundations, it avoids the fragmentation that drives cost and confusion, but it never resorts to central control. The model requires sustained leadership, cross-sector cooperation and upfront investment in governance. But where it is done well, it delivers digital services that are resilient, inclusive and trusted – and a pace of change that people can keep up with in a way that aligns with diverse institutions and competitive markets.

Model 4:
The universal digital nation

Designed for everyone, by default

In a universal digital nation, digital services are designed on the assumption that it is normal for people to have different circumstances, capabilities, levels of confidence and preferences. As a citizen, customer or patient, you experience digital services that work well when you can use them, and clear, dignified alternatives when you can't – without having to struggle first to justify asking for help.

Change still happens, but it feels predictable and manageable. New systems come with clear explanations and support, and people are given time to adapt. Digital routes are the fastest and most convenient for most people, but offline and assisted options are accessible, reliable and treated as core services rather than an afterthought. People don't have to fail digitally to qualify for help, which feels fair and respectful. Choice is meaningful. People can use digital services independently, with assistance, or through trusted intermediaries without penalty or stigma, and without a worse or slower experience.

People feel neutral or confident rather than anxious about change. Support is easy to find, responsibilities are clear and nobody is expected to navigate complex transitions alone. People's trust increases not because systems are perfect, but because they are designed to cope with real life and absorb complexity rather than pushing it onto people.

A universal digital nation builds on shared foundations but goes further by treating inclusion as a true design principle rather than a downstream fix. Government, regulators, industry and civil society share responsibility for actively managing transition, ensuring services remain accessible throughout periods of change. Legacy services are supported until people are ready to move on, rather than gradually degrading as usage declines and they receive less investment. Decisions about timing, communication and support are coordinated across sectors, recognising the cumulative impact on citizens rather than viewing each change in isolation.

Benefits

- High levels of trust and public confidence
- Sustainable cost reduction over time
- Greater resilience during periods of rapid change
- Broad participation in digital services and innovation

Trade-offs

- Significant upfront investment in support and coordination
- Slower withdrawal of legacy services
- Ongoing commitment across political cycles
- Complex governance spanning multiple sectors
- More demanding institutional discipline than the market-led or centralised models

New Zealand

New Zealand has taken a deliberate approach to digital government that places accessibility and inclusion at the centre of service design. National strategies emphasise clear language, assisted digital support and designing services around lives rather than organisational boundaries. Digital channels are strongly encouraged but alternatives remain visible, and support organisations are treated as delivery partners rather than safety nets. While challenges remain and implementation is uneven, New Zealand illustrates how inclusion can be treated as a core design principle to create a digitally advanced public service within a relatively small and cohesive administrative system.

Estonia

Estonia is widely recognised for its advanced digital public services, built on secure digital identity, interoperable data exchange and the “once only” principle. For many citizens, interactions with government are fast, transparent and largely paperless. However, Estonia’s experience also shows that high-performing digital services don’t automatically resolve every inclusion challenge. The country has found it essential to pay continued attention to trust, accessibility, support, and affordability, particularly for people with lower confidence or complex needs – and it has been able to build on a comparatively small population and an almost total institutional reset.

In summary

This model is the most demanding. A universal digital nation treats inclusion and trust as foundational. By designing services for difference and managing transitions deliberately, it avoids the hidden costs of fragmentation and the loss of choice associated with central control. This approach is slower and more complex to deliver, but it creates digital systems that people can rely on and a pace of change that society can sustain. This is all far easier to achieve in a smaller nation than a larger one, and when you have a relatively ‘green field’ site. It requires scale, political continuity and institutional cohesion that are easier to achieve in smaller or newly structured states than in large, diverse and market-driven economies.

Which direction do we want to go in?

No country fully inhabits one of these models. In practice, nations move between them over time. But they represent fundamentally different starting points for how digital change is approached at a national level. Each model features broadly the same technology – devices, networks and software. What differs is where responsibility sits, how standards are set and whether people adapt to systems or systems are designed to accommodate people. This in turn shapes productivity, public confidence and the sustainability of reform.

Each country grappling with these challenges must decide what works best within its own governmental, economic, social and cultural structures. The model itself matters less than getting the fundamentals in place and making sure they are sustainable. Coordination features in most of the models, but coordination does not necessarily mean central control. In some countries it has emerged through standards bodies led by industry; in others through joint public-private frameworks; and in others through regulatory alignment. In some contexts, consistency and alignment has been achieved through voluntary compacts, sector accords or clear regulatory expectations.

Our research suggests that as things stand in the UK, we will drift into becoming a fragmented digital nation if we do not start making conscious choices. Despite the strong progress organisations are making independently, it is getting more challenging, and now is the time to join up these efforts collectively with the citizen at the centre. We have reached a genuine fork in the road.

When it comes to choosing a direction, the UK's regulatory landscape is a key consideration. The FCA and Ofcom already hold cross-sector oversight responsibilities that touch the foundations described here: consumer protection, resilience, competition and infrastructure standards. As digital systems converge, their role in maintaining coherence, setting expectations and protecting consumer outcomes becomes increasingly important – even where delivery continues to be led by industry.

The next decade will be decisive. Decisions to retire infrastructure, regulatory reforms and the investment cycles already underway will shape the UK's digital foundations well into the 2030s. This report highlights many of the challenges we are already seeing today. If we carry on with our approach, we can expect the same outcomes, exacerbated by the pace and scale of continued digital change.

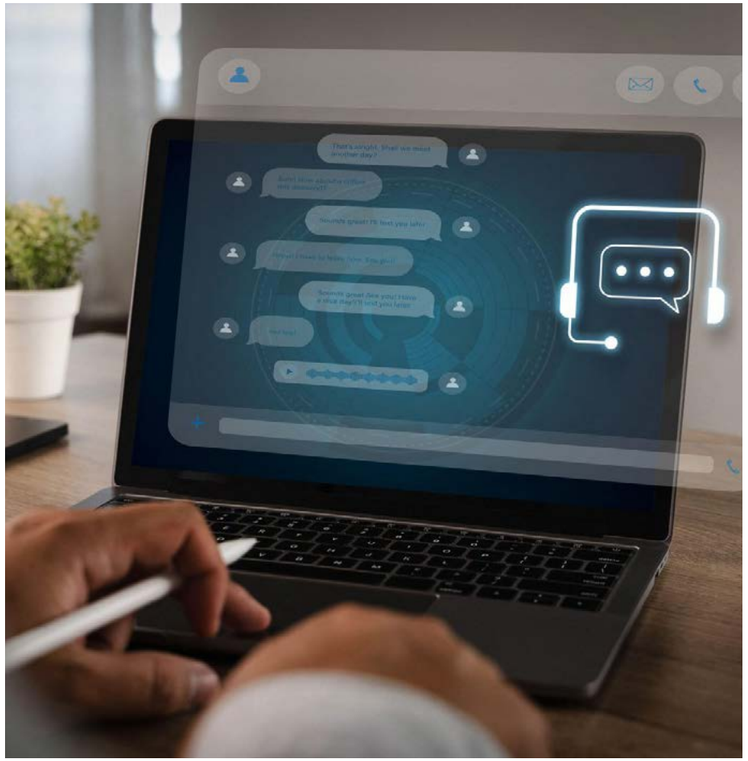
What will AI change?

As well as making existing digital services faster, artificial intelligence is likely to reshape how services are designed, delivered and experienced. AI systems can automate routine decisions, personalise information at scale, detect fraud patterns earlier, translate between languages instantly and support people through voice or conversational interfaces. In theory, this could reduce administrative burden, lower costs and make services more responsive to individual needs.

But AI will also change the nature of risk. Decisions that once relied on human judgement may be automated, mistakes can escalate and scale quickly, and bias embedded in data can produce questionable outcomes. The boundary between authentic and synthetic content will also become harder to see, increasing both opportunity and exposure to harm.

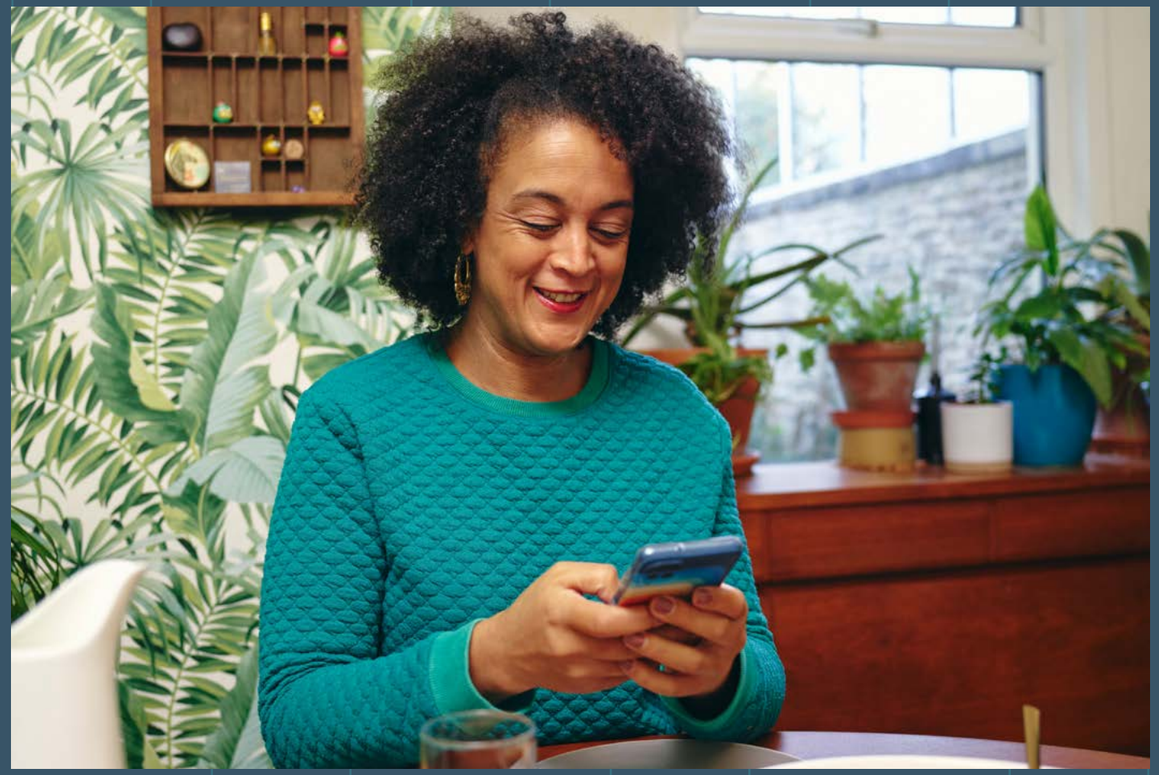
Most importantly, AI will raise expectations. If systems appear intelligent, people will expect them to work seamlessly and fairly. But if they don't, people will quickly lose confidence in them.

AI has already arrived. The question now is whether the surrounding conditions ensure that its benefits are shared consistently, its risks actively managed, and that it is deployed in a way that promotes public confidence. The societies that gain the most from AI will be those that treat capability, safety and inclusion as integral to innovation, not as an afterthought.



Chapter 6

Managing transition in practice



Chapter summary

Major transitions to everyday services can be delivered successfully when they are carefully managed. Evidence from previous UK programmes shows that success depends on putting people first, ensuring alternatives work well before withdrawing legacy systems, and coordinating change across sectors.

It is easy to talk about digital change in terms of platforms, infrastructure and innovation. It is much harder to help millions of people adapt and change the way they have been doing things for years.

Of course transitions of this kind involve technology, but they also require large-scale behavioural shifts in the way people use everyday services. If they are handled well, they can modernise infrastructure, reduce operating costs and strengthen public confidence at the same time.

Essential services must work for the whole population, including people who are distracted, vulnerable, sceptical or simply busy. The organisations responsible for these services can't choose their users and they can't fail. They can't assume ideal conditions like perfect connectivity, perfect understanding or uninterrupted attention. When change affects payments, communications, transport or broadcasting, the margin for error is small because the consequences are significant and immediate.

The UK has faced moments like this before and managed them well. Digital television switchover, the move to Chip and PIN, the transition to contactless payments on buses, and the ongoing migration from copper to digital voice all required millions of people to adapt. These succeeded partly because the technology worked, but they also succeeded (or are in the process of succeeding) because sequencing, communication, governance and inclusion were treated as central design principles rather than peripheral considerations. Alternatives were introduced before withdrawal, support was visible, deadlines were clear, timelines were adjusted when risks emerged, and frontline staff were empowered to exercise judgement so that small problems didn't escalate.

These examples demonstrate that large-scale change can be delivered safely and efficiently. They also show that success requires explicit coordination, shared accountability and an understanding of how people actually live their lives and use these services. These lessons are highly relevant as the UK navigates the next phase of digital transformation.

Case Study:

Digital TV switchover (2008–2012)

Moving 26 million households from analogue to digital television

Between 2008 and 2012, the UK permanently switched off analogue television. Around 26 million households needed to upgrade.[103] At the outset, expectations were low. Media coverage predicted disruption and backlash. Some experts suggested that between 10 and 15% would never convert. There were real concerns that older viewers and disabled people would lose access entirely. None of this materialised – but it only succeeded because the programme treated inclusion as critical to successful delivery.

The programme was delivered on time, under budget and with minimal disruption. Coverage increased to 98.5% of homes.[104] Viewers gained more channels, better picture quality, subtitles and recording functionality. Valuable spectrum was released and later auctioned for mobile broadband, raising £2.34bn for the Treasury.[105]

Why did it work?

Digital switchover was framed as a national upgrade, not a technical inconvenience. Messaging was clear, consistent and repeated region by region. A visible "digital tick" kitemark and the Digit Al mascot gave coherence to communications across broadcasters, retailers and installers.

Delivery was coordinated. Digital UK brought together government, broadcasters, transmission providers, retailers and charities. The technical programme rebuilt parts of the broadcast network while phasing switch-off geographically, with a year of targeted communication before each region transitioned so that households had time to act before the signal disappeared.

Inclusion was designed in from the start. The BBC Help Scheme proactively contacted eligible households and provided equipment, installation, aerial replacement and a year of aftercare. Around 1.3 million households received direct assistance, with satisfaction above 95%[106,107].

This example shows that even a universal service can be transformed successfully when change is coordinated, clearly communicated and inclusion is treated as a condition of progress – rather than an afterthought.

"Telling consumers upfront about the benefit of the change was a key part of what we did. A consistent message, with consistent branding across manufacturers, broadcasters and service providers, was crucial. But working closely with community organisations was the real gamechanger. Ensuring trusted local people were equipped to provide support made all the difference."

Alex Pumfrey, Digital Switchover Programme Director, Digital UK

Case study:

TfL: removing cash payments on buses (2014)

Policy changes reflected behavioural ones

When Transport for London stopped accepting cash on buses in July 2014, it was not a sudden withdrawal. It formalised a reality that had already emerged and which made the bus service work better for almost everyone.

Cash use on buses had fallen steadily over a decade. Oyster cards, introduced in 2003, offered lower fares and daily caps, gradually becoming the default.[108] By 2006, cash was under 8% of bus journeys. The introduction of contactless bank cards in 2012 was decisive: passengers could now pay with something they already carried. By 2014, cash represented just 0.6% of journeys.[109] The removal of cash therefore followed behavioural change rather than forcing it.

There were clear operational benefits. Cash handling slows boarding, increases dwell time and adds cost and security risk. Removing it improved reliability and reduced operating costs. But for passengers, the change also made everyday travel simpler and more predictable. Boarding became faster and less stressful, particularly at busy stops. People no longer needed exact change or to queue to buy tickets in advance. With Oyster and contactless, daily fare caps ensured passengers paid the lowest available fare automatically, removing uncertainty about cost. For occasional users and visitors, being able to tap a bank card removed the need to understand a separate ticketing system. What might have appeared as a back-office efficiency reform was experienced on the street as a smoother, quicker and more consistent journey. But TfL was clear; no withdrawal until alternatives were widely used and trusted.

Research identified three remaining cash-using groups: occasional users, people who had forgotten their cards, and a smaller group unable or unwilling to pay digitally.[110] Mitigations were practical and human. Bus drivers could issue “vulnerability notices” allowing travel now and payment later. Concessionary travel remained protected, and Oyster could still be obtained and topped up with cash.[111] This all led to faster journeys, simpler operations and sustained public confidence.[112]

Why did it work?

The key lesson was sequencing: introduce better options first, allow habits to change, and only then remove the legacy route – with frontline discretion preserved.

Case study:

PSTN switchover – copper to digital voice (underway – ends 2027)

From technical migration to managed transition

The retirement of the UK's copper-based Public Switched Telephone Network is one of the largest infrastructure changes currently underway. Initially framed as a technical upgrade – moving voice services onto broadband – it quickly became clear that the reality was more complex.

As well as being communications devices, landlines supported telecare alarms, pendant systems and emergency services. Crucially, analogue lines carried power, continuing to function during outages. Early pilots exposed these hidden dependencies. The programme therefore evolved.

What began as network retirement shifted towards a managed transition of an essential service. Governance broadened beyond telecoms providers to include regulators, government departments, local authorities and the care sector.[113] Migrations were paused where risks were identified. Telecare action plans were developed.[114] Backup power, in-home testing and compatibility checks became part of the offer.[115]

Responsibility became clearer: infrastructure operators, retail providers, regulators and health and social care bodies each had defined roles. Ofcom reinforced the principle that customer safety must take precedence over timetable.[116]

The programme is still underway, but its evolution offers an important lesson: technical readiness is not enough. Inclusion and safety must be treated as preconditions. Slowing down when risks surface is a sign of responsible governance, not failure. Transitions of essential infrastructure demand flexibility, cross-sector coordination and a willingness to adjust course in real time.

"We learned early on that getting the technology right wasn't enough. We evolved our approach to focus on understanding and engaging our customers, supporting them through the change and to realise the benefits of the service."

Lucy Baker,
Consumer All-IP Director, BT

Case study:

Chip and PIN (2003 onwards)

Changing everyday behaviour at national scale

The introduction of Chip and PIN in the early 2000s replaced signature verification with PIN entry at the point of sale. It was a technical upgrade – but more importantly, a behavioural one rolled out through millions of everyday transactions.

People had to remember a number and enter it publicly. Retailers had to upgrade terminals. Banks had to replace cards. Fraud liability rules were adjusted to incentivise adoption. There was no single switch-on date. Instead, rollout was phased from 2003 onwards through the normal replacement cycle of cards and terminals.[117]

For consumers, the change brought tangible benefits. PIN verification was faster and more reliable than manual signature checks, reducing queues and eliminating awkward comparisons at the till.

More importantly, it materially reduced counterfeit and lost-and-stolen card fraud. As fraud levels fell, confidence in card payments rose. This encouraged greater use of electronic payments, reducing the need to carry cash and making everyday spending simpler and safer.

By early 2005, two-thirds of consumers had used Chip and PIN. By late 2005, PIN verification was standard for most transactions. What initially felt unfamiliar quickly became routine.[118]

Crucially, adoption was tolerant and forgiving. Signatures remained available for a period. “Chip-and-signature” cards were offered for those unable to use a PIN. Incorrect PIN entries did not result in immediate lockout. Retail staff played a vital role in prompting and reassuring customers. Everyday transactions became low-risk learning moments rather than points of exclusion.

Fraud fell materially after introduction, reinforcing public and political confidence in the change[119,120]. The upgraded terminal infrastructure later enabled contactless payments and mobile wallets, accelerating further innovation in the UK payments market.[121]

Why did it work?

Coordinated industry-led governance, phased implementation and tolerance for mistakes allowed deeply embedded behaviour to change without destabilising trust – and delivered visible benefits that made the new system feel like an upgrade rather than an imposition.

Tackling evolving risks: fraud and scams

Fraud is now the UK's largest crime type and a major driver of lost trust. Losses across banking and payments recently exceeded £1bn in a year[122] and the emotional damage often goes on long after a consumer has been reimbursed financially. Scams are increasingly cross-sector and enabled by new technologies (including synthetic media), so piecemeal responses won't scale. Once again, we are seeing that the risks are at their most intense and challenging during periods of transition, when the pace of change is outstripping a concerted effort to develop the necessary safeguards.

What stops scammers:

- sector-wide intelligence sharing (so telecoms, platforms and banks can block fraud ecosystems, not just end incidents),
- network-level protections (call-blocking, detection at scale),
- visible, fast human recovery routes for victims,
- and industry-backed reimbursement regimes that reduce the long-term harm to individuals.

Example: Stop Scams UK is a cross-sector organisation which brings together law enforcement, telcos and online platforms to disrupt fraud supply chains (by sharing blocked SIM intelligence to identify linked fraudulent accounts). Early signs suggest that coordinated action raises the cost and lowers the reward for criminals.

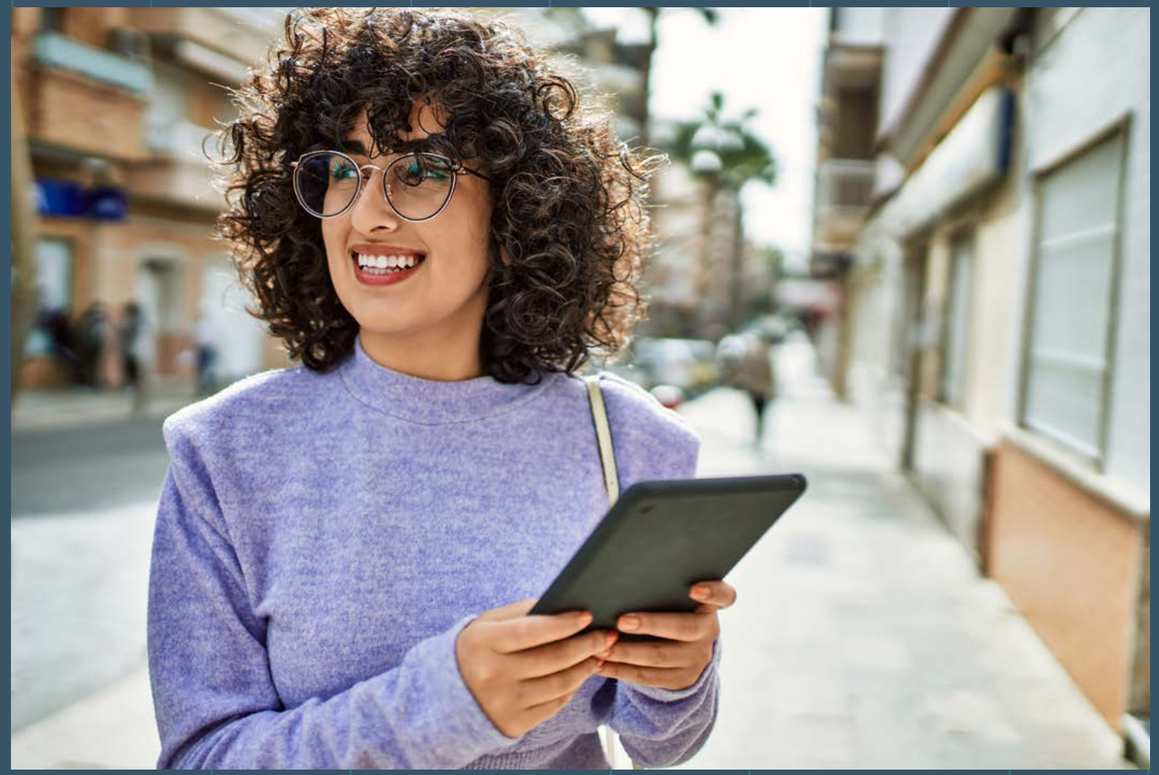
Initiatives like these will become increasingly important as digital participation rises.

Managing transitions successfully – a practical checklist

1. Start by understanding with how people actually use the service to identify challenges at the outset.
2. Be explicit about why change is needed, explaining the benefits and costs of inaction.
3. Before withdrawing or changing a channel, test alternatives and make sure they work for people.
4. Design easy and dignified support as part of the service – with assisted pathways, delegation tools and staff discretion at the point of delivery.
5. Phase, test and learn – pausing or pivoting where necessary.
6. Align operators, regulators, local authorities and civil society behind a common goal – and make inclusion financially sustainable.

Chapter 7

The components of a successful digital society



Chapter summary

Digital transformation does not succeed through technology alone. Evidence from overseas and from earlier UK examples shows that successful digital transitions rely on a small set of shared foundations, including reliable access, usable design, practical support, careful sequencing and clear accountability.

The risk of drift

Throughout this report we have seen how well-managed change can reduce friction, lower costs, widen participation and improve resilience. We have also seen that when change accumulates organically it can create complexity, undermine people's confidence and shift pressure onto citizens and frontline services. For these reasons, we cannot afford to see digital inclusion as a marginal issue, nor about a small group of people "catching up".

Allowing change simply to evolve can seem like the neutral option, but earlier transitions show us that technology or market-led innovation will only get us so far. It becomes transformational only when standards, regulation, policies adapt – and when consumer confidence leads to widespread adoption. Adoption is key to successful digital transition, and adoption relies on consumer confidence. Without confidence, legacy systems will have to be maintained indefinitely, investment will be diluted or delayed, and the benefits of technology will diminish.

Even if nobody is making proactive decisions about digital transition as a whole, in reality, decisions *are* being made. We are choosing to spread investment more thinly, to design services to many different standards and to withdraw older channels on a piecemeal basis. We are also doing what can seem like the kindest option; enabling people to stick with older channels they know and trust rather than working hard to make new channels work for them. This simply leaves many people (often the poorest and most vulnerable) on older, degrading services which get less investment and can offer an inferior experience. This all costs more and delivers worse outcomes for citizens as well as constraining productivity, innovation and growth.

Who we are and why this matters

The Connection Project brings together some of the largest organisations in the UK, supported by leading charities. The breadth of this coalition is rare. It reflects a shared recognition that these challenges are real and that no sector can tackle them in isolation. Collectively, these sectors see the effects of a digital society on citizens every day, and are committed to achieving a digital society which works for everyone.

We are not seeking to take on the responsibilities of the governments or regulators. Our role is different. Because citizens experience life in the round, not sector by sector, we believe there is value in examining digital transition at system level, across industries and services, rather than through isolated lenses. This is partly about orchestration, but it is also about creating the conditions in which essential services remain reliable, markets remain competitive and citizens retain confidence to participate in a digital economy.

This first report has set out the diagnosis. Our next step is to define the foundations which appear necessary if the UK is to move deliberately toward a digital society that works for everyone. Some of these foundations, such as accountability and consumer protection, sit with government and regulators. Others sit with industry; design choices, sequencing, support and investment decisions. And some, such as standards, require joint ownership across sectors. Being clear about where these responsibilities lie can ensure that all our efforts combine to create the conditions for digital adoption, rather than assuming the responsibility lies elsewhere.

What needs to be in place

If we want to actively choose a positive digital future for the UK, we need to question whether we have the foundations in place to make sure the transition happens fairly and effectively.

Our research has shown that successful transitions rely on a small but powerful set of conditions. These are not prescriptions or policy proposals; they are simply characteristics that have appeared consistently where digital transition has been trusted and successful:

1

Reliable and affordable digital access – with connectivity considered an essential service

Everyone can depend on and afford suitable devices and fit-for-purpose connectivity (broadband and mobile) at home, at work and on the move.

2

Usable design

Essential services are simple, accessible and safe by design – including identification and authentication features that work for the people who need to use them and those who support them – with appropriate non-digital routes where necessary.

3

Practical support

People can recover when things go wrong, get help easily and delegate safely without being penalised for honest mistakes.

4

Careful sequencing

Services change only when replacements demonstrably work end-to-end, and transitions are managed with clear communication, realistic timetables and visible support.

5

Accountability and assurance

There is clear ownership for managing major change, transparent standards and metrics, and redress when systems fail.

How and why we want to engage with you

We are seeking to find out the extent to which these characteristics are present in the UK in people's everyday experiences. We want to understand where friction is most acute, where foundations are weakest and where trade-offs are unavoidable. We can then determine whether our foundations are sufficient or whether they fall short – and if so, what action we would need to take to improve them.

We are keen to hear from people who use services, carers and advisers, frontline staff, community organisations, regulators, policymakers and businesses who see both the risks and the opportunities in digital transition.

We would welcome your views on:

- Are these the right components? What is missing?
- Which of these conditions matter most in everyday life?
- Where do they already work well – and where do they fail?
- What makes change feel acceptable rather than imposed?
- When is it reasonable to retire older channels?
- What support should always exist where digital systems are essential?
- What would increase your confidence that essential services will continue to work for you?

What comes next

Having listened to your views and taken the time to understand different perspectives, we will publish a second report in the autumn setting out recommendations and a practical roadmap.

You can share your views and experiences by Tuesday 30 June through our website: www.connectionproject.co.uk or by post to: The Connection Project, 3–7 Temple Chambers, Temple Avenue, London EC4Y 0DA. Please let us know if you are happy to be quoted, or you would prefer your comments to be kept confidential.

Digital change is already reshaping the UK. If we do not shape it deliberately, it will shape our economy, institutions and communities by default. We want to agree how we can make digital work for everyone. We look forward to hearing from you.

References

1 *Electricity (Supply) Act 1926.*

2 Weir Committee (1925). *Report of the Committee on Electricity Supply.*

3 Ofcom (2025). *Online Nations Report 2025.*

4 Financial Conduct Authority (FCA) (2025). *2024 Financial Lives Survey.*

5 Lloyds Bank (2023). *UK Consumer Digital Index 2023.*

6 Ofcom (2025). *Connected Nations Report 2025.*

7 European Commission (2024). *Estonia 2024 Digital Decade Country Report.*

8 Fibre Broadband Association. *2024.*

9 Australian National Broadband Network Dashboard. *2025.*

10 European Commission. *Digital Decade 2025: Broadband Coverage in Europe, 2024.*

11 World Broadband Association. *Broadband and Cloud Development Index, 2024.*

12 Ofcom (2025). *Connected Nations Report 2025.*

13 UK Government (2025), Participation Survey 2024–25; Pew Research Centre (2025); Meltwater Digital 2026 Report.

14 Ofcom (2025). *Connected Nations Report 2025.*

15 GSMA (2024). *The Mobile Economy 2024.*

16 Ericsson (2025). *Mobility Report.*

17 Longitudinal Small Business Survey, *2024;* SSRN. *How Gen Z and E-Commerce SMEs are Driving U.S. Economic Growth, 2025;* The State Council. *The People's Republic of China Website, January 2025;* Science Direct. *Are SME exporters dirtier? A novel input-output analysis distinguishing firm size heterogeneity December, 2024;* EU, *Digital Decade DESI, 2025;* Mandala Report: *How Online Retail Channels boost Australia's small and medium businesses, November 2024.*

18 United Nations (2024). *UN E-Government Survey.*

19 UK Finance (2025). *UK Payments Report 2025.*

20 Reserve Bank of Australia (2024). *Consumer Payments Survey.*

21 World Bank (2024). *Global Findex Database.*

22 Ofcom (2025). *Technology Tracker: Internet and Digital Service Use.*

23 OECD (2024). *OECD Digital Economy Outlook.*

24 Meltwater 2026 Global Digital Report.

25 ONS Retail Sales Index (Sep 2025).

26 Net Guru E-commerce Top Countries.

27 Ofcom (2025). *Connected Nations Report 2025.*

28 China Internet Network Information Centre (2024). *55th statistical report on China's internet development.*

29 Swedish Post and Telecom Authority (PTS) (2025). *Broadband Market in Sweden.*

30 Ofcom. *Online Nation Report, 2025.*

31 Boston Consulting Group, *Trust Imperative 4.0, 2024.*

32 Deloitte/Re:State – *Delivery that matters – The State of the State 2026.*

33 Government of Estonia/e-Estonia (2024). *Digital Signature and e-ID Impact Overview.*

34 Gasa, *State of Scams UK report, 2024.*

35 Lloyds Bank (2024). *UK Consumer Digital Index 2024.*

36 *Ibid.*

37 Ofcom (2025). *Adults' Media Use and Attitudes.*

38 NHS, *Adult Psychiatric Morbidity Survey: Survey of Mental Health and Wellbeing, England, 2025.*

39 Australian Government (2025). *Online Safety Amendment (Social Media Minimum Age) Act.*

40 OECD (2024). *OECD Digital Economy Outlook.*

41 World Bank (2016; reaffirmed 2024). *World Development Report: Digital Dividends; and Digitalisation for Growth.*

42 Open Signal (2025). *Global Network Excellence Index.*

43 UK Finance (2025). *UK Payments Report 2025.*

44 Singapore Government (2024). *SkillsFuture: Year in Review 2024.*

45 Singapore Government (2025). *SkillsFuture: Impact Review 2025.*

46 BankID (2025). *BankID – Statistics and Usage.*

47 UK Government (2022). *Transforming for a Digital Future: 2022–2025 Roadmap.*

48 Lloyds Bank (2024). *UK Consumer Digital Index 2024.*

49 OECD (2019). *Skills Outlook 2019: Thriving in a Digital World.*

50 Office for National Statistics (2020). *Internet Access – Households and Individuals, UK.*

51 Lloyds Bank (2024). *UK Consumer Digital Index 2024.*

52 Financial Conduct Authority (2024). *Financial Lives Survey 2024.*

53 Financial Conduct Authority (2024). *Financial Lives Survey 2024.*

54 Money and Mental Health Policy institute (2026). *In Touching Distance.*

55 Financial Conduct Authority (2024). *Financial Lives Survey 2024.*

56 The range reflects triangulation across multiple nationally representative datasets (including Ofcom digital disadvantage measures and the Lloyds Consumer Digital Index essential skills framework). The lower bound approximates core non-adoption and essential skills deficits, while the upper bound incorporates broader measures of situational constraint, low confidence and dependency in completing digital tasks.

57 Lloyds Bank (2025). *Consumer Digital Index 2024.*

58 Office for National Statistics (2023). *Unpaid care, England and Wales: Census 2021.* Carers UK (2024). *Facts about carers.* Lloyds Bank (2025). *Consumer Digital Index 2025.*

59 Lloyds Bank (2025). *Consumer Digital Index 2025.*

60 Lloyds Bank (2025). *Consumer Digital Index 2025.*

61 Ofcom (2025). *Media Use and Attitudes Report 2025.*

62 Ofcom (2025). *Exploring digital disadvantage: barriers to digital engagement.*

63 Office for National Statistics (2023). *Unpaid care, England and Wales: Census 2021.* London: Office for National Statistics.

64 Scope (2023). *The Click-Away Pound 2023: How inaccessible websites cost UK businesses billions.* Office for National Statistics (2023.) *Disability, England and Wales: Census 2021.*

65 Office for National Statistics (2024). *Crime in England and Wales: year ending March 2024.* UK Finance (2025). *Annual Fraud Report 2025.* FCA (2025). *Financial Lives 2024 survey.*

66 Good Things Foundation (2024). *Scaling solutions to data poverty in the UK.*

67 Citizens Advice (2024). *Essential bills made affordable: a blueprint for targeted support.*

68 Ofcom (2026). *Affordability of communications services and Pricing trends for communications services.*

69 Ofcom (2026). *Affordability of communications services and Pricing trends for communications services.*

70 Citizens Advice (2024). *Essential bills made affordable: a blueprint for targeted support.*

71 Ofcom (2025). *A demographic deep dive into internet use: Analysis using Ofcom's Technology Tracker 2025.*

72 Yates, S.J. (2026). *Analysis of household digital costs using current ONS Living Costs and Food (LCF) survey data (2023-24) – Digital Access Affordability.*

73 Citizens Advice (2024). *Essential bills made affordable: a blueprint for targeted support.*

74 Good Things Foundation (2022) – *The Economic Impact of Digital Exclusion in the UK.*

75 Good Things Foundation (2024). *Scaling Solutions to Data Poverty.*

76 Ofcom (2025). *Online Nation 2025.*

77 Digital Television Group / Ofcom (2024). *Identifying Challenges and Solutions for Improving Inclusivity and Usability.*

78 UK Government (2023). *Family Resources Survey: Financial Year 2022–2023, Carers Section.*

79 Lloyds Banking Group (2025). *UK Consumer Digital Index 2025.*

80 BankID (2025). *BankID – Statistics and Usage.*

81 Department for Environment, Food & Rural Affairs (2026). *Key findings, Statistical Digest of Rural England.*

82 Ofcom (2024). *A demographic deep dive into internet adoption – technical report.*

83 Ofcom (2024). *Customer Satisfaction Tracker (CSAT) 2024 – Technical Report.*

84 Office for National Statistics (2025). *Who has access to hybrid work in Great Britain?*

85 Building Digital UK (2021)- *State Aid Evaluation Report.*

86 DSIT (2025). *Digital Inclusion Action Plan: First Steps.*

87 UK Parliament (2025). *Science, Innovation and Technology Committee: Government Shares Calculation for £45 Billion Annual Savings from Digitisation of Public Sector.*

88 UK Government (2025). *Prime Minister's Remarks on the Fundamental Reform of the British State (13 March 2025).*

89 Cabinet Office, Speech by Darren Jones, CST (2026). *Move fast. Fix Things.*

90 Nominet (2023). *Digital Youth Index 2023.*

91 Department for Education (2025). *Narrowing the digital divide in schools and colleges.*

92 Cebr for Openreach (2024). *Impacts of Full Fibre Rollout.*

93 BT Group (2025). *Driving Growth – the £230bn opportunity of Improved Mobile Networks.*

94 Economics Observatory (2024). *What Explains the UK's Productivity Problem?*

95 PwC (2025). *The Socioeconomic Impact of Digital Transition (Commissioned by the BBC).*

96 DCMS (2021). *Superfast Broadband Programme – Synthesis Report.*

97 PwC (2025). *The Socioeconomic Impact of Digital Transition (Commissioned by the BBC).*

98 OECD (2024). *Digital Government Index* (latest edition), published in *Government at a Glance*.

99 OECD (2019). *How's Life in the Digital Age? Opportunities and Risks of the Digital Transformation for People's Well-being.*

100 Andy Haldane (2018-2022). *The Importance of Social Capital* (RSA and Bank of England speeches and essays).

101 RSA (2025). *Revealing Social Capital.*

102 Liverpool University and others (2025). *The Minimum Living Digital Standard.*

103 UKCN Consumer Remedies Workshop (2017). *The UK's switch to digital TV.*

104 UKCN Consumer Remedies Workshop (2017). *The UK's switch to digital TV.*

105 UK Government (2012). *On time and under budget, an all-digital UK* (Press release).

106 National Audit Office (2008). *Preparations for Digital Switchover – Value for Money Report.*

107 Digital UK (2012). *Digital TV Switchover – Final Report (2008–2012).*

108 Transport for London (2013). *TFL's Famous Oyster Card Celebrates 10 Years of Making Journeys Easier for Customers.*

109 Mastercard (2019). *Transport for London Contactless Payments Case Study.*

110 Mayor of London / Transport for London (2014). *Removal of Cash Fares on Buses: Request from TFL.*

111 Transport for London (2014). *Cash fares on buses (withdrawal of cash fares from 6 July 2014).*

112 Transport for London (2023). *TFL Celebrates a Decade of Contactless Payment on London's Buses.*

113 UK Government (2025). *Public Switched Telephone Network (PSTN): guidance, industry charters and migration principles.*

114 UK Government (2025). *Telecare National Action Plan: protecting telecare users throughout the digital phone switchover.*

115 Local Government Association (2025). *National Telecare Campaign: Partner Toolkit.*

116 Ofcom (2025). *The future of landline calls and the PSTN switch-off.*

117 Bank for International Settlements (2012). *Payment, Clearing and Settlement Systems in the United Kingdom (CPMI).*

118 Bank for International Settlements (2012). *Payment, Clearing and Settlement Systems in the United Kingdom (CPMI).*

119 APACS (2026): *Fraud analysis.*

120 European Central Bank (2019). *Card Fraud Statistics and EMV Migration in Europe.*

121 UK Finance (2022). *Migration to NPA Is an Investment, Not a Cost Burden.*

122 UK Finance (2025). *Annual Fraud Report.*

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