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Careful  
Trouble

# Tech for Today – and for Tomorrow

Building secure foundations  
for digital Britain

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Rachel Coldicutt OBE

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## Credits

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Careful Trouble is a research studio and a social enterprise.

Our mission is to make technology work for 8 billion people, not just 8 billionaires.

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**Concept:**

Rachel Coldicutt

**Research, investigation, and analysis:**

Dominique Barron, Rachel Coldicutt, Anna Dent, Tom McGrath

**Writing — original draft:**

Rachel Coldicutt, Tom McGrath

**Writing — review and editing:**

Dominique Barron, Rachael Burton, Anna Dent

**Graphic Design:**

Aimee Capstick

**Project and operations coordination and management:** Rachael Burton, Aurélie Coulibaly, Ashleigh Folan

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# Tech for Today

Everyone across Britain needs to share in the opportunities that new technologies create. This paper outlines why a new government must prioritise practical delivery that delivers real benefits today, for all of us.

The digital revolution has delivered extraordinary benefits, changing the lives of millions of people in Britain and billions around the globe. But the power and potential of these new technologies is not yet equally distributed.

Innovation can and should deliver a better quality of life for everyone, everywhere. R&D funding and cutting-edge breakthroughs are vital for any modern economy, but too often they exist in a vacuum. Britain cannot wait for the financial benefits of new inventions to trickle down or for the spillover benefits of science parks and Investment Zones to materialise.

A true innovation culture gives more people the opportunity to acquire new skills, find solutions to challenges, and make the best use of the resources at their disposal. It enables resilience and inventiveness and – in uncertain times – gives more of us the resources and abilities to confidently shape our own futures.



Britain needs an urgent focus on securing technology foundations to deliver the skills, health benefits, infrastructures, and investments that will enable more people, more neighbourhoods, and more businesses to thrive today and look forward to tomorrow with confidence. While investments in critical technologies are essential, Britain also needs the basics to be in place: the most foundational of these is affordable connectivity for everyone, everywhere.

Delivering this will unlock more productivity, build business confidence, increase health and wellbeing, drive sustainability, and power more home-grown innovation.

# 1. Tech Foundations

The foundations of future tech success need to be built today. Sustainable approaches to skills and essential infrastructure that prioritise efficient technology roll-out must be in place for Britain to build technological strength and resilience, power more homegrown innovation, and deliver better, more effective public services.

Successive Conservative governments have taken a carrot-and-stick approach to technology policy, combining speculative bets on high-tech solutions for tomorrow with an inconsistent approach to Big Tech governance. Just days after the Online Safety Act passed into law, the Prime Minister offered an extraordinary platform to Elon Musk, the sole proprietor of X. As we head into an election year, technology policy is littered with unrealised promises while little attention is paid to the everyday reality of technology rollout and adoption.

This means modern Britain is stuck in a place where existing technologies are not delivering essential benefits. We need strong foundations to ensure the next waves of technological change do not wash over us.



The NHS is a case in point: in teaching hospitals, cutting-edge AI diagnostic tools sit side-by-side with fax machines; patients can benefit from great advances in telemedicine, robots and radiology but often need to queue in person to book GP appointments – and clinicians who know how to turn on the printer turn into heroes in the workplace. In the words of a GP, “Most of us are trying to provide medical care fit for the 2020s with computer systems better suited to the 1990s.”<sup>1</sup>

As access to essential services and social connection shifts online, recent Ofcom figures show that 7% of households still don't have Internet access at home – and of those that do, many are struggling, with households going into debt to pay their broadband and mobile bills.

Meanwhile, as AI and automation are revolutionising whole sectors worldwide, 1 in 4 UK businesses have not adopted basic ICT, half of British businesses have no plans to use AI, and there is a shortage of skilled workers to power the growth of our most successful tech companies.

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<sup>1</sup> Gavin Francis, “Voters are unhappier with the NHS than they've been for 30 years. As a GP, I feel the same”, The Guardian, 24 August 2023

[https://www.theguardian.com/society/2023/aug/24/voters-are-unhappier-with-the-nhs-than-theyve-been-for-30-years-as-a-gp-i-feel-the-same?CMP=Share\\_iOSApp\\_Other](https://www.theguardian.com/society/2023/aug/24/voters-are-unhappier-with-the-nhs-than-theyve-been-for-30-years-as-a-gp-i-feel-the-same?CMP=Share_iOSApp_Other)

# Prioritising practical delivery

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To do this, we need a whole nation approach to technology renewal that begins at the neighbourhood level and builds resilience throughout the country. Under a new government Britain needs support for:

- **Innovation:** Community organisations, and the innovation they deliver, should be supported to play an integral part in equitable economic and social renewal, building community wealth, and addressing place-based inequalities.
- **Community ownership:** Greater investment is needed in community organisations that drive technology adoption and create new technologies, particularly in places and domains that do not typically benefit from innovation investment.
- **Skills:** Britain needs to build solid, necessary foundations that will enable more people to become innovators, increase Britain's technical skills and maturity, and strengthen our social fabric.
- **Community data:** Britain needs support to build data, technology, and AI systems that benefit, not hold back, communities. Community data powers resilience, resistance, activism, and change. And it's essential for a robust, fairer, and more just data ecosystem.
- **Affordable connectivity:** All of this must be powered by a commitment to connect everyone, everywhere. The first step to this is to reclassify the Internet as an essential utility. For more on this, see our paper [Digital inclusion: from sticking plasters to sustainable progress.](#)



# 2. A Whole Nation Approach to Technology

Britain needs to make practical steps towards building secure foundations for a thriving technology economy.

Inspired by the technical delivery concept of “small parts loosely joined”, this plan proposes the adoption of a strong single vision that is brought to life by multiple simultaneous delivery plans at national, regional, local, and neighbourhood scales. Such a plan would be purposeful, compelling, and lead to rapid operationalisation while also delivering the beginnings of a national innovation ecosystem.

A focus on roll-out will address the latent potential that already exists in Britain and help turn research capabilities into jobs and outcomes that make a tangible difference to people’s lives.

Rather than attempting to replicate Silicon Valley through intensifying investment in the Golden Triangle, Britain can make the most of its small geographic footprint and take a whole nation approach to innovation that lifts everyone up together.



# Nationally unified, delivered locally

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A strong single vision that commits to rolling out the benefits of technologies for everyone, everywhere will deliver consistency for businesses, empower central and local government for joined-up delivery, and signal to global partners that Britain is a technologically engaged nation, committed to building long-term capabilities.

This is needed because, in 2023, Britain's tech strategies are set to "uncertain".

Data and digital technologies affect almost every aspect of modern life, but over the last decade government tech policies have been scattered across departments and ministerial briefs. This means that mixed signals and unachievable goals have proliferated. For instance, the current administration wants to foster high-growth tech companies through a low-regulatory approach to AI. Yet the same government is increasing criminal liability for tech CEOs in order to make the safest place in the world to be online.

Adopting a single, clear vision will:

- create confidence and consistency for businesses
- enable better planning and coordination across central and local government
- set clear direction for joined-up digital public-service delivery
- deliver consistent outcomes for citizens and for businesses
- strengthen economic and job security
- make it easier for local places to thrive and have autonomy

# Activated through place-based innovation

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## Bringing innovation out of science parks, into the real world

A place-based approach can make the most of the assets and the people power we already have to deliver real change, at speed.

This will entail:

- mobilising neighbourhood-scale ingenuity to deliver sustainable solutions, such as retrofitting housing stock and supporting the circular economy
- supporting regional networks with effective and sustainable local infrastructure and skills development
- updating policies and upgrading national infrastructures and policies to support rapid growth and diffusion
- backing cross-sector R&D with international collaboration to future-proof our economy

Delivering rapid coherent and sustainable change requires a joined-up commitment to open working across different scales; championing reuse and interoperability wherever possible, building in open standards and high quality documentation from the beginning.

# Communities and neighbourhoods

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Security for local places includes locally rooted innovation and infrastructure that develops skills, creates social infrastructure, and builds capabilities.

Rather than assuming that the wider social and economic benefits of innovation are restricted to the spillover benefits of science parks, better access to modern technologies would help every household and every business to take a more active role in building a more secure and sustainable future.

Beginning at the neighbourhood scale will bring data and technology skills out of regional tech hubs into more local contexts; this will simultaneously build social and physical infrastructure, improve resilience, and create value that sticks to place. As Denning and Dunham say in *The Innovator's Way*, “being excellent on a global scale begins with being excellent in the neighbourhood”, and investment in hyperlocal skills and infrastructure has the potential to build Britain’s capabilities rapidly, from the neighbourhood up to the national scale.

Such a focus will also support lifelong learning and retraining outside of formal education contexts: hands-on technical skills can be learnt and first encountered by people coming together to set up the necessary infrastructure to run a community pub or radio station, and they can be cultivated and developed in vibrant community settings.

Places such as [Liverpool DoES](#), that combine makerspace technologies like 3D printers with coworking facilities and community, create accessible and relatable ways for more people to try things out and gain technology confidence. These kinds of local facilities spark entrepreneurial spirit while also demystifying technologies, and they sow the seeds for local potential and curiosity and offer a glimpse for people of what being a developer or a technologist really means.

Unlocking the **potential of neighbourhood-scale collaboration** is also essential for delivering Net Zero adaptations in accessible and effective ways.

Bristol-based **We Can Make** have pioneered this approach, combining high-tech manufacturing methods with hyperlocal skills to build low carbon homes; **Civic Square** in Birmingham brings together data-driven community retrofit programmes with local skills sharing and community development; in London, **Library of Things** is delivering the rental revolution for tools and equipment. These social enterprises show how vital, future-facing skills and innovation can be seeded at postcode level for relatively low cost, inspiring significant change and building resilience.

Investment in neighbourhood-scale innovation will build community power, create new jobs, strengthen social infrastructure, diversify skills, and deliver sustainable benefits to communities.

# Regional sustainability

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At the regional level, one size does not fit all and this diversity of assets, skills, and existing infrastructures can and should flourish. It is important to recognise that innovation requires real-world support and that something as mercurial-seeming as data is extremely reliant on people, bricks, and mortar.

The ability to support regional ambitions with effective infrastructure will be critical to Britain's participation in the next wave of technology development.

In 2022, **three boroughs in west London paused house building** because of the electricity demands of nearby data centres; in Cambridge, water scarcity is one factor slowing down the house-building ambitions. Meanwhile, poor transport links and delayed upgrade programmes hold back the economic potential of cities including Leeds, Manchester, and Sheffield. Environmental considerations are particularly critical for AI, which depends on data storage and compute power.

Committing to sustainable solutions for house building, transport development, and data storage is essential to building Britain's innovation future; a commitment to realistic, effective short-term measures now will lay the foundations for long-term productivity uplifts and innovation wins.

# Resilience and better technology governance

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A second-order consequence of a vibrant national approach to technology is that Britain will be less susceptible to corporate capture from Silicon Valley Big Tech firms.

The cast list for the recent AI Summit in Bletchley Park show that Britain's technology priorities are being written for the benefit of a small number of global companies: this must change, and Britain's approach to both innovation and AI governance needs to focus on productivity and opportunity at home.

Building technology skills and capabilities from the ground up and cultivating connections will help to minimise shocks, build security, and increase resilience so that Britain can take advantage of the opportunities these new technologies create – not be taken by surprise and left behind.

Community power is also essential for improving and rolling out more effective, more equitable technology governance.

For more on this, see [“Putting the lid on Pandora's Box: the role of community power in AI governance”](#).

# 3. The Role of Community Tech

Community tech is hardware or software that delivers benefit to a community group, which that community group influences or controls. Community tech meets needs that the market cannot, will not, or should not be the default provider for. Community tech exemplifies the need for tech foundations, spread geographically and socially, and demonstrates the power and potential of innovation at a local level.

Community tech also provides the infrastructure that binds people and places together, helping to build social infrastructure and foster neighbourhood connections. In the words of Carolyn Hassan, CEO of Knowle West Media Centre in Bristol, it helps create “value that sticks to a place”.

Since 2021, Promising Trouble has been working with community business funder Power to Change to support a growing network of hundreds of community tech organisations from across Britain.





## Case Studies

# Knowle West Media Centre and We Can Make

Knowle West Media Centre (KWMC) is an arts and technology collective based in the 100 year-old council-built estate of Knowle West in South Bristol – one of England’s top 5% most deprived areas. Knowle West is poorly served by transport and often feels disconnected.

Using the arts, technology, and making, KWMC delivers creative projects that focus on building community wealth, social and digital infrastructure, and creating a fairer, more sustainable future. KWMC seeks to explore how Knowle West can more successfully navigate new waves of economic and technological change, in ways that don’t just reinforce structural inequalities and a sense of being “left-behind”.

KWMC’s approach to using tech to create value for their place-based community is to make it as “sticky” as possible. This means holding on to its value in the form of jobs, skills, new community-led business models, and community-owned infrastructure.

KWMC’s use of new digital design and fabrication tools to create homes has: trained 30 local people with these new tools; co-designed and delivered two low-carbon homes; seeded a new community enterprise **We Can Make**; invented new precedents that are influencing housing policy; and demonstrated how a community can be a producer and source of system-changing innovation.



## Case Studies

# Carbon Co-op

Carbon Co-op is an energy services and advocacy co-operative based in Greater Manchester that helps people and communities to make the radical reductions in home carbon emissions necessary to avoid runaway climate change.

Carbon Coop's Home Energy Management system allows users to have complete control over their high energy devices, using a fully customisable dashboard that presents data in a way that makes sense to them. For example, this may enable users to reduce consumption at times of peak demand, reducing their costs and increasing resilience to recent energy price increases.

The fundamental strength of Carbon Co-op is that they are trusted by their members. Solutions are based on the best available data without commercial preference, which enables them to pilot modelling, prediction, monitoring, and control software within a living lab of real households.

Carbon Co-op works closely with local government, social housing providers, civil society networks, and other community stakeholders through working groups and task forces, such as Greater Manchester Retrofit Taskforce and Great Manchester Mayor's Green Summit.



# 4. Conclusion: Getting Started

Rolling out skills and infrastructures in equitable and effective ways is essential for ensuring the productivity and security benefits of technologies are experienced throughout Britain. After all, digital technologies are a part of everyday life for everyone, not just for the tech sector and those involved in R&D.

It is also worth remembering, as a [recent Institute for Government paper](#) sets out, that not all innovation is cutting-edge:

*There is more to innovation than new ideas. In lower-tech sectors such as retail, accommodation and the arts, this will often look less exciting, involving the diffusion of existing ideas and practices (often through better management practices). But it is likely to be especially important for some of the lowest productivity places where these lower-tech sectors are big shares of the economy.*

The policy building blocks needed include:

A local and community focus on lifelong skills development and retraining that makes technology skills available beyond formal education, via makerspaces and other community organisations.



Investment in data and code sharing infrastructure to supercharge collaboration and reduce duplication, so that physically distributed technology organisations can share resources and work faster and more effectively.

Secure funding streams for community-scale innovators so they can focus more time on delivery and less on fundraising.

Being attentive to this “last mile” may not be the stuff of global summits, but it is essential for ensuring Britain is prepared for the changes emerging technologies will bring. Deep technological skills and engagement across the nation are a vital part of getting Britain building again, and they need to be in place from the neighbourhood scale up.

# Further information

## About Careful Trouble

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## For more information:

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Rachel Coldicutt OBE  
Executive Director, Careful Trouble  
[hello@careful.industries](mailto:hello@careful.industries)

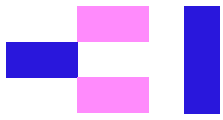
## About this document

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Careful Trouble has been working with [Power to Change](#) since 2021 to support and expand the field of the development of [Community Tech](#).

Find out more about [Community Tech](#).

This document began life as a provocation for [Labour Together](#) in summer 2023.



# Careful Trouble

