

STRENGTHENING LOCAL DIGITAL CAPITAL: FOR A LEVELLED-UP RECOVERY

Building the Future We Need

“Over the last twenty years many ‘technology visions’ have tried to predict what life would be in 2020. Few could have come close to reality. Since March, lives have been turned upside down by COVID-19 at huge human, social, and economic cost. This crisis is still far from over, and its effects will be felt for many years, but with extraordinary progress being made on multiple vaccines there is hope that life could return to normal in 2021.

But what should normal look like? How can we use digital technology not just to get back to where we were, but to build the future we need? A future that works better for people, society, the economy, and the planet. techUK asked these questions over the last six months through a series of virtual Digital Dialogues across the UK’s nations and regions.

Through these Digital Dialogues we heard about the toll COVID-19 has taken on people, businesses, and public services. However, we also heard about how technology has helped people adapt and reinvent. And we found optimism and ambition about how the UK’s nations and regions could use digital transformation to build a better, more inclusive, and more prosperous future.

From these discussions, we have produced a series of reports: seven focused on individual nations and regions; and this one looking at the UK as a whole. These reports are rooted in discussions involving more than 260 people from across the UK and from the private, public and third sector. They draw on their experience and ambitions for the future and set out the priorities for action that were consistent themes across all seven Digital Dialogues. The key message is that digital innovation is integral to the mission of levelling-up the UK.



WE CANNOT COME
OUT OF THIS CRISIS
AND ENTRENCH THE
INEQUALITIES THAT
HAVE BEEN EXPOSED
BY IT. THE ONLY RIGHT
WAY TO RESPOND
TO THIS IS TO GO THE
OTHER WAY – AND
LEVEL-UP.

Mayor Andy Burnham, North West Digital Dialogue

The prize is a tech-savvy United Kingdom where all nations and regions can participate in, and benefit from, a rapidly digitising global economy.

With concerted action, the benefits of digital innovation and growth can be more widely and fairly distributed both across the UK and across the economy. We need to be a world leader in the diffusion of technology. But the conditions for that change will not happen by accident, especially given that cities, regions, and nations around the world are competing for digital leadership.

Action must be shaped and driven at the local level, based on local knowledge, expertise, networks, and capabilities, and supported by national policy and resources. Every nation and region should have a clear vision of what it wants to achieve and how it plans to get there. This vision should extend beyond the potential for tech start-ups and look at how technology can transform the efficiency and productivity of existing businesses and public service outcomes. The policy focus also needs to extend beyond the most obvious levers of broadband and digital skills to encompass issues such as digital adoption, data ecosystems, innovation funding and investment, and trade support – a set of capabilities that techUK brings together under the label of local digital capital.

To do all this well there needs to be broad local engagement and investment in building local tech ecosystems across regional and national economies. Innovation happens at the intersection between different fields of knowledge and expertise, often leading to the creation of new specialisations and even new markets. Rich local ecosystems serve to facilitate these spillover effects and can be powerful multipliers of innovation. Seed investment in open local networks to build these ecosystems can generate significant returns.

The experience of using technology to adapt to the impact of COVID-19 has demonstrated how much can be achieved. Working together, we now need to apply that same sense of purpose in preparing for what comes next. To build the future we need. A future that serves the needs of people, society, the economy, and the planet at the local level.

I hope that you will join us in this work.”

Julian David, CEO, techUK



Recommendations

Enacting measures to strengthen one or two of these areas will deliver incremental gains. If we want to transform our nations and regions, then they must be implemented in their entirety given their mutually reinforcing nature.

1. **Improve Collaboration and Coordination**

- a. Create a framework to understand and measure the depth of local digital capital in each area.
- b. Fund small teams to facilitate open collaboration and coordination across all organisations involved in building local digital capital.
- c. Establish a Chief Digital Officer forum for nations and regions to support national collaboration.

2. **Build 21st Century Skills**

- a. Review the Apprenticeship Levy to expand its role into a broader skills and training levy.
- b. Support the creation of short modular digital skills courses accredited by employers to open accessible and affordable pathways for people looking to retrain for digital roles.
- c. Launch a commission on jobs and automation to understand the implications of automation for the UK's nations and regions.

3. **Drive Digital Adoption**

- a. Deliver digital adoption incentives for SMEs.
- b. Create a Chief Digital Officer (CDO) credit.

4. **Strengthen Data Ecosystems**

- a. Government should undertake an analysis of regional data ecosystems to identify how they can be strengthened through the National Data Strategy.
- b. Continue support for the Ministry of Housing, Communities & Local Government (MHCLG) Local Digital Collaboration Unit and Local Digital Fund.



5. Deliver Digital Infrastructure

- a. Keep to the Government's manifesto commitment of universal gigabit connectivity by 2025 to ensure that businesses and families can take advantage of the technologies this enables.
- b. Bring forward a full package of barrier busting measures for both fixed gigabit broadband and 5G.
- c. Undertake a competitiveness study into the UK Data Centre market to preserve and grow our world-leading status as an international hub for the data economy.

6. Strengthen Finance and Investment

- a. Develop a UK funding strategy with the explicit aim to support growth outside London and the South East.
- b. Map and create a one-stop shop of information for UK start-ups and firms seeking investment.
- c. Incentivise investors to discover opportunities across the UK.

7. Harness Research and Innovation

- a. Better align research and development (R&D) strategies with economic growth objectives.
- b. Further the focus on place by investing in innovation infrastructure across the country.
- c. Identify technology clusters and develop investment partnerships to build centres of excellence and lead in strategic technologies.

8. Secure Trade Support

- a. Central Government should seek to ensure that all future free trade agreements contain SME chapters.
- b. Central Government should target support to regions and nations most likely to need extra support to adapt to new trading conditions.
- c. Devolved Governments, regional mayors and local authorities should strengthen the role of export advocates and export champions.



Introduction

These reports serve as techUK's initial contribution to the role of the digital technology sector in creating a levelled-up United Kingdom.

Our conclusions are based on hosting seven Digital Dialogues with over 260 attendees from 150 different organisations, as well as engaging regional clusters, companies, and stakeholders from both within the digital tech sector and the wider economy.



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EVERYTHING IS
DEPENDENT ON DIGITAL.
IT IS BOTH THE
STRUCTURAL ENABLER
AND OF COURSE THE
APPLIED SOLUTION
TO THE PROBLEMS
AND OPPORTUNITIES
OF THE FUTURE.

Mayor Andy Street, West Midlands Digital Dialogue

Three points shone through in these conversations:

1. The strength of the UK tech sector

The tech sector is not isolated from the incredible challenges and damage that COVID-19 has caused to the economy. As with other sectors, we have relied on Government support and initiatives such as the Future Fund to minimise the long-term disruption.

Our Digital Dialogues highlighted the incredible concern about our customers and partners, in both the public and private sector, as well as the long-term economic outlook.

However, it was also apparent that the sector entered the pandemic in a position of strength, growing at six times faster than the UK economy overall when COVID-19 hit. This momentum is clear to see in the level of venture capital being raised this year – and not just in London, with Bristol's Graphcore raising £150 million, Newcastle's Partnerize raising £50 million, and Cardiff's ANNA Money raising £21 million.

This energy, and the very nature of our sector means we have been fortunate to move to virtual working in ways that others are not able to. Indeed, despite deep concerns about the macro-economic climate and public services, there was still a remarkable sense of opportunity and optimism in our Digital Dialogues.



WE NEED TO MAINTAIN THE MOMENTUM OF DIGITAL ADOPTION AND SHARE CASE STUDIES OF HOW COMPANIES HAVE BENEFITED. WE HAVE SEEN A HUGE ACCELERATION OF DIGITAL ADOPTION, AND PRE-COVID WE SAW THE BARRIERS TO ADOPTION. BUT BECAUSE OF COVID, WE HAVE MANY EXAMPLES OF HOW BUSINESSES HAVE ADOPTED DIGITAL. WE CAN SHARE THEIR EXPERIENCES TO MOTIVATE AND SHOW OTHER BUSINESSES HOW THIS CAN BE ACHIEVED.

Yorkshire and Humberside Digital Dialogue Participant



2. Opportunity and optimism

That optimism is borne, in part, because of the experiences from the pandemic – from accelerated adoption of technologies like cloud or online accounting platforms in months rather than years, to the collaboration between the public and private sector during the emergency. The new ways of working and networks are, overall, seen as a positive.

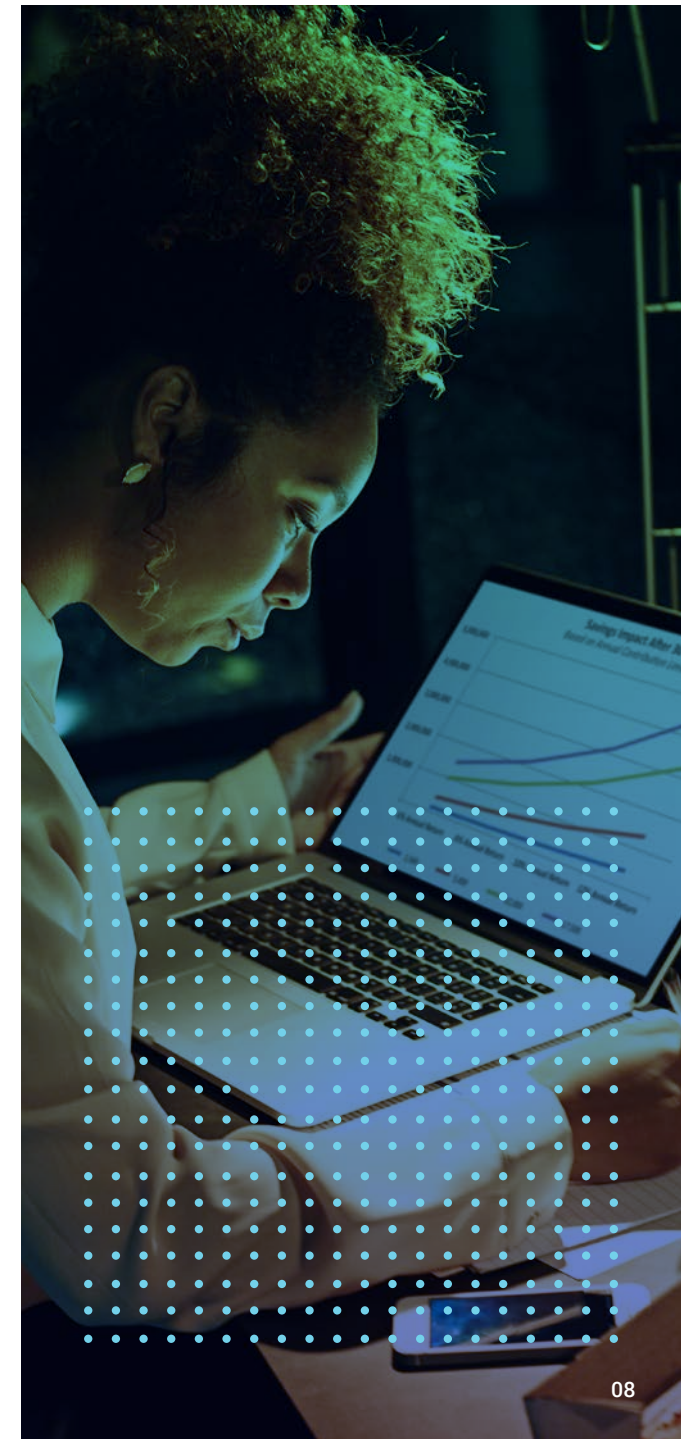
That is not to say that the tech sector is unaware of both immediate health and economic challenges as well as the medium-term challenge of climate change. These are key priorities. But the pace and way of working that has developed over the past few months offers the sector a way forward in addressing them.

Of course, optimism and the sense that we can tackle the structural inequalities that exist across our nations and regions because COVID-19 has forced us to focus on them, will only get us so far. This report is about how the tech sector can help to achieve that objective - by bringing more jobs and more investment into our sector, and by deploying tools to help the rest of the economy to thrive and to deliver public services more efficiently.



COVID HAS THROWN A NUMBER OF PROBLEMS WE HAD INTO SHARP RELIEF [AND IT HAS GIVEN US THE] OPPORTUNITY TO DO THINGS AFRESH. IN THE NHS, IT OFTEN TAKES SEVEN YEARS TO GET PROJECTS THROUGH, BUT IT TOOK ONLY A FEW WEEKS TO GET GPs TO USE NEW SOFTWARE.

Lee Waters, Deputy Minister for Economy, Welsh Government



3. The need to capitalise

We must fundamentally increase the digital capital – the inputs into our society and economy – that is available to people across the UK.

Our individual national and regional reports highlight what actions are needed at the local level, but there are also many policy levers which sit in Westminster that need to be pulled. This includes a discussion around which powers sit where, and whether the balance of powers resulting from the UK's devolution settlement is fit for purpose.



WE HAVE SEEN BIG INCREASES IN PRODUCTIVITY AND COLLABORATION – ESPECIALLY BETTER CONNECTED WITH BEIS (WE NO LONGER HAVE TO FLY TO LONDON) AND SO WE CAN HAVE A BIGGER IMPACT ON UK-WIDE POLICY.

Northern Ireland Digital Dialogue Participant

Strengthening local digital capital

Collaboration and coordination

The strength of collaboration goes some way to determining the strength of the local digital ecosystem.

The **beneficial impacts of business or sector clusters** in driving productivity, innovation, and greater economic impact are well-established. While the other seven components that make up local digital capital are important, it is the ability to weave these elements together that is the cornerstone of a successful ecosystem – maximising the virtuous network effects of local digital capital.

Through our Digital Dialogues, we engaged with a multitude of different business groups, enterprise partnerships, universities, local authorities, and local tech clusters.

COVID-19 has been a catalyst for increased collaboration between organisations across the public and private sector as they have sought to work together to address the medical and economic emergency.



DURING COVID [INITIAL LOCKDOWN] WE SAW AN INCREASE IN COLLABORATION, MY WORRY IS THAT WE'LL START TO GO BACK INTO OUR SILOS, FOCUSING ON OUR CLUSTERS INSTEAD OF COMING TOGETHER AS A REGION AND BUILDING A NARRATIVE WE CAN ALL BUY INTO.

North West Digital Dialogue Participant



SMALL BUSINESSES IN THE REGION TRUST THE PEOPLE THEY KNOW AROUND THEM, AND THAT'S WHO THEY WANT TO HEAR FROM. WE SHOULD BE COLLECTING STORIES ABOUT THE COMPANIES DOWN THE ROAD, AND WE HAVE TO ACCEPT FOR MANY SMES, THAT'S HOW THEY OPERATE, AND THEY DO NOT ALWAYS ENGAGE WITH NATIONAL PROGRAMMES.

Yorkshire and Humberside Digital Dialogue Participant

WE NEED TO HAVE LEADERSHIP ACROSS THE REGION: INDUSTRY, PUBLIC SECTOR, ACADEMIA, CITIZENS, ALL INVOLVED AND PULLING IN THE SAME DIRECTION.

West Midlands Digital Dialogue Participant

Local Digital Capital

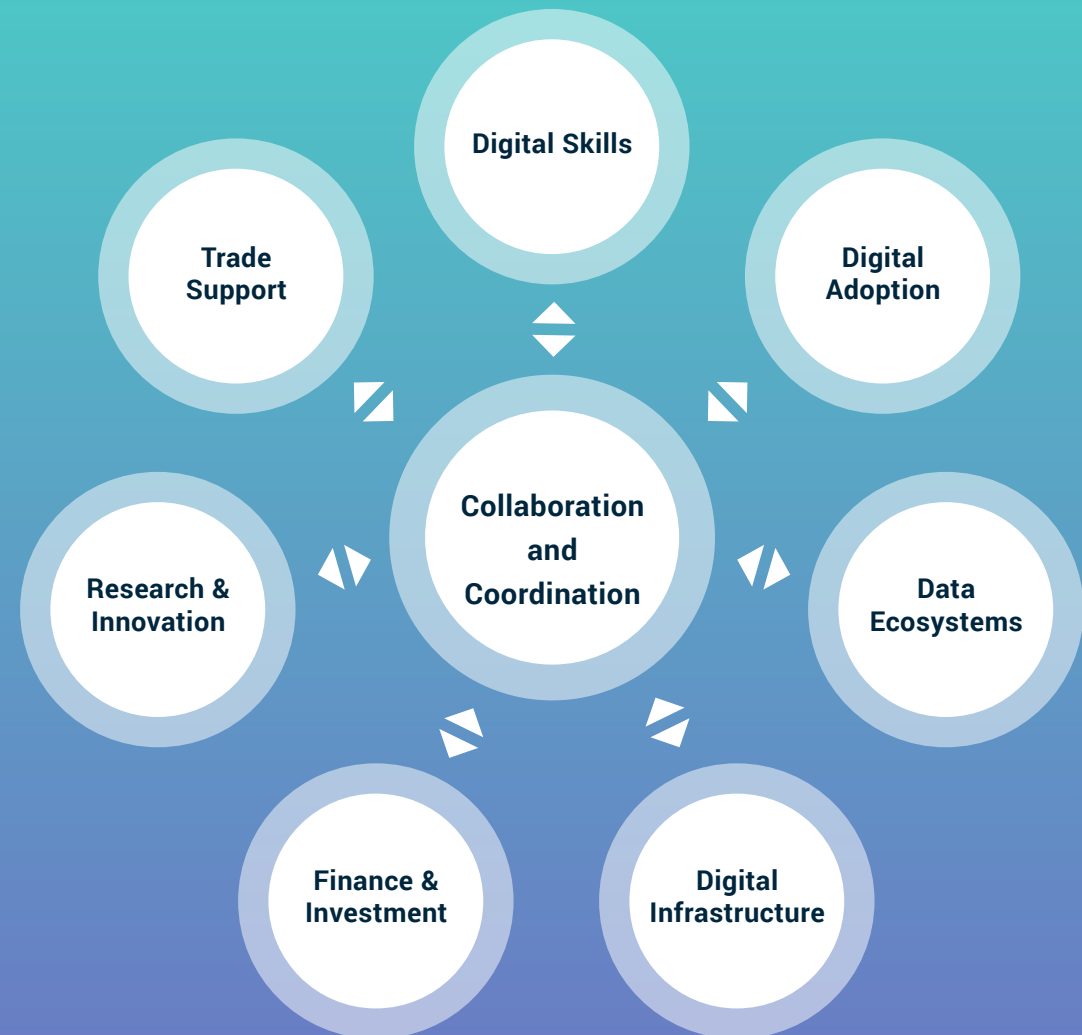
Local digital capital describes the inputs needed at the local level to maximise the benefits of digital technology to our society and the economy.

Eight components were identified by participants across techUK's Digital Dialogue events as essential inputs for an area to benefit from digital transformation and digital innovation.

Much like human capital, each component of local digital capital enables citizens, companies, and the public sector to interact and work more effectively – producing something of direct economic or social value. The strength of each of these inputs impacts the quality of the local ecosystem.

It is important to think about these inputs in aggregate and develop a strategy that focuses on strengthening digital capital at the national and regional level.

Our individual reports highlight the ways that local digital capital can be strengthened by local actors, though many of the levers that can enhance digital capital across the UK are in Westminster. This report focuses on what central government, and in places the devolved administrations, can do to strengthen the digital capital available to the public and private sector across the whole of the UK.



The eight components of local digital capital:

- **Collaboration and coordination:** Effective collaboration and coordination across and between public and private sector bodies is critical to success. This is also vital in order to deliver growth objectives such as improving each element of local digital capital.
- **Digital skills:** Digital skills range from being able to access basic public services online through to the most advanced level of quantum computing. We need everyone to be able to build and develop their skills.
- **Digital adoption:** This relates to the uptake of technology platforms, mostly software, by businesses (e.g. cloud, CRM, accounting, and team management software). These tools help businesses gather more data, perform better analysis, use new collaboration tools, and allow for creative thinking around product delivery and design.
- **Data ecosystems:** Access to data and data sets allowing firms and individuals to gain greater insights into their societies and local economies. This requires better data collection and analysis to provide insights into the design of public services or new products. TfL's unified application programming interface (API) is a good example, providing accessible, understandable, and quality assured data about London's transport network. This has proved crucial in designing transport apps and providing services in stations.
- **Digital infrastructure:** The physical infrastructure that creates the digital world. Greater speeds and higher levels of access improves the ability of populations to access digital tools. Weak infrastructure can have highly localised effects.
- **Finance and investment:** The availability of loans and capital for firms based in a particular industry or location. A higher availability of investment means more ideas getting funded, boosting the attractiveness of a location to begin a business.
- **Research and innovation:** The funding available for, and structure of investment into, longer-term innovation. This is the money and activity directed towards new ideas and process improvement as well as the creation of new products, rather than just on immediate or operational costs. Increasing the knowledge economy also underpins longer-term investments such as in research facilities and academic institutions that will become long-term assets for the local economy.
- **Trade support:** Guidance and information that allows small and medium-sized enterprises (SMEs) and other businesses to navigate the often-complex requirements of exporting products to new markets. Reducing barriers is vital to increasing the overall markets that firms can tap into.



However, on the whole, collaboration needs to be deepened to drive the scale and pace of change required. In every Digital Dialogue, participants highlighted the need for greater collaboration as their number one priority for action.

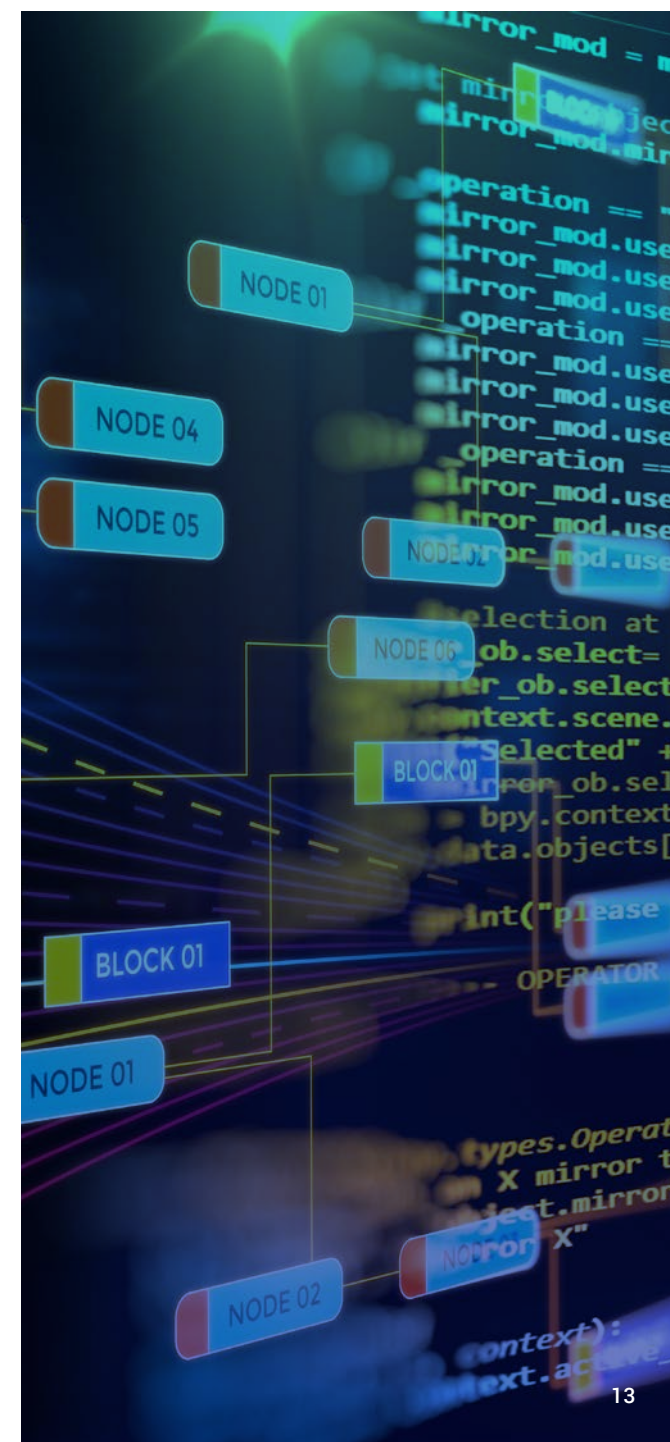
Strong technology ecosystems can be powerful engines for localised innovation and growth. The desire and willingness to collaborate is positive, however, effective collaboration and coordination needs to be enabled with organisational support. Ecosystems, once seeded, can be self-generating and self-resourcing, however, in the initial stages they require additional organisational and coordinating capacity.


This can be achieved by investing in organisations and people at the local level tasked with the job of building open networks to share knowledge, expertise, and to collaborate around shared objectives. Tech City in London demonstrates how relatively modest investments in people and resources can have a significant multiplier effect by enabling 'collisions and spill-overs' of ideas, knowledge and expertise.

There is now a **good body of academic analysis** of Tech City and other clusters that nations and regions can use to create their own 'bottom-up' ecosystem development approach. In practice this may mean providing additional funding to organisations that already exist (such as existing tech cluster organisations) or resourcing a new 'network of networks' that brings together organisations already active at the local level. The approach should be bottom-up – building on the people, resources and knowledge that already exist in the nation or region.

The reason for strengthening place-based coordination right across the digital tech sector is two-fold:

Firstly, both the Scottish Government's **Logan Review** and Welsh Government's **Brown Review** concluded that strong digital ecosystems are essential for generating a steady stream of viable start and scale-ups. These companies lead to resilient and well-paying jobs flowing through to higher tax takes available for public services.





The second reason is far wider than the tech sector itself. It is about supporting the economy as a whole to digitise. Despite the benefits in terms of productivity and cash flow, barriers remain around the confidence, desire, and capacity of SMEs to pursue digitisation. Strong place-based collaboration and coordination infrastructure can help overcome these. We should build networks of knowledge, experience, skills, and expertise – linking shared ambition and aspiration and bringing together SMEs and enterprises to share best practice, and link local supply chains.

The other prism through which to view collaboration is by linking nations and regions together across the UK as well as internationally. This was a constant theme in the Digital Dialogues where participants sought best practice and wanted to share their own stories and experiences with each other. Of course, to do this they need to understand how they compare on objective measures to other areas.

Recommendation 1: Improve Collaboration and Coordination

- a. **Create a framework to understand and measure the depth of local digital capital in each area.** techUK will work with our members, stakeholders, and participants from the Digital Dialogues to develop this framework.
- b. **Fund small teams, (potentially within existing Tech Cluster organisations), to facilitate open collaboration and coordination across all organisations involved in building local digital capital.** This could be funded through the UK Prosperity Fund or Levelling-Up Fund.
- c. **Establish a Chief Digital Officer forum for nations and regions to support national collaboration.** This forum should have a central secretariat but have a revolving chair between different nations and Combined Authorities.

Digital skills

A rapidly digitising economy needs a range of digital skills. Throughout the pandemic the demand for digital skills has remained high across all sectors as employers have come to view digitisation as critical to their survival. The skills demanded from employers range from basic digital skills to advanced technical roles. **Recent research suggests that more than 80% of all current job vacancies require some form of digital skills.** Meanwhile, the number of advertised tech job vacancies increased by 36% between June and August 2020. Only the healthcare sector advertised more jobs in this period.

The increased importance of digital skills has not been lost on job seekers. **According to a recent techUK survey**, more than 80% of people believe that digital skills are becoming much more important in the workplace and more than 50% said they would be interested in acquiring new digital skills. Meanwhile, the **Institute of Coding has seen a ten-fold increase in people applying to undertake online courses** with over 400,000 learners signed up for digital skills courses since its launch. This moment should be used as an opportunity to drive a significant shift in the UK's digital skills base.

The urgent need to deepen the digital skills base was highlighted at every Digital Dialogue event that we held across the country. It was seen as critical for national and regional economic recovery and inclusive growth. Concerns focused on the short-term challenge of addressing rising unemployment, but also the long-term structural challenge of automation which will be key to levelling-up the economy.



PRIORITY NUMBER ONE FOR COMPANIES HERE IS TALENT... NOT JUST ENTRY LEVEL, COMPANIES STRUGGLE FOR MORE EXPERIENCED LEVELS OF TECH – 5+ YEARS OF EXPERIENCE – WE NEED TO TARGET/KEEP/ATTRACT MORE EXPERIENCED PEOPLE INTO MANCHESTER.

Northwest Digital Dialogue Participant

EVERYONE UNDERSTANDS DEGREES, BUT ONCE YOU GET TO THE SUB-DEGREE LEVEL, EMPLOYERS DO NOT UNDERSTAND IT. THIS IS THE KIND OF TRAINING PEOPLE WANT – SMALLER, BITE-SIZED – BUT IT IS DIFFICULT FOR EMPLOYERS TO FEEL ASSURED ABOUT THE QUALITY OF THE LEARNING AT THAT LEVEL.

Yorkshire and Humberside Digital Dialogue Participant

Responding to the impact of COVID-19 – the short-term challenge

Every Digital Dialogue focused on the need to address the short-term challenge of helping people of working age to retrain and reskill for digital roles. In particular, there were calls for more short modular courses that provide a practical, affordable, and accessible route into digital roles for people from more diverse backgrounds. These courses need to be accredited as relevant and valuable by employers. They also need to be integrated into well sign-posted pathways so that prospective learners can understand what courses might be right for them and how they can progress into employment. To achieve this, there is a growing consensus about the need for **greater collaboration between traditional and new education providers and employers**, such as we have seen in degree apprenticeships.

More needs to be done to bring initiatives and funding streams together over the next 12 months to make a tangible difference to people's lives. Initiatives such as the **Skills Toolkit**, which provides access to over 70 online courses, and the Digital Bootcamps pilots in Manchester and the West Midlands are helping to get learners started on the journey into new digital careers, while the National Skills Fund can provide the funding stream needed to scale these initiatives up. Meanwhile, delivery and coordination should be supported through Local Digital Skills Partnerships, several of which are showing progress in enabling cooperation and coordination at the local level between the public and private sector.

Meanwhile, the review of the Apprenticeship Levy should be used as an opportunity to develop it into a broader skills and training levy that provides greater flexibility for firms that want to train and upskill their existing workforce. The rate of transferable funds should be increased from 25% to 80% to allow high-quality training to cascade down through supply chains. The lifetime of the funds should also be increased from two to five years.



IF LOOKING AT TALENT, WE HAVE FANTASTIC LOCAL UNIVERSITIES AND NEED TO BUILD A PIPELINE FOR FUTURE CAPABILITIES – HOW ARE WE INFORMING LOCAL UNIVERSITIES ABOUT WHAT KIND OF TALENT WE NEED, HOW ARE WE BUILDING THOSE BRIDGES?

North East Digital Dialogue Participant



Preparing for the impact of automation – the long-term challenge

There are also huge structural shifts taking place in the global labour market and, in particular, the impact of automation. Children in primary school today will enter a labour market that is likely to have been significantly reshaped by automation. The long-term challenge of levelling-up can only be met if we educate the children of today for the jobs of tomorrow. There is a need for concerted action to understand how we can best equip the next generation for meaningful work and to identify and implement the changes required in traditional and non-traditional educational settings. It is vital that this issue is not lost as we deal with the immediate impacts of COVID-19.

Recommendation 2: Build 21st Century Skills

- a. **The Department for Education and the Treasury should review the Apprenticeship Levy with the aim of re-branding it to a 'Skills Levy' and expanding its role so that employers can use the funds more flexibly for skills and re-training.** This has the potential to unlock more funds to be spent on training through supply chains.
- b. **Government, industry and education providers should work together to expand short modular digital skills courses — in particular those accredited by industry and employers — to open up more accessible and affordable pathways for people looking to retrain for digital roles.** More modular learning can drive life-long skill building and offer easier avenues for people transitioning between sectors. techUK proposes a solution that will help individuals identify effective digital learning pathways. The Government is uniquely positioned to create a skills platform to bring together citizens interested in entering the digital workforce, the training material, and available roles. This would not only support retraining but would map out personal and inclusive learning journeys.
- c. **Government should launch an independent commission on the impact of automation and emerging technologies on the UK's nations and regions, and the implications for education and training provision so that we can adequately prepare our workforce.** This should harness national and international expertise.

Digital Adoption

Across all seven Digital Dialogues we heard that SMEs are ready to transform their businesses using new technologies but are struggling to invest due to severe cash constraints.

Research commissioned by techUK member Sage supports this. It found over two-thirds (67%) of SMEs wanted to invest further in technology and nearly three-quarters (71%) of SMEs said that investment in digital technologies will help boost their profitability and create more jobs.

The research found that if SMEs were able to widely adopt digital technologies, an additional £145 billion in economic output resulting from productivity increases would be gained, along with £325 billion in additional SME revenue, and support for 2.7 million jobs across the UK.

However, despite the desire to invest, many SMEs are facing serious cash constraints as they battle the impacts of the pandemic. Over three-quarters said they are unable to deliver the necessary investment in technology due to financial constraints. Without support, this risks becoming a long-term problem as businesses managing increased debt burdens put off investment decisions.

On average, SMEs believe they need to invest around £10,000 into technology to best position themselves for recovery and growth. Micro-businesses (<10 employees) believe they need to invest £5,000 – £9,000 on average, and larger SMEs (>10 employees) are most likely to need to invest upwards of £10,000.



THE 'DIGITAL SKIN' OF OUR WORKFORCE HAS RESPONDED WELL, BUT WHAT THEY'VE DONE IS JUST USE SKYPE OR TEAMS BUT DON'T NECESSARILY CHANGE HOW THEY ACTUALLY WORK TO BETTER INTEGRATE DIGITAL – WE NEED TO DO THINGS DIFFERENTLY AND WORK TO EMBED THAT LEVEL OF CHANGE.

North West Digital Dialogue Participant

During the pandemic, **the most digitally capable firms have been able to adapt faster to changing market conditions**, seeing revenue growth eight times faster than the least digitally able firms.

In many cases the ability to quickly leverage technology has meant the difference between turning a profit or not. For example, one **large retailer saw its monthly sales fall** from £650 million per month to zero because it did not have an online store when restrictions hit.

Supporting business to uptake new technologies will not only help them adapt to a socially distanced economy but also provide further benefits by preparing businesses to take advantage of changing consumer habits that are likely to continue after the pandemic is over.

We must reorientate our existing business support to help businesses, and in particular SMEs, adopt innovation and productivity-boosting technologies.

Recommendation 3: Drive Digital Adoption

a. Deliver digital adoption funding for SMEs

Utilise funding available through the Government's Back on Track scheme, the £50.7 million announced by the Department for Business, Energy & Industrial Strategy (BEIS) in the 2020 Spending Review for business support and the £220 million offered for pilot programmes through the UK Shared Prosperity Fund (UKSPF) to deliver funding to support digital adoption across the UK.

This could take the form of UK wide vouchers or targeted local schemes to improve uptake of key technologies such as cloud computing, CRM, accounting, and team management software.

The success of the funding should be measured against boosting business revenue, growth, and development. By delivering tailored local schemes, backed by national funding, we can target the hardest-to-reach businesses which have often eluded large nationally delivered schemes.



b. Create a Chief Digital Officer credit

Simply digitising processes that were once face to face is not enough to increase business performance. Combining technologies and thinking innovatively is key. The **Lloyds 2018 Business Digital Index** analysis found that small businesses who were using a combination of cloud-based IT systems, online accounting software and digital training tools had £103,000 higher annual turnover than those using none. In the 2019 Index this has risen to £262,000.

Supporting uptake, improving leadership and encouraging experimentation and digital solutions is vital to boosting productivity; however, this requires confidence, knowledge, and an effective market for business transformation. Something which **research from Be the Business** has found that we lack.

Schemes such as Digital Boost and advice from organisations such as Be the Business can open the door to new technologies. However, to transform a business from the inside out, many will need tailored support on the ground.

Through a CDO credit we can reduce the barriers to seeking professional help and grow the market in business transformation services to help business leaders use a combination of technology solutions to boost productivity.

To make the credit most effective, the services which it can be claimed against will need to be assessed by Government to ensure high quality. Government could also increase choice among digital services by making it easier to swap providers, with regulatory changes similar to what has been achieved through open banking and the energy and telecoms markets.

This should be UK-wide scheme, however, it will be of great use to local authorities, local enterprise partnerships (LEPs) and devolved governments when putting together packages of available support for businesses.



Data Ecosystems

Unlocking the full economic and societal power of data securely and effectively can enable improved outcomes while affording the opportunity for partners to collaborate and innovate to solve common national, regional, or local challenges.

During the pandemic, data played a vital role in the UK's understanding of and response to the virus at both the national and regional level. As a result, there is an increased public understanding and awareness of the importance of data. This provides a basis on which we can build a data-driven future. We must get this right to ensure there is public trust in the use of data. That means ensuring the data needed is available, accessible, and interoperable, can be trusted and is of the right quality.

Data also has a vital role in how we build the future we need. Government's recent National Data Strategy is an important step forward. It provides a framework for how the UK can become a data-driven nation. However, the National Data Strategy does not consider in explicit detail the role of data in supporting the levelling-up agenda or whether the data capability, capacity, and capital needed at a regional level may be different. This must be addressed.



IT'S STILL A REAL CHALLENGE... MAKING SURE WE HAVE ACCESS TO THE RIGHT DATA, FOR THE RIGHT PEOPLE, IN THE RIGHT WAY.

Northern Ireland Digital Dialogue Participant



WE'VE FOUND RATHER THAN TRADITIONAL METHODS SELLING PRIVATE SECTOR DATA OR GOVERNMENT USING OWN DATA, COMBINING THEM ALL TOGETHER HAS BEEN VERY POWERFUL – WE'VE DONE THAT NATIONALLY, BUT NEVER AT A LOCAL LEVEL; THAT'S SOMETHING WE'D LIKE TO EXPLORE.

North West Digital Dialogue Participant

THERE ARE LOTS OF INITIATIVES ACROSS THE REGION COLLECTING A LOT OF DATA – GREEN ECONOMY, TRANSPORT, AND HEALTH – AND THIS IS AN UNTAPPED RESOURCE. WE NEED TO MAKE THE DATA AVAILABLE TO LET PEOPLE THINK ABOUT HOW TO SOLVE PROBLEMS AND CREATE NEW BUSINESSES.

Yorkshire and Humberside Digital Dialogue Participant

To get this right at a regional level, we must ensure data is available and accessible. techUK has **long called for regions** to open up, catalogue and make accessible data for all actors to utilise. Access to critical data sets can spur economic innovation and help support outcomes in places, be they public service delivery or wider societal goals.

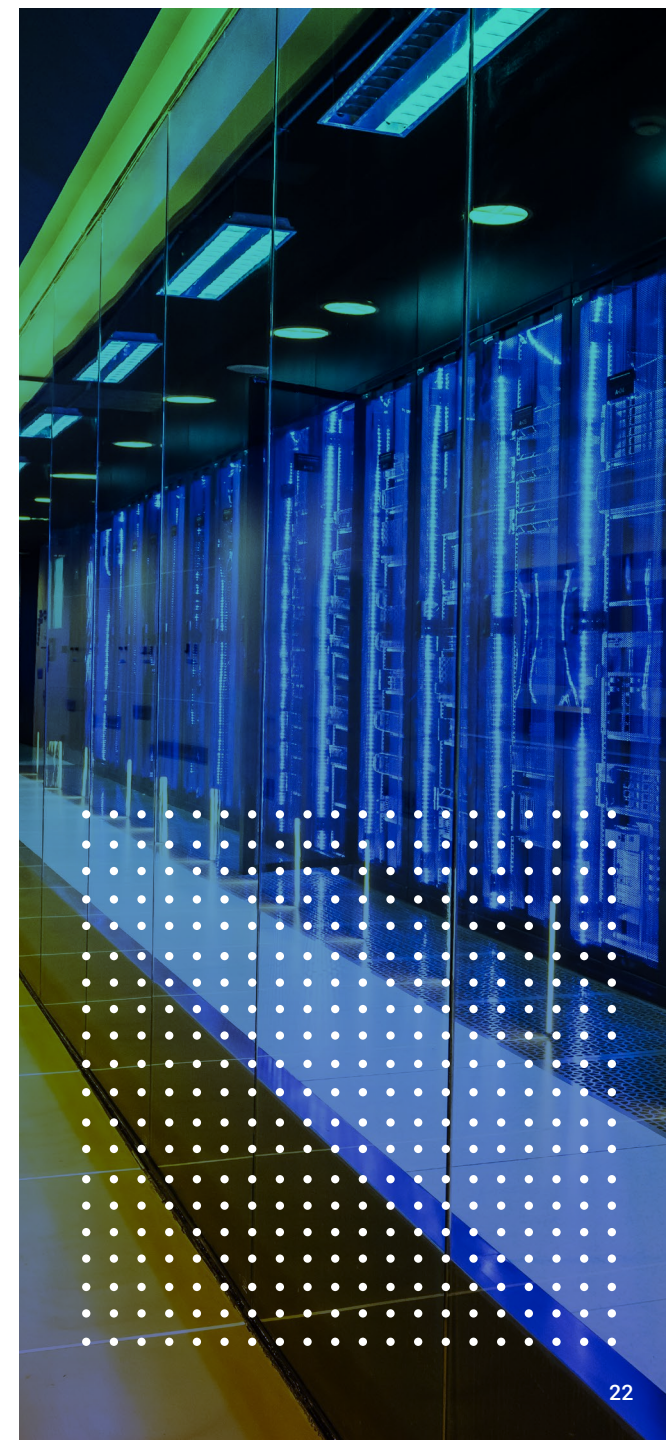
Many nations and regions have taken up this call. There is an **increasingly mature set of Offices for Data Analytics in the public sector** from North Yorkshire to Avon & Somerset, as well as place-based data stores. Initiatives such as the Leeds Data Mill and the North of Tyne's investment with the National Innovation Centre for Data have helped local data ecosystems focused on supporting finding data-driven solutions to local issues to flourish and thrive. These are incredibly welcome developments but we need to build on this.

Data only becomes useful when it can be turned into insights and information. The adage of good data in and good data out is even more relevant today where decision-making is enabled by data-driven technologies such as artificial intelligence (AI). If data is used to make decisions that impact people's lives, the data must account for historical biases – such as unequal investment and economic growth in regions – within existing data sets.

Data will only be truly transformative if it can be used to find answers to challenges that are appropriate at a regional level.

COVID-19 has highlighted the importance of local decision-making and the need for local capabilities. Recognising and building on this will be vital to ensuring local authorities can deliver digital solutions that will not only create efficiency gains, but also improve local public service outcomes and create places where citizens want to live and thrive.

Key to achieving this is to encourage, build and create data ecosystems that span all actors within a place. The Open Data Institute (ODI) says that a 'data ecosystem consists of data infrastructure, and the people, communities and organisations that benefit from the value created by it.' It encompasses everything from data sharing and improved outcomes to open data platforms which help companies deliver solutions.

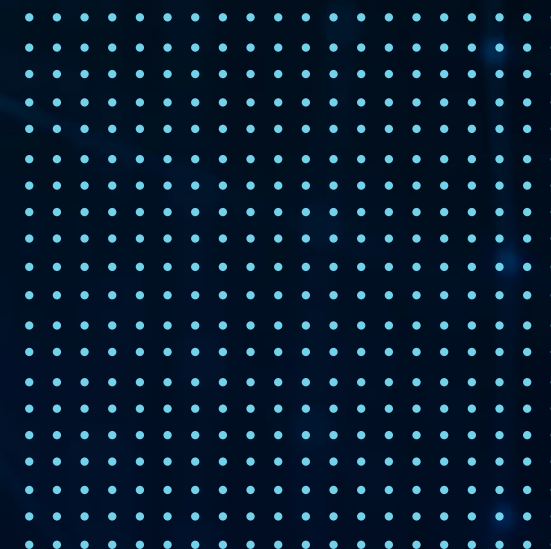


We need to bring people together at a local level who want or need answers with the data to work together and discover ways for data to enable solutions.

There will be no standard data ecosystem approach that will work across the UK, but we should identify and highlight best practice where data ecosystems work well and what makes them successful. This could help other regions create and build the data capability and capacity they need to unlock data to support local decision-making.

Recommendation 4: Strengthen Data Ecosystems

- a. **Continue support for the MHCLG Local Digital Collaboration Unit and Local Digital Fund.**
In the Spending Review HM Treasury should ensure funds are available to MHCLG so they can at least match the £7.5 million in funding offered through the fund for 2020/21 and 2021/22. MCHLG should, however, build on the benefits of the fund by increasing early market engagement. This could be supported by seeking to announce additional funding for 2020/21 and 2021/22 as soon as possible.
- b. **In the next stage of the National Data Strategy, the Government should undertake an analysis of regional data ecosystems to identify how the Strategy can strengthen them.**
This will likely include continuing funding the work of the ODI at the local level.



Digital Infrastructure

High-quality, high-speed, and resilient internet connections are essential for participating and thriving in our digitising society and economy.

Generally, the UK's digital infrastructure held up well to the shift to home working, the increase in video calls to friends and family, and online learning. This was because of the continued investment and the hard work of **telecoms employees who were rightly recognised** in the Queen's Honours List.

However, the pandemic has shone an even brighter light on areas that need improvement. For those who lack access to high-quality connectivity, the burden of lockdowns has been far greater and the long-term prosperity of our nations and regions depends on their level of digital infrastructure – infrastructure that is not just good enough to meet today's needs but of higher capacity and quality than what we have in the UK currently.



CONNECTIVITY – WE WILL NEVER HAVE A UNIVERSAL OPPORTUNITY UNLESS WE HAVE UNIVERSAL AVAILABILITY.

Wales Digital Dialogue Participant



START THINKING OF DIGITAL CONNECTIVITY AS A HUMAN RIGHT BECAUSE I THINK IT IS BECOMING THAT FUNDAMENTAL...AND I WOULD LIKE GREATER MANCHESTER WHEN I THINK OF WHAT BUILD BACK BETTER MEANS, TO BE A FULLY ONLINE CITY-REGION.

Mayor Andy Burnham, North West Digital Dialogue

Throughout our Digital Dialogues, it was clear that to ensure that we can all make maximum use of digital connectivity, investment is required in all aspects of digital infrastructure, from world-class data centres to future-proof full fibre and innovative 5G networks. At the time of the Dialogues, the Government had set targets for gigabit coverage by 2025 and for the majority of the population to have 5G services by 2027. These are ambitious infrastructure projects with the vast majority of the capital – around £25 billion – being invested by the private sector.

Barclays Bank has stated that **5G could supercharge the economy by £15.7 billion by 2025**. This growth is spread across the country with increased business revenue of £1.4 billion in the North West and £1.3 billion in the East of England. **A recent report has outlined where 5G can help bridge the inequality of infrastructure access in our rural communities**, transforming our agricultural sector, increasing social cohesion, and delivering environmental benefits.

Likewise, it has been estimated that a **nationwide full fibre deployment could add £59 billion to the UK economy by 2025**, with Scotland benefiting from a £5 billion boost and the South West by £4.2 billion.

These networks need to be deployed at pace. In full fibre we are making up ground, but 5G offers us an economic comparative advantage if we can accelerate our rollout. The **Government believes that not acting to ensure UK leadership in 5G** would result in losing the opportunity to create £173 billion of incremental GDP over 10 years, 2020 to 2030.

It is, therefore, disappointing to see the Government water down on its universal gigabit coverage target to one of at least 85% in the Spending Review. It is not that industry is not meeting its obligations – it expects to reach 80% by that date but the Government is now only allocating £1.2 billion rather than £5 billion in public subsidy to 2025, slowing progress to those households and businesses that need it most.

There may be potential for nations and regions to access funds for digital infrastructure via the newly announced UK Infrastructure Bank to make up for this shortfall.



TAKE THE HIGHLANDS AND ISLANDS, PEOPLE HAVE TO TRAVEL TO CITIES TO GET A TECH JOB, BUT IF WE IMPROVE CONNECTIVITY AND CHANGES TO REMOTE WORKING, THOSE PEOPLE IN THOSE AREAS WILL BE ABLE TO WORK FOR LARGE ORGANISATIONS WITHOUT LEAVING THEIR ISLAND. THERE IS A HUGE OPPORTUNITY ONCE THIS GETS ADDRESSED.

Scotland Digital Dialogue Participant

CONNECTIVITY IS A FUNDAMENTAL DIVIDE IN SOCIETY IF NOT ADDRESSED... GOVERNMENT NEEDS TO DO MORE TO CONNECT PARTS OF THE COUNTRY THAT ARE NOT ECONOMICALLY VIABLE FOR BROADBAND PROVIDERS AND PLANNING RESTRICTIONS NEED TO CHANGE.

West Midlands Digital Dialogue Participant

Data centres represent the physical manifestation of our digital economy. They enable supermarkets to resupply; retailers and banks to process financial payments; delivery companies to manage logistics and government to deliver services. Each new data centre contributes between £397 million and £436 million gross value added (GVA) per year to the UK economy, while the contribution of each existing data centre is estimated to lie between £291 million and £320 million per annum.

The UK has strong digital foundations, but we cannot be complacent if we want every area to reach its full potential. In several of our nations and regions reports, we highlight what more actors in these places can do to incentivise investment in digital infrastructure. However, as a reserved area of policy, albeit one where investment is still made by nations and regions, Westminster holds the key policy levers.

Recommendation 5: Deliver Digital Infrastructure

- a. **Keep to the Government's manifesto commitment of universal gigabit connectivity by 2025 to ensure that businesses and families can take advantage of the technologies this enables.** Bring forward the promised £5 billion in subsidy for the hardest to reach areas which alongside private sector investment will ensure as many premises as possible can benefit from world-class connectivity.
- b. **Bring forward a full package of barrier busting measures** - around business rates, planning reform, access to public sector land, and spectrum defragmentation - for both fixed gigabit broadband and 5G. Ring-fence the 'Barrier Busting' team's funding in DCMS and continue to engage with nations and regions and industry on best practice.
- c. **Undertake a competitiveness study into the UK data centre market to grow our world leading status as an international hub for the data economy.** This needs to cover talent, energy costs, and the regulatory framework.



Finance and investment

The UK has done extraordinarily well when it comes to investment in the tech sector. In 2019 the UK received £10.1 billion of investment from venture capital (VC) into early- through to late-stage companies. This put the UK third in the world for VC investment, raising more than Germany and France combined and falling only behind the United States and China.

2019 also saw investment outside of London and other major tech hubs in the Golden Triangle increase. Five UK cities are now ranked within Europe's top 20 for tech investment – London, Cambridge, Oxford, Manchester and Bristol. Manchester in particular has seen increasing investment, up 277% from 2018. Growth was also seen in Bristol with the city benefiting from a strong local partnership and national investment.

However, funding remains a problem for growing clusters. **Tech Nation found that tech communities in key growth areas** such as Belfast, Edinburgh, Southampton, Glasgow, and Newport all reported access to funding as their number one challenge. This was echoed in our Dialogues with participants in Scotland, the North East, and Yorkshire and Humberside identifying finance and investment as key challenges.

London still drives investment in the UK, and there is a risk that, because of COVID-19, investors stick to familiar territory. In 2019 London received £6.8 billion of the UK's £10.1 billion share of VC investment, about 68%. However, from January to June 2020 as the COVID-19 pandemic began to sweep over the globe, **London's share rose to 76% of all VC investment** in the UK.

We have seen this trend towards London and the South East as well in the **Government's Future Fund** where 73% of the £770 million delivered through the scheme by October 2020 had been received by companies based in London and the South East.

As we recover from the economic impact of COVID-19, better access to finance and investment will be vital to driving up new company starts and supporting founders to launch innovative start-ups. However, currently, investment is highly skewed towards London and the South East.



WE NEED TO SERIOUSLY LOOK AT HOW INVESTMENT IS BALANCED ACROSS THE COUNTRY. PERHAPS ONE GOOD THING THAT COMES OUT OF THIS CRISIS IS THAT THERE IS A GROWING NOTION THAT WE'RE ALL IN THIS TOGETHER AND WE NEED TO ENSURE THE LEVELLING-UP AGENDA.

North East Digital Dialogue Participant

Correcting this must be a core priority. The Scottish Government has identified the importance of attracting funding to growth regions in the Logan Review of the Scottish Technology Ecosystem and has **acted quickly to announce a £4 million investment into five technology hubs to provide a focal point to support least 300 start-ups by 2025.**

It is critical to capitalise on the regional capabilities that exist outside of London and take steps to ensure that recovery does not produce more regional inequality.

Recommendation 6: Strengthen Finance and Investment

- a. **Create a UK funding strategy with the explicit aim to support growth outside London and the South East.** The Treasury and BEIS should work with the devolved governments to review existing funding support and aim to expand and build upon the roles of the British Business Bank, Scottish National Investment Bank, Development Bank of Wales, and Invest NI to ensure there is sufficient capital liquidity to drive investment into the ecosystems who need it.
- b. **Create a one-stop shop of information for UK start-ups and firms seeking investment.** According to Nesta and BEIS, there are roughly 560 accelerators, incubators, start-up hubs, and online resources available from public bodies and the private sector. However, there is little sign-posting to help entrepreneurs identify the right support for them. A one-stop shop of support would encourage aspiring entrepreneurs to take advantage of the resources available. Interactions with this one-stop shop could also provide live data on the types of businesses seeking support and their needs, helping to better target future interventions. It could also incorporate a self-diagnostic tool to tailor advice to the individual user, like the self-diagnostic tool used to provide advice on the end of the transition period on [gov.uk/transition](https://www.gov.uk/transition).
- c. **Incentivise investors to discover opportunities across the UK.** Much of London's success relies on the network effects and serendipitous interactions that occur in a global capital. Government could use its convening power and networks to create prestigious trade shows bringing investors interested in the UK's strong international brand to locations and hubs outside the capital. Modelled on the success of the GREAT campaign, regular roadshows could do much to increase awareness of the growth opportunities across the UK's regions and nations.



Research and Innovation

Currently there is a misalignment between public and private investment in research in the UK, with London receiving large amounts of public funding while areas such as the West Midlands receive significantly less publicly-funded R&D support, despite having a strong growth in private investment.

Public R&D support can help increase private investment and produce significant returns. **There is often a £2 return of private investment in R&D for every £1 of public money invested**, while also having a number of long-term benefits by building up research institutions and increasing new company starts in the areas where that investment is targeted.

Nesta's report, **The Missing £4 Billion**, estimates that due to the current imbalance between public and private R&D investment, parts of the UK have missed out in government R&D funding of up to £4 billion each year. If better allocated, these funds could have leveraged a further £8 billion from the private sector into local ecosystems.

R&D and innovation funding has been used effectively in Germany and France to support private R&D investments in various regions meaning there is a much more equitable distribution of R&D intensity and innovation activity than in the UK. Both countries also have lower levels of regional inequality.

The Government should, therefore, see the R&D and innovation strategy as central to rebalancing the UK economy and seek to build better partnerships between public funding support and private enterprise.

One participant in the Scotland Digital Dialogue put it this way, 'partnerships are so important – we need to collaborate more efficiently and effectively, especially on R&D.'

There is an opportunity for change. Across all the nations and regions in which we conducted Dialogues, there is at least one Russell Group university as well as an additional network of other universities, technical colleagues, and research centers.



R&D FUNDING IS TOO LONDON-CENTRIC. THE UNIVERSITY OF EDINBURGH RUNS EVENTS TO TRY TO BRING IN INVESTORS TO SCOTLAND, BUT IT IS HARD, AND THE VAST MAJORITY OF INVESTORS DO NOT THINK OF SCOTLAND. WE NEED TO DO MORE TO PROMOTE AND BRING THEM HERE.

Scotland Digital Dialogue Participant

The UK has an excellent and well spread-out knowledge infrastructure, however, for many regions it does not seem that this infrastructure is effectively leveraged to build partnerships and collaboration to support local growth.

If used effectively, universities could act as regional innovation/tech hubs and become key lodestones to drive the development of local digital economies.

Recommendation 7: Harness Research & Innovation

- a. **The UK Government should better align R&D outcomes with economic growth.** It must ensure metrics such as private investment in locations near research institutes and universities; patent citations; product launches; and the sustainable growth of new companies in the area are assessed as part of the R&D strategy. Central Government should work closely with devolved governments, city mayors, and local authorities to align spend with local growth strategies so that funding is effectively targeted.
- b. **The Government should further its focus on places by investing in innovation infrastructure across the country.** Government should incentivise the piloting of applied research departments in universities. Universities should also be encouraged and supported to increase outreach to business with an emphasis on the development and commercialisation of research as well as providing training and mentorship opportunities. The Government could further build on the focus on places by increasing the £120 million commitment made in the 2020 budget to deliver additional Institutes of Technology above the eight already committed.
- c. **Identify key clusters and develop investment strategies with devolved regional and local government partners to build centres of excellence.** The world's first cluster of compound semiconductors is in South Wales. Compound semiconductors are critical to 5G uptake and developing a leadership position in Open RAN technologies. **UK leadership in 5G could result in an opportunity cost of £173 billion of gross domestic product (GDP) over 10 years between 2020 and 2030.** Supporting clusters like this not only has benefits for local growth but also strategic benefits for the UK by developing world-leading industries based on strategic technologies. Similar clusters already exist around the UK, for example, the automated vehicles and battery tech in the West Midlands and augmented reality (AR) and virtual reality (VR) clusters in Dundee and Manchester.



Trade Support

The tech sector is a major contributor to UK trade. In 2018, the UK had a trade surplus of £10.25 billion in the trade of telecommunications, computer and information services, an increase of 35% since 2015.

However, the UK faces a critical juncture, having left the European Union (EU) and seeking to strike new trade agreements around the world. Businesses need to adapt to new trading rules to effectively manage supply chains and take advantage of new opportunities.

There is a challenge here. The UK's leading services centres like London, the South East, and the Central Belt of Scotland will be **better able to take advantage of the new trade deals** than the nations and regions that are highly reliant on European trade such as Wales, Northern Ireland, and the North East of England. **SMEs are also less likely to take advantage of the preferential terms included in free trade agreements than larger businesses**, meaning that they could see opportunities reduced.

However, if executed properly, there are enormous opportunities. We have already **seen an increase in SMEs using digital channels to engage in international trade**, increasing from 14% to 19% between 2018 and 2019. Also, as a result of COVID-19, the **global e-commerce market is expanding**, opening up new opportunities for UK firms to sell products and services to a global consumer base.

Using online platforms is one of the most effective ways to boost international trade and engage in this growing market. Data provided by eBay, showed from 2018 – 2019, almost two-thirds (64%) of eBay's UK-based sellers, many of whom are SMEs, exported products internationally with export sales growing by more than 25% in the past five years.

Top destinations for sellers were EU Member States and the U.S. and Australia, both on the UK's priority list for free trade agreements (FTAs).



AS A RESULT OF
COVID-19, WE HAVE
MANY EXAMPLES OF
HOW BUSINESSES HAVE
ADOPTED DIGITAL.
WE CAN SHARE THEIR
EXPERIENCES TO
MOTIVATE AND SHOW
OTHER BUSINESSES HOW
THIS CAN BE ACHIEVED.

Yorkshire and Humberside Digital Dialogue Participant

Creating awareness of new trading tools and ensuring clear guidance for potential exports will support the development of usable trade facilitation services and platforms, and encourage uptake.

Partnerships between all levels of Government are all vital in this process. While Central Government has a key role in negotiating free trade agreements, devolved governments, regional mayors, and local authorities must ensure businesses are aware of new opportunities and the tools available.

Recommendation 8: Secure Trade Support

- a. **Central Government should seek to ensure that all future free trade agreements contain SME chapters that commit the UK and its trading partners to transparency and explainability over new terms of trade.** Both the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) Agreement and the EU-Japan Economic Partnership Agreement (EPA) provide very useful examples of public websites collating information on these agreements, for example, chapter summaries, an SME contact point, and online query tools, in an accessible manner. These are examples the Government should seek to follow.
- b. **Central Government should target support to regions and nations most likely to need extra help to adapt to new trading conditions.** One method of doing this would be to develop regional export corridors, for example, the UK-India Tech partnership that links West Midlands and Northern Powerhouse with specific regions in India, based on sector specialisations.
- c. **Devolved governments, regional mayors and local authorities should work together to strengthen the role of export advocates and deliver events, expos and workshops to upskill SMEs in international trade.** For example, by expanding the Export Champions initiative across other regions and beefing up the role of the Export Academy to provide the practical support and know-how for companies that are looking to expand internationally, particularly SMEs.

