

## RSE ROUNDTABLE ON UPDATING THE DIGITAL STRATEGY FOR SCOTLAND

In December 2020, the Royal Society of Edinburgh (RSE), Scotland's National Academy, hosted a roundtable with Scottish Government and the Convention of Scottish Local Authorities (COSLA) on their consultation on the Digital Strategy for Scotland. The roundtable brought together RSE Fellows, members of the Young Academy of Scotland and external stakeholders with a diverse range of relevant expertise and experience to contribute to the updating of the Digital Strategy. The discussion was focused, but not limited to, specific parts of the consultation document including *No One Left Behind*, *Services for All*, *Transforming Government*, *A Digital and Data Economy*, and *A Vibrant Tech Sector*. The discussion and this report represents the RSE's contribution to the consultation process and builds on existing RSE activity in this area, including our contribution to developing an AI Strategy for Scotland and to the Logan Report on the technological ecosystem.

The impact of the pandemic has shown the importance of the provision of broadband and digital skills to inclusion, as those from deprived backgrounds have suffered disproportionately as the nation switched to digital during the pandemic. Currently, there are 800,000 people in Scotland who are digital excluded and 20% with no or inadequate digital skills. Therefore, more needs to be done to ensure that all citizens are digitally connected and are supported in developing the skills they require to access and use digital technologies. While there is an immediate need to provide universal access to broadband along with requisite digital skills, the strategy must take a long term view to putting in place the infrastructure, investment and support that will be required to meet the needs and demands of Scotland's economy and society in twenty years' time.

Government and public services have all needed to adapt to the major challenges which the pandemic continues to pose. This has demonstrated the agility and speed at which digital methods can be adopted and deployed. Digital and data have the potential to transform how we 'do' government and provide public services. This is reliant on building high levels of public trust in the collection, use and storage of data. This will require the adoption of ethical standards and transparency through governance.

While businesses are facing major challenges from the pandemic, some have adapted to provide services digitally which has brought their products to a wider market. However, the biggest challenge for businesses will be overcoming the vast shortfall in revenue and there is a real possibility that a third of SMEs in Scotland may not reopen after the crisis. Coordinated support for SMEs will be necessary and looking ahead we must build on the uptake of digital methods by business through encouraging uptake of digital services by SMEs.

# Summary

The Logan Report provided a useful insight into the importance of software-enabled internet businesses in Scotland but does not provide the full picture of the technology ecosystem in Scotland. The recommendations presented in the report are supported, particularly around skills development and computing science teaching. However, more acknowledgment is needed of the role of colleges and universities in the provision of skills and reskilling. The value of the software sector to the Scottish economy is significant as illustrated by the report, but comparably we are not performing as well. Therefore, greater ambition is needed in improving business growth, skills development and in attracting businesses to Scotland, which should be matched by sustainable levels of investment.

## Introduction

- 1 The Royal Society of Edinburgh (RSE), Scotland's National Academy, was pleased to have the opportunity to host a roundtable discussion in December 2020 on the Scottish Government and the Convention of Scottish Local Authorities (COSLA) consultation to deliver a refreshed Digital Strategy for Scotland.<sup>1</sup>
- 2 The roundtable brought together around 25 participants, including RSE Fellows, members of the Young Academy of Scotland and representatives from across the public, private and third sectors, including those from the Scottish Government, COSLA and UK Government. The discussion focused on the following specific areas of the consultation: *No One Left Behind; Services for All and Transforming Government; A Digital and Data Economy; and A Vibrant Tech Sector*. Underpinning each area, participants highlighted the importance of the adoption of ethical standards and approaches to the use of data. The discussion was chaired by Dr Shonaig Macpherson CBE FRSE and held under Chatham House Rule.
- 3 This report summarises the discussion and represents the RSE's contribution to the consultation process. Unless specified, it does not represent the views of the RSE and nor has it been endorsed by the meeting participants. The RSE looks forward to continuing to engage with the Scottish Government and COSLA as the refreshed Digital Strategy is developed.

## Background

- 4 The roundtable builds on the increasing engagement that the RSE is leading on digital, artificial intelligence (AI) and data, and their impact on the Scottish economy and society. Over the past four years the RSE, through a partnership with Scotland IS, the Scottish Council for Development and Industry (SCDI) and BT Scotland, has contributed several reports on aspects of digital, with the latest exploring the need for a Scottish AI and Data Strategy.<sup>2</sup> Building on this, the RSE has engaged on the development of Scotland's Artificial Intelligence Strategy,<sup>3</sup> as well as on the recent report by Mark Logan on the Scottish Technological Ecosystem.<sup>4</sup> The RSE has previously undertaken major inquiries into digital participation<sup>5</sup> and digital infrastructure.<sup>6</sup>

## General Comments

- 5 The consultation comes at a critical time as the impact of the pandemic has led to the increased uptake and use of digital across the economy and society at an unprecedented rate. This has highlighted digital inequalities which must be addressed if the economy and society are to become more resilient in future. There is an opportunity to take advantage of the developments we have seen to improve digitalisation of public services, government and organisations, and to build digital skills. This requires coordinated effort and strong leadership to ensure that Scotland: has a future-proofed digital infrastructure; all citizens have both access to, and the necessary skills, to engage with digital; and there are ethical assurances in relation to the collection and use of data.

1 Renewing Scotland's full potential in a digital world: consultation <https://www.gov.scot/publications/renewing-scotlands-full-potential-digital-world/>

2 Scottish Council for Development and Industry, et al. 2019. 'World-Leading AI and Data Strategy for an Inclusive Scotland'. URL: <https://www.scdi.org.uk/policy/ai-and-data/>

3 The Royal Society of Edinburgh. 2020. 'Scotland's Artificial Intelligence Strategy'. URL: <https://www.rse.org.uk/advice-papers/scotlands-artificial-intelligence-strategy/>

4 The Royal Society of Edinburgh. 2020. 'Response to the Logan Report'. URL: <https://www.rse.org.uk/advice-papers/response-to-the-logan-report/>

5 Spreading the Benefits of Digital Participation, RSE, 2014 <https://www.rse.org.uk/inquiries/spreading-the-benefits-of-digital-participation/>

6 Digital Scotland, RSE, 2010 <https://www.rse.org.uk/inquiries/digital-scotland/>

**6** Our physical digital infrastructure is critical to our success as a digital nation. While, currently, the UK does have strong digital infrastructure, other OECD nations are upgrading fast and the UK is starting to fall behind, notably in our distribution of fibre connections.<sup>7</sup> While telecoms and digital infrastructure is reserved to the UK Government and investment in broadband is a matter for the telecoms industry, the Scottish Government needs to work with the UK Government and industry to improve infrastructure where possible. Ofcom, as the UK's communications regulator, has the important role of monitoring investment and measuring progress by government and industry. Ideas on how to improve the standard of infrastructure are listed in certain sections below. It will be increasingly important to ensure that all citizens have the means to access services digitally which will require investment in devices and learning for citizens.

## No One Left Behind

- 7** The growth and spread of digital across the economy means that digital inclusion is of crucial importance to social inclusion, wellbeing and reducing levels of poverty. The pandemic has illustrated the importance of digital skills and broadband access for work, social links and access to information for individuals, businesses and charities. However, those from deprived backgrounds have suffered disproportionately as the nation switched to digital when Covid-19 restrictions were introduced and organisations responded by moving services online. Currently, around 800,000 people are digitally excluded in Scotland,<sup>8</sup> with around 20% of adults having insufficient skills to effectively use digital in the home or workplace and almost 10% of adults having no digital skills whatsoever.<sup>9</sup>
- 8** Digital infrastructure is critical national infrastructure. It is crucial to improving digital inclusion and building economic and societal resilience post-Covid-19. While investment in infrastructure is urgently required to meet current digital demands, Scotland is starting to fall behind comparable similar sized nations as we are yet to achieve universal broadband coverage and have still not achieved full 4G coverage, which will soon become obsolete. While striving for universal superfast broadband through the Reaching
- 100% (R100) commitment is a noteworthy ambition, this will not be enough as the minimum connection speeds are increasingly inadequate for engagement with new digital services. There needs to be a broad and collective understanding of the strategic challenge of delivering affordable ultra-fast broadband (300mb/s-1gb/s) at a minimum and gigabit speed (>1gb/s) across Scotland, and its importance to inclusion and economic activity. Therefore, a digital infrastructure investment plan should be based on meeting the needs and demands of the economy in twenty years' time and not simply providing for what we currently need in 2020. This strategic thinking requires strong leadership from parliamentarians, government, business and third sector leaders. If we fail to do so, then we are susceptible to the same mistakes of twenty years before. A first step would be delivering 5G rollout to all our major cities and expanding to rural towns and communities.
- 9** Improving digital inclusion relies on government, institutions, business and charities working together. There are encouraging examples of initiatives and partnerships which have improved inclusion. Notably, initiatives such as Connecting Scotland, supported by the Scottish Government and managed by the Scottish Council for Voluntary Organisations, has worked with local authorities, charities and social enterprises to improve digital inclusion.<sup>10</sup> The initiative has been successful in providing the necessary equipment to develop skills and should be expanded. However, ongoing support will be required to ensure people have the skills to be able to use hardware, software and apps to access services and participate in the economy,
- 10** Interventions are needed to develop the skills of those furthest from the labour market. Initiatives and support should be structured on providing an understanding around the importance of digital skills and inclusion to encourage people to engage and build their skills. Developing support will rely heavily on strong collaboration across government and between government and other public, private and third sector partners who work with those furthest from the labour market. Initiatives should also recognise the prevalence of the smartphone in deprived communities and services should be designed with the end users' preferred mode of access in mind, with citizen informed design processes.

<sup>7</sup> OECD. 2020. 'Fixed and Mobile Broadband Connection Statistics'. URL: <https://www.oecd.org/sti/broadband/broadband-statistics/>

<sup>8</sup> An update on No One Left Behind, SCDI, April 2020 <https://www.scotlandis.com/blog/we-asked-you-answered-thank-you/>

<sup>9</sup> Self-isolation, social distancing and digital inclusion, SCVO, March 2020 <https://scvo.org/p/36063/2020/03/17/self-isolation-social-distancing-and-digital-inclusion/>

<sup>10</sup> Scottish Council for Voluntary Organisations. [www.Connecting.scot](http://www.Connecting.scot)

- 11** Interventions to improve inclusion and digital skills within nurseries and schools are required to ensure young people from the earliest ages can develop an understanding of the digital skills that are necessary to be economically active and an engaged citizen. Throughout this year, schools and teachers have adapted quickly as new learning and teaching methods were required in response to the pandemic. Teachers have had to embrace digital through new teaching approaches; and while many have successfully managed this, others have not due to a lack of support and equipment. This directly impacts on pupils' prospects. Improved digital and data skills, support and equipment are needed to ensure that digital teaching methods can be embraced by all teachers and schools and that no child is left behind. Blended learning, a mix of physical and digital teaching methods, does bring benefits provided appropriate support is available. These learning models should be encouraged as they can help improve the understanding of the value of digital within education. Providing equipment to the schools is vitally important. The Scottish Government could improve the access to certain devices and equipment through integrating circular economy policies across government and education, as there is a cascade of digital equipment which can be passed on to schools.
- 12** Initiatives which are being led by the Scottish Tech Army (STA) are helping to improve accessibility to digital equipment and improve teachers' skills and understanding of digital. Through their volunteers, the STA are producing online teaching courses for schools and mobilising computer science professionals to become teachers. The efforts of the STA and other similar initiatives should be supported while changes within the recruitment and retention of teachers could encourage more of those working in computing, digital and IT-related professions to become teachers.
- 13** Our higher and further education institutions play a crucial role in digital inclusion, through access to equipment and skills development. As the economy evolves, the reskilling and upskilling of the workforce will be vital.

While colleges and universities work with businesses and charities to address issues such as inclusion and digital illiteracy, more packages and initiatives will be required to expand opportunities for reskilling. Lifelong learning is crucially important in this context and it is vital that our education system reflects this.

## Services for All and Transforming Government

- 14** The pandemic has led to a substantial increase in both the demand for and, changes to, the delivery of public services. We have, for example, witnessed mass adoption of digital methods across a wide-range of public services and people and providers are now far more open to change. There is an opportunity to make enduring changes to the delivery of public services, and digitalisation can help achieve more integrated service provision.
- 15** Achieving transformative change across public services and government is dependent on the collection and use of data in informing research and decision making. It will therefore be important that the renewed Digital Strategy addresses issues around the ethics of data collection, sharing and use by public services, governments and businesses through the development of appropriate governance structures. Specifically, there needs to be an open discussion with citizens on which data can be shared between public services and government, and why it is important. The revised Digital Strategy should seek to improve public understanding of why the collection, sharing and use of data is important and how it can impact everyday life. Transparency should be applied by government on what data is used and why, with public services and businesses providing simple explanations. These approaches are needed to build trust in the collection and use of data in supporting the delivery of improved public services.

- 16** Once governance structures are established the Scottish Government should look across public services and identify where the biggest benefits can be made. Global examples, such as the deCODE Genetics initiative in Iceland, illustrate that healthcare is an area where data sharing can lead to notable improvements in service delivery and research.<sup>11</sup> With a nationalised system, collection and sharing of health and social care data in Scotland should, in theory, be achievable. However, it remains difficult to persuade organisations to share their data with other public services, with huge silos of data within health and social care currently inaccessible. While attitudes are changing, top-down interventions will be required to encourage the sharing of the appropriate data between public services.
- 17** The collection, sharing and use of data across key areas of the economy such as transport and logistics is vital to inform public policy decisions from central to local government. This will inform important decisions around transport, climate, sustainability and educational strategies.
- 18** Initiatives such as Digital Identity Scotland which aim to improve access to public services, enhance the collection and use of data, and is citizen owned, are welcomed and supported.<sup>12</sup> Furthermore, the worldwide CivTech Alliance, formed in Scotland, has had significant impact in bringing together public, private and third sector organisations working across civic and government tech to support products and services aimed at improving lives.<sup>13</sup> Not only does this have the potential to improve the delivery of government and public services, it is now widely seen as a new market opportunity, possibly as big as Fintech, with substantial potential to create new businesses and high-quality jobs in Scotland.
- 19** Currently, the UK is ranked 7th out of 193 countries in terms of digital government; while this is admirable more needs to be done to maintain and build on this position.<sup>14</sup> An important first step may be the creation of

a single web portal in which citizens can access all public services and manage their data which is retained and used by governments in accordance with the citizen's agreement.

## A Data and Digital Economy

- 20** As mentioned above, Scotland has the potential to have a strong competitive advantage in using data to improve public services, government and create new businesses. However, the Scottish Government and COSLA may need to change how this is described within the strategy. Describing it as, 'A Data and Digital Economy' may create the perception that the public's data is being monetised without their consent or benefit rather being used for the public good. This could diminish public trust and make it more difficult to persuade citizens, businesses, institutions or charities to share their data.
- 21** The pandemic has brought major challenges for businesses. While some have been able to adapt to provide their services digitally and with workforces operating from home, this has not protected many from the significant reductions in revenue during the pandemic, which may be existential for some businesses. The current context is not encouraging, and with SMEs suffering the most, there is a real possibility that a third of SMEs in Scotland may not reopen after the crisis. This could increase if the Coronavirus Business Interruption Loans, which have allowed SMEs to continue to operate throughout the period of restrictions, are called back next year.<sup>15</sup> Therefore, coordinated support for SMEs is needed, including incentives to further develop and grow their digital capability and capacity.
- 22** One means of upskilling SMEs would be to engage with businesses and develop their digital capability through apprenticeships. Developing apprenticeship schemes that focus on digital skills can help SMEs understand the value in embracing digital change, as apprentices will have a tangible impact on the operation of the business. Therefore, the Scottish Government, Skills Development Scotland, colleges and universities should consider the roll out of further apprenticeships which are focused on digital skills.

<sup>11</sup> <https://www.decode.com/>

<sup>12</sup> <https://www.gov.scot/policies/digital/digital-identity-scotland/>

<sup>13</sup> <https://www.civtechalliance.org/>

<sup>14</sup> United Nations. 2020. 'E-Government Survey'. URL: <https://www.un.org/development/desa/publications/publication/2020-united-nations-e-government-survey>

<sup>15</sup> Federation of Small Businesses. 2020. 'Finding our Feet'. URL: <https://www.fsb.org.uk/resource-report/finding-our-feet.html>

- 23** Additionally, there are other initiatives that support SMEs and encourage the uptake of digital in retail to rescue and revitalise the high street. For instance, the STA is working to support SMEs by supporting them through volunteers to develop the skills necessary to embrace digital. Additionally, the ScotlandIS Cross Sectoral Advisory Group brings industry bodies together to encourage the uptake of digital by SMEs, while understanding the challenges within certain sectors in the uptake of digital. These initiatives should be supported and expanded to help improve digitalisation of SMEs.
- 24** Inspiring SMEs to have the willingness to embrace digital requires improved leadership. This can be possible through improving skills and leadership within Boards by encouraging more people with digital expertise and experience to join Boards of SMEs. Alternative interventions need to be explored on how to connect with microbusinesses which do not have a Board structure.
- 25** Lack of investment is often viewed as an issue for business uptake of digital; however, there are more investment opportunities in Scotland than ever before. To access investment the current advisory base in Scotland needs to improve. This, again, will rely on leadership from Boards and Chief Executives. The diversity and inclusion of investment opportunities remains an issue and should be examined, as investment in companies led by women and BAME is still low.
- 26** Scotland should aim to be at the forefront of changes in the economy post-Covid-19, promoting accelerated adoption of digital services, remote working, and blended learning. These changes will have an impact on the physical infrastructure of Scotland's cities and towns with the potential for re-location of businesses from cities to rural communities and creation of new businesses. The Scottish Government will need to work with local government, agencies, institutions, business and communities to make the most of the new opportunities available while dealing with the impact of displacement in urban areas.
- 27** As mentioned above, one of the greatest barriers to growth of the data sector and digitalisation of all businesses is infrastructure. An ambitious investment plan to deliver the infrastructure requirements of the next twenty years is needed now. Issues that should be addressed include Scotland's lack of subsea digital landing cables which is a disadvantage to attracting inward investment and a lack of data centre capacity. The report by the Advisory Group on Economic Recovery refers to the importance of both, using Ireland as a case study to demonstrate how investment in subsea cables has enabled Ireland to attract substantial inward investment from the US. The report also highlights the distinct lack of data centre capacity in Scotland whereby per capita Scotland has one-sixteenth of the capacity available in Wales.<sup>16</sup> The consultation refers to the importance of investing in green data centres. Given the amount of power which is required for cooling this represents both a huge challenge and business opportunity. The Scottish Government may be able to facilitate such investment at scale through the planning system, rates relief and grant support to improve infrastructure.
- 28** The Scottish Government must be aware of the full cost of digital products to the environment through its use of raw materials. Scotland can lead the world in the 'greening' of the digital economy by ensuring that the building of a circular economy for digital products is a key aim of Government.

## A Vibrant Tech Sector

- 29** As highlighted in the RSE response, the Logan Report provides a useful insight into the importance of software-enabled internet businesses in Scotland.<sup>17</sup> However, this represents a narrow focus and does not cover the entirety of the technology sector ecosystem. It will be important to ensure that the Digital Strategy does take account of the entire technology sector.

<sup>16</sup> Independent Advisory Group on Economic Recovery. 2020. 'Towards a Robust, Resilient Wellbeing Economy for Scotland: Report of the Advisory Group on Economic Recovery', pp45-47, Scottish Government. URL:

<https://www.gov.scot/publications/towards-robust-resilient-wellbeing-economy-scotland-report-advisory-group-economic-recovery/>

<sup>17</sup> The Royal Society of Edinburgh. 2020. 'Response to the Logan Report'. URL: <https://www.rse.org.uk/advice-papers/response-to-the-logan-report/>

- 30** The Logan Report’s recommendations on improving computing science education within schools are supported, but it does overlook the contribution that our colleges and universities make in the provision of digital skills and reskilling. The further and higher education sectors have been adopting more collaborative approaches to the provision of digital skills, including through the Digital Skills Partnership. It is therefore important that the Digital Strategy takes full account of their role in improving the provision of digital skills, particularly through reskilling of the current workforce.
- 31** The Logan Report correctly highlights the value of the software sector to the Scottish economy. However, the UK has underperformed in tech start-ups and spinouts in comparison to other countries across Europe, particularly Scandinavia and the Baltics. Valuable lessons could be drawn from their approaches which have placed digital at the heart of citizens’ rights and the growth of their economies through investment in infrastructure and skills.
- 32** Attracting businesses to Scotland remains an issue, with proposals to businesses not always reflecting Scotland’s offer, including the skills base, world-class research intensive higher education institutions and the investment in infrastructure to support businesses. Working with agencies such as Scottish Development International, the Digital Strategy should encourage an approach to attracting investment which showcases these strengths.
- 33** Greater ambition is needed. In the recent past, previous projects, including Project Alba, were established to enable Scotland to be at the forefront of digital but insufficient support was made available to allow them to gain traction. It is time to reignite this ambition and have it matched by sustainable investment in world class infrastructure and skills.

## Closing Comments

- 34** The refresh of the Digital Strategy is welcomed and comes at a critical time. The new strategy should be ambitious in its aims, particularly around the development and provision of infrastructure and skills. The implementation process for the strategy will be important, this should be in three parts: i) taking stock of the current environment and identifying initiatives of best practice which can be expanded and new ideas that can be supported, ii) development of an investment plan for infrastructure and skills which can deliver the objectives and outcomes in the strategy, and iii) engaging with and protecting citizens in relation to ethical use of their data to enhance the delivery of public services. As the strategy develops, the RSE welcomes further opportunities to engage with the Scottish Government and COSLA.

### *Additional Information*

Any enquiries about this advice paper should be addressed to Paul Stuart, Policy Advice Officer (pstuart@therse.org.uk).

Responses are published on the RSE website (<https://www.rse.org.uk/>)

The Royal Society of Edinburgh, Scotland's National Academy, is Scottish Charity No. SC000470

*Advice Paper (Royal Society of Edinburgh) ISSN 2024-2694*