

## House of Lords Digital Communications Committee

This evidence is submitted jointly on behalf of the Digital Poverty Alliance and BCS, The Chartered Institute for IT. It is supported by Currys, In Kind Direct, Tech UK, the Worshipful Company of Information Technologists, and #joiningthedots community of 13 UK tech leaders communities: UK IT Leaders, Horizon CIO Network, S.E.E.D., CIO WaterCooler, Hottopics.ht, Computing, TechMonitor, Charity IT Leaders, BCS, CIO, IDC, Tech London Advocates and Digital Leaders.

### **1. What are the main causes of digital exclusion in the UK? What is the economic and social impact?**

Digital exclusion is a complex issue and has multiple and interconnected causes. Greater understanding of how it is intertwined with existing individual and social issues is needed.

Previous attempts at addressing the digital divide have focused on the dimension of the “haves and have nots”<sup>1</sup> – whether one has accessed to the digital tools and infrastructure. At least two other dimensions needs to be understood and addressed:

“Cans and Can Nots” –not everyone can use digital technologies or participate digitally. For example, people with disabilities may not be able to do so, require support or the provision of a less than adequate digital solution mean people cannot fully switch over.

“Wills and Will Nots” –there will be a segment of the population that do not understand or accept the benefits of going digital and make either a conscious (knowing but choose not to) or unconscious choice (not knowing).

In addition, the DPA and BCS would like to call out the following dimensions to understand the causes of digital exclusion:

#### **Personal Factors**

At an individual level, the Digital Poverty Alliance identified five determinants of digital poverty which include devices and connectivity, access, motivation, support and participation, and capability<sup>2</sup>. Related to these, the following areas can have a consequential impact on the individual experience of digital exclusion. They include:

**Ability** – refers to both an individual’s cognitive and physical abilities to access digital devices and participate in the digital world. The UK’s 14.6 million registered disabled have been left behind since the invention of the World Wide Web in 1989<sup>3</sup>. Developing essential digital skills is a way to enable this. However, the UK Parliamentary POSTNOTE— report 643<sup>4</sup>—highlights how ‘Inequalities in digital skills’ can be exacerbated due to age, socioeconomic status, location etc. For example, ageing causes reduction in cognitive and physical abilities.

**Accessibility** - The World Wide Web Consortium (W3C) identified the need for websites to be more accessible for disabled people in the 1990s. However, 97% of the world’s top one million websites contained accessibility errors<sup>5</sup>. There is no corresponding data available for mobile apps, brought to market with the iPhone in 2008. The future of improvements to healthcare of the UK population will involve increasing digitisation. The most vulnerable and largest minority of people are the UK’s disabled population. Arguably, the most to gain or lose from forthcoming digital innovations is in healthcare. It is imperative that any such digital services are accessible.

**Afflicted** – through no fault of the individual, the world around them continues to evolve at pace into a digital one. For example, with the switchover from analogue to digital telephones, some found themselves excluded because they did not understand new technologies or have the means to do so.

**Affordability** – those who are already needing support from the state or families and friends, or because of the cost-of-living crisis finding themselves having to make ends meet, will struggle to deal rapid digitisation.

**Agency** – grassroots communities and charities supporting those in need (e.g. healthcare, social care) do not have the means (expertise, skills, resources) on top of their main mission to address the digital needs of their staff and volunteers, as well as those they are supporting.

**Motivation and Confidence** – the common barriers to digital inclusion and participation include access issues/problems, low confidence, support void, stress and fear, poor design, perceptual, motor and cognitive challenges.<sup>6</sup> What can work to build confidence include ease of access, empowering users, appropriate design light-touch administration, and continuity of in-person support at home or in the community.

## External Factors

Digital exclusion is not just about access; it exists on a continuum between hard forms of exclusion, where people cannot afford or cannot access devices and connectivity, and soft exclusion<sup>7</sup> where individuals do not have the skills or capabilities to realise personal, social or economic benefits from online access. There are factors outside the control of the individual that can influence digital exclusion. These include:

**Pace of Technology Change:** The pace of technological advancements and adoption by society at large to create digital solutions and ways of working and living have hidden the widening divide. This will continue to widen unless there is a more comprehensive understanding of the issues, together with a more joined up effort to solve this constantly evolving driving force of change.

**Lack of understanding of the real needs of the excluded or marginalised:** Many of today's provision and "interventions" are not fully informed by knowledge of the digital exclusion phenomenon and the real needs of the excluded or marginalised.

**Lack of joined up approaches:** Digital exclusion is closely related to financial poverty and is associated with deprivation and social inequalities<sup>8</sup>. The affordability of communication services stands as one significant reason why individuals may be digitally excluded. However, digital exclusion is not just about access; it exists on a continuum between hard forms of exclusion, where people cannot afford or cannot access devices and connectivity, and soft exclusion<sup>7</sup> where individuals do not have the skills or capabilities to realise personal, social or economic benefits from online access.

**Geographic location:** the availability of supporting connectivity infrastructure, is also associated with digital exclusion. Data from Ofcom highlights the disparity between rural broadband performance with a 28% difference median average peak time download speeds in urban (62.1 Mbit/s) and rural (39.4 Mbit/s) areas of the UK<sup>9</sup>. Although the number of premises that are unable to access a decent connection is declining, there remain approximately 30,000 homes in the UK that are unable to access either a decent fixed broadband service, or good 4G indoor coverage<sup>10</sup>

**Demographic trends**, while not causative of digital exclusion may increase its likelihood, particularly in relation to skills and capability. Individuals aged over 75 are three times less likely to have basic digital skills compared to those aged 18-24<sup>11</sup>. There is a significant lack of knowledge about the benefits of being online for the older generation, and how to navigate the risks of being online such as cyber-attacks. Additionally, health and disability can play a role as individuals with an impairment are 2.5 times more likely to lack foundational level digital skills.<sup>11</sup>

There are similarities between *Maitland's* “missing link” report<sup>2</sup> and today's *digital divide*. Most significantly, there is a direct correlation between the availability of, and access to, telecommunication infrastructure and a country's economic growth. The gap cut across all dimensions of universal access/service, showing not only the disparity between rich countries and poor ones, but between the wealthy within a given society and the poor, and those who live in rural areas versus urban dwellers.

## **2. How has the rising cost of living affected digital exclusion**

### **a) To what extent does digital exclusion exacerbate cost of living pressures?**

The cost-of-living crisis also threatens to widen digital exclusion due to pressures on household income. The latest data from Ofcom shows that 32% of households were experiencing affordability issues with communications services<sup>12</sup>.

DPA, Currys and You Gov conducted survey with YouGov in December 2022 and found 36% of respondents have cut back their spending on digital access<sup>13</sup>. A quarter (27%) have switched to a cheaper, less comprehensive broadband or mobile phone plan and one in five (19%) have downgraded their phone or laptop devices.

Additionally, the In Kind Direct Charitable Network Impact survey conducted in January 2023 (689 responses) found that among the charities currently providing digital access:

- 88% said need for their service had increased over the past 6 months.
- 89% saw an increase in people they support who had recently been pushed into poverty.
- Nearly half (49%) said keeping up with demand for services was among the biggest challenges their organisation faces.

### **b) What are the long-term implications of this relationship?**

Over the longer term, digital exclusion will impact economic growth, social inclusion and widen education inequalities.

A lack of digital access and skills among the population will continue to have a profound impact on the labour market. Digital exclusion can lead to lower productivity, reduced job opportunities, higher costs, and wider economic inequalities. 82% of jobs advertised require digital skills<sup>14</sup> and by 2030, five million workers could be acutely under-skilled in basic digital skills, with up to two-thirds of the workforce experiencing some level of digital under-skilling<sup>15</sup>

Digital exclusion will also continue to have a massive impact on public services as they become increasingly digitised. This will have impacts on the ability of individuals to access welfare benefits, such as universal credit, which requires people to apply and manage their claim online. Additionally,

in recent years, many local authorities and housing associations have moved their social housing application processes online with adverse implications for those who are digitally excluded.

Digital exclusion also has the potential to widen education inequalities. Many schools, colleges and universities now rely on digital technologies to deliver educational content and facilitate communication between students and teachers. Students without access to digital technologies may be at a disadvantage, leading to reduced educational outcomes and opportunities. According to Ofcom, 25% of the most financially vulnerable children do not have access to a suitable device for learning<sup>16</sup>

Health inequalities are also a serious issue as many healthcare services are now delivered online. Those without access to digital technologies may have reduced access to healthcare services and information, leading to poorer health outcomes and disparities. These are issues that NHS England is seeking to address through their digital inclusion framework which is due to be published in May 2023.

### **3. What are the obstacles to greater digital inclusion? Where is policy intervention likely to have the greatest impact over the next 12 months and 5 years?**

To truly address all of these issues, there are a number of areas where policy interventions will likely have the greatest impact.

**Lack of Joined-Up Policy:** One of the obstacles to greater digital inclusion is for policy makers across political parties, government departments and organisations such as BCS, DPA to unite on understanding and tackling this complex multi-dimensional issue. Currently there are numerous initiatives across public and private sector organisations, but many are tactical solutions. It requires a concerted and joined up approach to have the greatest impact to be further reaching, more sustainable, strategic and scalable.

The COVID-19 pandemic drew attention towards the issue, but subsequently the energy to solve the issue has dissipated. Addressing digital exclusion requires a strong vision and commitment from government and organisations like DPA and BCS to provide clarity and direction so that others know what they can and should do like the private sector as well as individuals. One specific policy intervention is in recognising that the provision and access to data connectivity is a public good like the other utilities of gas, electricity and water. The DPA's UK Evidence Review has called this out as one of the core principles of addressing digital inclusion for all. This requires government policy, public and private sector partner to make this a reality. It cannot be solved in isolation.

The Welsh Government has been engaged in pathfinding work with the development of the minimum digital living standard<sup>17</sup>, and although there have been some implementation challenges, the Connecting Scotland programme<sup>18</sup> has set an ambitious and integrated vision for digital inclusion. There is a sense, however, that England and Northern Ireland do not currently have such an ambitious and proactive approach to digital inclusion policy. However, these challenges are complicated by devolution arrangements which can, in instances, generate intragovernmental clashes due to the overlapping nature of certain functions around, for example, broadband and fibre rollouts and cyber resilience. Across the UK clear allocations of responsibility and ownership would benefit roll out of services and infrastructure.

Alongside this, there is a need for a longer term and sustainable funding settlement to support community embedded digital inclusion interventions. Concerted action is especially needed, to provide support to the 10 million adults who do not have essential digital skills<sup>11</sup>.

This is why a bold and ambitious UK wide strategy could see government play a hugely consequential role. Government can work to set a shared vision, facilitate knowledge and data exchange and ensure that digital inclusion is built into digital transformation programmes across government. Ultimately without purposeful government action, significant improvements in digital exclusion will not happen.

The DPA has a mission to end digital poverty for all by 2030. The government's levelling up agenda also targets 2030. This is the opportunity to generate momentum for sustainable action to end digital exclusion.

**Lack of attention outside employment:** The UK Digital Strategy (2017)<sup>19</sup> has focused on meeting the requirements of employers in many sectors to equip their employees with appropriate digital skills. However, this approach has not helped the digitally disadvantaged/excluded. In the context of this strategy which emphasises the importance of 'up-skilling' people throughout their careers, the Basic Digital Skills and Essential Digital Skills (EDS) frameworks were developed.<sup>20</sup> This means that there has not been due attention or investment of resources in developing help and support tailored to the needs of the disadvantaged/excluded, or the needs of the 13% of the adult population who have never been online. These people require a very different approach that is appropriate to their very different needs. The resultant void in learning support has allowed a vast chasm to develop between the existing capabilities of many digitally excluded/disadvantaged people and the level of capability needed to even begin to acquire the skills incorporated in the EDS framework.

**Lack of Digital Support:** Achieving entry of the digitally excluded into the digital world has been an elusive target over many years.<sup>21</sup> There is a dearth of support for those outside work contrasts sharply with the help and training in the use of digital technologies in most work organisations. There is the concept of an IT Helpdesk, but there is no such equivalent outside work where people are least digitally competent and needing support the most. Also, for this population, it is about experiential learning to do something useful and relevant, such as managing their personal life and health.

**Network infrastructure:** Network connectivity and infrastructure is an inherently complex issue, so we recognise the importance of not being too prescriptive about the best solutions as different regions and communities may require unique approaches. Yet, we also recognise that more can be done to improve the efficiency of the market. Over time, it may be necessary to review the universal service obligation to ensure that households in remote areas can benefit from connectivity. This could involve increasing the minimum speed requirement and expanding USO coverage to 4G and 5G mobile broadband.

#### **a) To what extent would these changes help unlock economic growth?**

Digital exclusion has both direct and indirect effects on the economy. For example, due to school children not attending class during covid, it is forecasted that lost school time will "will hurt the economy for 65 years"<sup>22</sup>. Researchers predicted a 3% loss in future annual earnings for pupils caught up in the pandemic, with a quarter of the entire workforce having lower skills and consequently lower growth rate. The COVID-19 pandemic precipitated the worst economic crisis in decades and reversed progress towards decent work for all. By the end of 2021, global economic recovery had

been hampered by new waves of COVID-19 infections, rising inflationary pressures, major supplychain disruptions, policy uncertainties and persistent labour market challenges.

Many of these challenges remain, so there is a clear case for digital inclusion playing a supportive role to unlock economic growth in a very challenging environment.

Doing so would help to reduce the burden of addressing digital inclusion by everyone in a duplicative way, which is wasteful and does not solve the problem well. On the other hand, these changes will enable the leveraging of digital technologies for social inclusion. It can support and accelerate achievement of each of the 17 Sustainable Development Goals – from ending extreme poverty to promoting decent work and achieving universal literacy (UN). Specifically, SDG Goal 8 is about promoting inclusive and sustainable economic growth, employment and decent work for all.

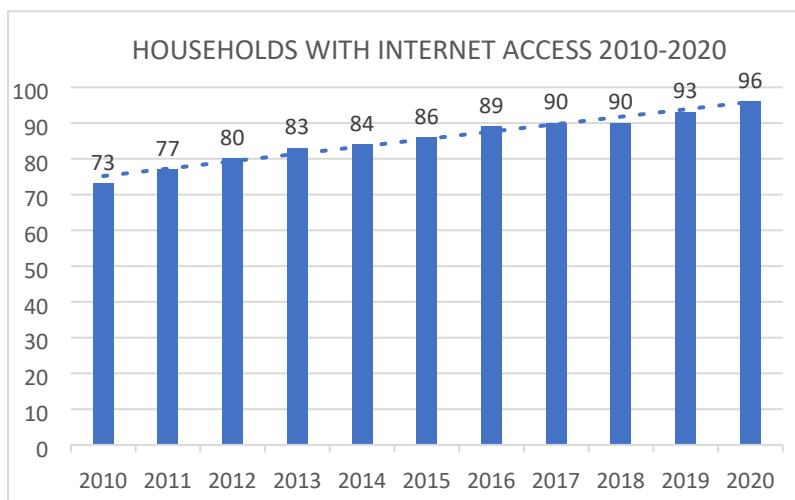
Digital inclusion would help unlock economic growth by, reducing capacity on public services, increasing human capital and earnings and boosting productivity. In a UK context, research from CEBR and the Good Things Foundation estimates that every £1 invested in digital inclusion generates a society wide return of £15<sup>23</sup>. The report also finds that an investment of £1.4 billion could reap economic benefits of £13.7 billion for UK plc.<sup>23</sup> The economic case for digital inclusion is further supported by a range of international empirical studies.

The Digital Poverty Alliance recognises the value of work to quantify the economic benefits of digital inclusion and so we are working to produce a business case which will aim to quantify the social, economic and personal benefits of digital access.

**4. How effective are Government initiatives at addressing digital exclusion? What further action is needed, and what should be done to provide offline access to services?**

If we take a headline measure of internet access over time, we can see a large increase in the percentage of households who have access; this increased by 23% over the previous decade. However, some of this access may only be through a mobile phone and therefore rely on an individual being at home (for others to use) and having adequate data allowance and speed.

Yet overall, in terms of expanding the proportion of households with internet connectivity, we can say that government and telecoms action has been a considerable success.



## FINAL

Figure 1 Source: Family Expenditure Survey 1998 to 2001;  
Expenditure and Food Survey 2002 to 2004;  
Opinions and Lifestyle Survey, formerly known as the Opinions/Omnibus Survey from 2005.

However, this headline figure obscures a more nuanced picture. Although more people than ever are connected there, there are still a high proportion of adults without the capability and motivation to engage with the online world productively.

In terms of specific government initiatives, in England adults with low levels of digital skills can now access a government entitlement for an essential digital skills qualification. It remains unclear, however, from DfE data how many adults have enrolled and achieved these qualifications<sup>24</sup>. Additionally, a new digital functional skills qualification will be available for delivery from August 2023.

During the pandemic, the UK Government launched the Get Help with Technology scheme which distributed an estimated 1.95 million devices to school children<sup>25</sup>. This support is undoubtedly welcome but both this programme and a similar initiative from the Scottish government<sup>18</sup> encountered significant implementation challenges. While the Scottish Government is undergoing a programme evaluation of this initiative, a similar evaluation of the Get Help with Technology scheme would also be welcome.

Providing access to devices is an important first step to participating digitally, whether for work, learnings, getting to digital services, or entertainment. The work done by the tech leaders' communities<sup>26</sup> identifies the need for a digital access package that include device, data, tech support, appropriate content etc. There is an acute need government agency working on these initiatives to work in a joint up way. A way forward is to ensure greater awareness and joined up thinking and action across all levels of society and government – political parties, government departments, corporates, professional bodies, grassroots communities and individuals – to achieve greater understanding, and coordination of the strategies and actions to ensure the provision and “interventions” are informed by knowledge of the digital exclusion phenomenon and the real needs of the excluded or marginalised.

We hope that the DPA can provide a coordination point for these efforts. The tech sector, led by organisations such as BCS and working across the IT industry sector with other IT tech organisations and communities can play a role in support. Each and every IT professional is well placed to be a digital champion to help immediately wherever they may be at work, home or in their local communities. One initiative that is championed by the BCS, DPA and the IT tech leaders communities is the creation of a national tech support, similar to an IT helpdesk at work, but it requires private and public partnership.

In terms of offline services, we accept that not everyone will be able to access services online, and it was estimated by the government that this could be as much as 10%<sup>27</sup> which may include people who will not be persuaded to use the internet.

It will be important to engage with communities and organisations that work with people who are offline can help to identify their needs and preferences and design services accordingly. Providing offline alternatives such as telephone support, physical service centres, or postal services can ensure that those who are offline can still access government services. Additionally, there is also a significant role for shared public spaces to provide safe and supportive digital access which can be delivered through libraries, community centres and digital hubs.

## **5. How well are existing industry initiatives (for example cheaper internet tariffs) addressing digital exclusion? How could they be enhanced?**

Existing industry initiatives such as providing cheaper internet tariffs are very welcome and a lifeline for many who needed this. However, many of these initiatives are short term and tactical. A small study by the DPA in 2021 in trying to understand the total cost of ownership of supporting a socially disadvantaged individual, estimated that there needs to be support provided over a period of 5-10 years<sup>28</sup>

Industry initiatives aimed at addressing digital exclusion, such as cheaper internet tariffs, can be helpful in reducing the cost barrier to accessing digital technology. However, their effectiveness in addressing the root causes of digital exclusion and reaching those who are most in need of support can vary.

Although social tariffs have been introduced to provide discounted broadband to individuals in receipt of universal credit, take up remains low at approximately 3.2% of eligible households<sup>12</sup>. This is due to several issues, including inadequate promotion by internet service providers, limited awareness of social tariffs among eligible groups, and concerns about their quality or reliability. Improving signposting and addressing these issues could enhance the uptake of social tariffs, benefiting more households in need. Research from Ofcom shows that for people in receipt of universal credit, an optimum level of payment would be closer to £4-7 as opposed to the £15-20 at which these tariffs are usually set<sup>10</sup>.

One option to address affordability concerns is to remove VAT from social tariffs. As of August 2022, there were 136,000 households on a social tariff<sup>12</sup>. Assuming an average social tariff rate of £15, the annual cost to government of removing VAT would be approximately £4.9 million—yet this would increase depending on households' sign ups.

The other option for longer term affordability could be for Government to mandate an industry wide social tariff supported by a discount scheme. Such a scheme could operate by requiring all internet service providers to offer a social tariff which would be subsidised by government. The subsidy would be provided at a fixed amount and would be used to offset most of the costs that internet service providers incur for network rental<sup>7</sup>. The subsidy could take the form of a voucher scheme administered by the Department for Work and Pensions and eligibility for the tariff could include recipients of universal credit, pension credit and personal independence payments<sup>7</sup>. It would also be important that the social tariff that would be sufficient for all household's data needs so would ideally need to be at a minimum speed of 40 mb/s.

However, given the wider economic context there will be many households for whom even a heavily subsidised social tariff would still be unaffordable. For these groups there is an argument for fully subsidised device, connectivity and skills support. Initially focus could be placed on priority groups such as jobseekers and individuals in receipt of pension credit. Examples of similar schemes include a programme conducted between the DWP and Talk Talk to provide job seekers with free broadband connectivity for 6 months<sup>29</sup>.

## **6. How effective is civil society at supporting digital inclusion? How could this work be enhanced, and what is the appropriate balance between civil society and Government intervention?**

Civil society plays a critical role in supporting digital inclusion, particularly in addressing the needs of vulnerable and marginalised groups. Civil society organizations can provide targeted support, such as training and digital skills development that is tailored to the needs of specific communities. They can



also act as intermediaries between citizens and government, advocating for more inclusive and equitable digital policies and services.

This work could largely be enhanced if there is better coordination at a local level, particularly to match the supply of digital inclusion support with demand. Local authorities have a critical role to play to facilitate an integrated and joined up local digital inclusion ecosystem. Examples of great practice include the work at a regional level across Greater Manchester and in Leeds with the 100% digital Leeds initiative. However, creating these kinds of ecosystems is knowledge and resource intensive and so there is a role for funding and support to help local authorities across the UK build up capacity.

The solution requires a joined up holistic approach, with a partnership between Government and Civil Society organisations. It is not a standalone solution nor problem but tightly intertwined with other social issues and needs (housing, healthcare, etc). It requires three levels of joined up thinking and action:

**Top Down:** Government and organisations like DPA and BCS to set policy and guidelines.

**Middle out:** Civil society organisations to work together to coordinate #joiningthedots to contribute to major joint initiatives and remove duplication and support local agencies and intermediaries to provide support for the “final mile” that includes the digital needs by those who know the individuals with the right kind of support. They require a very different approach that is appropriate to their very different needs.<sup>30</sup> These civil organisations themselves also need support.

## 7. What lessons can the UK learn from abroad?

There are several lessons that the UK can learn from other countries when it comes to digital inclusion. Here are a few examples:

- Digital skills training: Some countries, such as Finland, have implemented comprehensive digital skills training programmes that begin in primary school and continue throughout a person's life. The UK could learn from this approach and invest in more comprehensive digital skills training programmes.
- Broadband infrastructure: Countries such as South Korea and Japan have invested heavily in broadband infrastructure, which has helped to ensure that more people have access to highspeed internet.
- Device distribution: Sweden has a government requirement that every school aged child has a device of their own – this is the same commitment as in Scotland but further advanced.
- E-government services: Estonia is a leader in e-government services, offering citizens a range of online services such as e-voting and digital identity cards. The UK could learn from Estonia's approach and explore how it could improve its e-government services to make them more accessible and user-friendly.
- Digital inclusion programmes: in Singapore, the government established several initiatives as part of its wider efforts to promote *digital inclusion*<sup>31</sup>. The Digital Inclusion programme consists of four key areas, namely the Silver Infocomm Initiative, NEU PC Plus Programme, Home Access Programme and Enable IT Programme which target four key groups: seniors, needy students, low-income households and people with disabilities<sup>32</sup>. In

2021, Singapore launched the Digital for Life national movement to activate the community in building a digitally inclusive society for its citizens.<sup>33 34</sup>

- According to Clarence Chua, Director of Strategic Planning in the Ministry of Communications and Information, *“The role of government is to better the lives and livelihoods of our people. We think that the most valuable role we can play is in helping everyone participate in this digital world confidently, safely and responsibly<sup>31</sup>.”*

## References

1. The Missing Link / Maitland Report.  
<https://www.itu.int/en/history/Pages/MaitlandReport.aspx>.
2. Allmann, K. *UK Digital Poverty Evidence Review* . (2022).
3. Family Resources Survey - GOV.UK.  
<https://www.gov.uk/government/collections/family-resources-survey--2#fullpublication-update-history>.
4. Developing essential digital skills - POST.  
<https://post.parliament.uk/researchbriefings/post-pn-0643/>.
5. WebAIM: The WebAIM Million - The 2022 report on the accessibility of the top 1,000,000 home pages. <https://webaim.org/projects/million/>.
6. Leela reduction/ageing.
7. Abey, J. *Bridging the divide: tackling digital inequality in a post-pandemic world*. (2022).
8. British Academy. *Understanding Digital Poverty and Inequality in the UK | The British Academy*. <https://www.thebritishacademy.ac.uk/publications/understanding-digitalpoverty-and-inequality-in-the-uk/> (2022).
9. Ofcom. UK Home Broadband Performance. (2022).
10. Connected Nations 2022 - Ofcom. <https://www.ofcom.org.uk/research-anddata/multi-sector-research/infrastructure-research/connected-nations-2022>.
11. McAndrew, C. & Parliament, U. 2022 Consumer Digital Index. (2017).
12. Affordability of communications services: September 2022 update. (2022).
13. Currys. Currys Raises Over £70,000 to Tackle Digital Poverty as New Study Reveals Digital Access Worsening. <https://www.currysplc.com/news-media/pressreleases/2023/currys-raises-over-70-000-to-tackle-digital-poverty-as-new-studyreveals-digital-access-worsening/> (2023).
14. Nania, J., Bonella, H., Restuccia, D. & Taska, B. No Longer Optional: Employer Demand for Digital Skills Author Credits Acknowledgements. (2019).
15. Industrial Strategy Council. UK Skills Mismatch 2030.  
<https://industrialstrategyCouncil.org/uk-skills-mismatch-2030-research-paper> (2019).

## FINAL

16. Ofcom. Children and parents: media use and attitudes report Content consumption and online activities.
17. Welsh Government. Towards a Welsh Minimum Digital Living Standard: final report. (2023).
18. Connecting Scotland. <https://connecting.scot/>.
19. DCMS. *UK Digital Strategy*. <https://www.gov.uk/government/publications/uks-digitalstrategy/uk-digital-strategy> (2022).
20. Essential Digital Skills Framework. (2018).
21. IARIA Journals. [http://www.iariajournals.org/internet\\_technology/](http://www.iariajournals.org/internet_technology/).
22. Coronavirus: Lost school time 'will hurt economy for 65 years' - study - BBC News. <https://www.bbc.co.uk/news/education-53514564>.
23. Good Things Foundation & Centre for Economics and Business Research. *The economic impact of digital inclusion in the UK*. <https://www.goodthingsfoundation.org/insights/the-economic-impact-of-digitalinclusion-in-the-uk/> (2021).
24. Further education and skills, Academic Year 2022/23 – Explore education statistics – GOV.UK. <https://explore-education-statistics.service.gov.uk/find-statistics/furthereducation-and-skills>.
25. Get help with technology programme: conditions of device grants for technical support - GOV.UK. <https://www.gov.uk/government/publications/get-help-withtechnology-conditions-of-internet-access-and-device-grants/get-help-withtechnology-programme-conditions-of-device-grants-for-technical-support>.
26. #joiningthedots Dashboard (2023). Digital Inclusion=Device+Data Connectivity+Tech Support+Motivation and Confidence+Digital Skills+Tech Career Opportunities+Safety and Security+Inclusive Design+Communicate and Connect+Research and Data. <https://www.bcs.org/media/9763/ddsg-joiningthedots-dashboard.pdf>
27. UK Government. Government Digital Inclusion Strategy. <https://www.gov.uk/government/publications/government-digital-inclusionstrategy/government-digital-inclusion-strategy> (2014).
28. 23. Winters, C. & Quek, F. (2021). Total Cost of Ownership of Device, Data and Support Provision.
29. How universal credit claimants can get free TalkTalk internet and save £132 - Wales Online. <https://www.walesonline.co.uk/news/uk-news/talktalk-free-internetuniversal-credit-22780202>.
30. Professor Damodaran, by L., Damodaran, L. & Emerita, P. Barriers and 'What works' solutions to Digital Participation For All. (2021).
31. Lessons on digital equity: How the Singapore Government has been tackling the digital divide | Centre For Public Impact (CPI). <https://www.centreforpublicimpact.org/insights/lessons-on-digital-equity-how-thesingapore-government-has-been-tackling-the-digital-divide>.

32. Infocomm Development Authority of Singapore. Factsheet: Overview of Digital Inclusion. [https://www.imda.gov.sg/-/media/imda/files/inner/aboutus/newsroom/media-releases/2016/0421\\_senior-smart-phone-workshop/factsheetfor-the-overview-of-digital-inclusion-programmes.pdf](https://www.imda.gov.sg/-/media/imda/files/inner/aboutus/newsroom/media-releases/2016/0421_senior-smart-phone-workshop/factsheetfor-the-overview-of-digital-inclusion-programmes.pdf)
33. Infocomm Media Development Authority. Digital for Life. Online. <https://www.imda.gov.sg/About-IMDA/Who-We-Are/Digital-For-Life>
34. Open Gov Asia. Singapore's Digital for Life Movement Promotes Digital Inclusion. Online. <https://opengovasia.com/singapores-digital-for-life-movement-promotesdigital-inclusion/>

### Additional References

1. [How can slower adaptors to changes in technology be equipped to develop and maintain digital skills for \(a\) the increasing proliferation of online services; and \(b\) the future workplace?](#) (commissioned by Foresight, Government Office for Science 2017).
2. British Academy (2022). **Understanding Digital Poverty and Inequality in the UK.** <https://www.thebritishacademy.ac.uk/publications/understanding-digital-poverty-andinequality-in-the-uk>
3. BCS Digital Divide Specialist Group (2023). **A framework for digital participation for all.** Webinar, March: <https://www.bcs.org/events-calendar/2023/march/webinar-a-framework-for-digital-participation-for-all-digital-divide-sg/>
4. BCS Digital Divide Specialist Group (2023). **How we can fight the cost of living crisis using technology.** Webinar, February: <https://www.bcs.org/events-calendar/2023/january/webinarhow-we-can-fight-the-cost-of-living-crisis-using-technology/>
5. BCS Digital Divide Specialist Group and Worshipful Company of Information Technologists (2022). **Technology and Homelessness.** Webinar, December: <https://www.bcs.org/eventscalendar/2022/december/webinar-technology-and-homelessness-digital-divide-sg/>
6. BCS Digital Divide Specialist Group (2022). **Digital Divide – Growing or Shrinking?** Webinar, November: <https://www.bcs.org/events-calendar/2022/november/webinar-digital-dividegrowing-or-shrinking/>
7. BCS Digital Divide Specialist Group (2022). **Closing the digital divide in Stoke-on-Trent: The Discover Digital Project.** Hybrid Event, November: <https://www.bcs.org/events-calendar/2022/november/hybrid-event-closing-the-digital-divide-in-stoke-on-trent-the-discoverdigital-project/>
8. BCS Digital Divide Specialist Group and Professor Damodaran (2022). **Digital Participation for All. What we can do to support older people.** Webinar, October:

<https://www.bcs.org/eventscalendar/2022/october/webinar-digital-participation-for-all-what-we-can-do-to-support-olderpeople/>

9. BCS Digital Divide Specialist Group and Dementia Friends (2022). **Closing the Digital Divide. Help someone by becoming a Dementia Friend.** Webinar, July: <https://www.bcs.org/eventscalendar/2022/july/webinar-closing-the-digital-divide-help-someone-by-becoming-a-dementiafriend/>
10. BCS Digital Divide Specialist Group and Brain in Hand (2022). **Digital Inclusion – Why you should employ and retain people with Autism.** Webinar, June: <https://www.bcs.org/eventscalendar/2022/june/webinar-digital-inclusion-why-you-should-employ-and-retain-people-withautism/>
11. Digital Poverty Alliance (2022). **Digital Poverty in the UK: What the evidence shows.** Online, June: <https://digitalpovertyalliance.org/uk-digital-poverty-evidence-review-2022/>
12. Digital Leaders Week (2022). **Support Capability and Motivation – Fighting Digital Poverty.** Webinar, June: <https://week.digileaders.com/talks/support-capability-and-motivation-fightingdigital-poverty/>
13. BCS Animation and Games Development Specialist Group and SpecialEffect (2022). **Communication, control, telepresence with severe physical challenges.** Webinar, June: <https://www.bcs.org/events-calendar/2022/june/webinar-communication-controltelepresence-with-severe-physical-challenges/>
14. Digital Universities Week, Times Higher Education (2022). **What more can universities do to stop digital poverty from hindering the student experience?** London, April: <https://www.timeshighered-events.com/digital-universities-week-uk2022/agenda/session/689747>
15. LSE Department of Media and Communications and International Inequalities Institute (2022). **The Digital Disconnect.** London, March: <https://www.bcs.org/events-calendar/2022/march/thedigital-disconnect/>
16. BCS Digital Divide Specialist Group (2022). **Closing the digital divide by 2030.** Webinar, February: <https://www.bcs.org/events-calendar/2022/february/webinar-closing-the-digital-divide-by2030-digital-divide-sg/>
17. BCS Learning and Development Specialist Group (2022). **Let's start addressing the Digital Divide, and yes it is a solvable problem!** Webinar, February: <https://www.bcs.org/events-calendar/2022/february/webinar-lets-start-addressing-the-digital-divide-and-yes-it-is-a-solvableproblem/>
18. Industry Thinkers Magazine featuring Freddie Quek (2023). **Joining the Dots – How Tech Leaders an impact Digital Responsibility.** Online, January: <https://www.inspiredbusinessmedia.com/industry-thinkers-magazine-jan-cio/>
19. Raconteur (2023). **Keeping digital IDs secure yet accessible.** Online, February:

<https://raconteur.net/report/authentication-2022/>

20. The Public Sector Bodies (Websites and Mobile Applications) Accessibility Regulations 2018 (PSBAR) <https://www.legislation.gov.uk/uksi/2018/852/contents/made>
21. Equality Act 2010 <https://www.legislation.gov.uk/ukpga/2010/15/contents>
22. [The-barriers-to-digital-participation.pdf \(wavelength.org.uk\)](#) (2021)
23. [Switching the focus from training to support - 2021.docx](#) (2021)
24. [Socitm Policy Briefing - Digital by choice: Bridging the digital divide - Part 1 Part 2 Part 3](#) (December 2018)
25. [Self-care and longevity through sustainable community-based technologies](#) (Institute and Faculty of Actuaries, Longevity Bulletin Issue 11 September 2018)
26. [How are attitudes and behaviours to the ageing process changing in light of new media and new technology? How might these continue to evolve by 2025 and 2040?](#) (commissioned by Foresight, Government Office for Science 2015).