



**Digital Government**  
**Modernising Political Access**

**Consultation Paper**

**April 2021**

## Introduction

*'The domains of Government and Civic activity are no longer mutually exclusive and are beginning to overlap.'*<sup>1</sup>

The world around us is rapidly changing and moving towards ever-increasing use of technological and digital solutions to help improve our everyday lives. Digital innovations are being developed and implemented across both private and public sectors and government is no exception to this trend. Across the world there are many examples of measures which have been taken at all levels of government to use digital solutions that ensure a more effective and efficient interaction between citizen and government.

## The consultation process

To ensure that this paper accurately reflects the needs of our society and how digital innovation can be best used to improve and further develop the role of government, a two-stage process will be undertaken:

1. Policy consultation: this paper will be published for public consultation and welcomes responses and comments from all.
2. A policy document: after feedback from this paper has been received and adapted, a final policy paper will be created outlining the Democratic Unionist Party's position on electoral reform.

This consultation process will be complemented by two additional papers in the Democratic Unionist Party's 2020/21 policy plan; these being:

- *Infrastructure*
- *Improving electoral participation and voter turnout*

As this is a consultation paper, nothing within this constitutes present party policy.

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<sup>1</sup> <https://www.govtechresearch.com/>

## Promoting digital innovation within the United Kingdom

Across the world, the use of technological and digital innovations and solutions to improve and modernise government services is known as GovTech. GovTech is the way in which we are transforming public services by entrepreneurs using technology<sup>2</sup>. In the United Kingdom, GovTech is shaped by the following six components working in partnership:

1. *Government strategy*
2. *Human capital and a start-up infrastructure*
3. *Open data*
4. *Support from civic institutions*
5. *Hubs of activity*
6. *External investment in GovTech*<sup>3</sup>

The 2017 *State of the UK GovTech Market* report by Public, an organisation promoting technological reform of the public sector, noted that the GovTech market in the United Kingdom is currently in a similar position to that of our FinTech market and is estimated to be worth £20bn by 2025. These figures will only continue to grow as new digital innovations and technologies emerge. The United Kingdom has a real opportunity to become the world's largest GovTech hub – an opportunity which Northern Ireland can hold a key position in<sup>4</sup>.

How digital innovation within government is developed is vital. How do we assess what areas are potential candidates for digitisation and is there a distinct need for this? Within the United Kingdom, the principles necessary to consider when looking to developed digital or technological solutions to government problems are rooted within the 2019 *Technology Code of Practice*:

1. *Define user needs*
2. *Make things accessible and inclusive*
3. *Be open and use open source*
4. *Make use of open standards*
5. *Use cloud first*
6. *Make things secure*
7. *Make privacy integral*
8. *Share, reuse and collaborate*

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<sup>2</sup> <https://www.pwc.co.uk/industries/government-public-sector/govtech.html>

<sup>3</sup> [https://a6a94c1f-bfe5-495b-bcbb-](https://a6a94c1f-bfe5-495b-bcbb-34cdfd0dea77.filesusr.com/ugd/678661_7d9be48110df4611bf19d6e7441279b8.pdf)

[34cdfd0dea77.filesusr.com/ugd/678661\\_7d9be48110df4611bf19d6e7441279b8.pdf](https://a6a94c1f-bfe5-495b-bcbb-34cdfd0dea77.filesusr.com/ugd/678661_7d9be48110df4611bf19d6e7441279b8.pdf)

<sup>4</sup> <https://www.public.io/insight/intelligence/state-of-the-uk-govtech-market-report-key-takeaways/>

9. *Integrate and adapt technology*
10. *Make better use of data*
11. *Define your purchasing strategy*
12. *Meet the Service Standard*<sup>5</sup>

By ensuring that these twelve principles are followed and met, the government can be assured that the resulting transformation provides real benefits to the lives of citizens across the United Kingdom and allows more efficient and effective communication across all government departments. This distinct set of guiding principles also ensures value for money as it prevents unnecessary innovations, or those not fit for purpose, from being created for the sake of having a digital government in name alone.

In recent years, numerous reports have been commissioned and published which outline the measures being taken by both the UK Government and the Northern Ireland Assembly to promote digital solutions to improving government functions. The Department for International Trade (DIT) is committed to positioning the United Kingdom not only as an active player, but as a world leader in technological and digital innovation, and is promoting this through initiatives such as the *Ready to Trade* campaign which has a specific focus on increasing areas such as 'edtech, medtech, cyber, VR, gaming and animation.'<sup>6</sup>

The United Kingdom Government has noted the digital potential of Northern Ireland, highlighting the positive developments which are already being made in areas such as online child safety measures, cyber security solutions through the Centre for Secure Information Technology (CIST) at Queens University, and e-commerce. The *Innovation strategy for Northern Ireland 2014 – 2025* highlights that the public sector can encourage innovation and that government can, and should, lead the way on this. However, the strategy notes that in order to do so, a complete culture change is required with government departments to move away from the traditional methods of the past and to embrace new forward-looking approaches. A certain way of doing something may have worked to date, but will it continue to work in the future, and more importantly, is this the most efficient and effective way in which this can be done? These are the questions we have to ask in all areas of our public sector.

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<sup>5</sup> <https://www.gov.uk/government/publications/technology-code-of-practice/technology-code-of-practice>

<sup>6</sup> <https://www.gov.uk/government/news/bounce-back-plans-for-northern-irelands-tech-sector>

One way to pave the way towards more innovative thinking within the public sector this is to foster a better culture of leadership across all levels of government. The *Innovation strategy for Northern Ireland 2014 – 2025* highlights the need to encourage and promote bottom-up approaches to innovation. This not only results in greater buy-in from staff when changes are introduced, but it also uses the expertise of the individuals who are working with the systems and processes on a daily basis.

*‘If we are to start to make the NI public sector more efficient, bottom-up incremental innovations are a good place to start. To encourage innovation, staff must feel able to change systems and processes, to stop doing things of little or no benefit, and to break from ‘we have always done it this way’ and move to ‘how can we do this better?’ We will therefore ensure that innovation and creativity are incorporated into training and development programmes of public servants and become core competences for managers. We will also introduce a scheme to improve public services by stimulating innovation amongst staff, service users and the wider public. This will include opportunities for innovators to assist in the development and implementation of their ideas.’<sup>7</sup>*

To increasing the effectiveness of the *Innovation Strategy* moving forward, the addition of Key Performance Indicators (KPIs) to better measure their success should be included. As digital innovation is fast paced, a shorter length strategy of roughly three to five years would provide better focus and ensure that the strategy remains up to date of any new developments.

The importance of encouraging an environment where ideas shared and listened to was further reinforced by findings from the 2019 Department of Finance report *Beyond Ideas*, an important document which examined current public sector innovation practices within Northern Ireland. This report noted the following findings:

- *‘Successful innovation in public services is both the creation and implementation of ideas leading to new policies, processes, structures, services and products that improve outcomes for people.*
- *Systemic, radical and incremental innovations are all evident within the public sector.*
- *There is a process of innovation – an ‘innovation curve’ with recognisable stages.*
- *There is evidence that old policies and programmes survive despite weak evidence of positive impact.*
- *How innovation is viewed affects our ability to deliver sustainable change.*

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<sup>7</sup> [https://www.economy-ni.gov.uk/sites/default/files/publications/deti/Innovation-Strategy-2014-2025\\_2\\_0.pdf](https://www.economy-ni.gov.uk/sites/default/files/publications/deti/Innovation-Strategy-2014-2025_2_0.pdf)

- *Public entrepreneurs are 'at work' in our organisations.*
- *Leaders have an opportunity and an obligation to unlock innovation.*<sup>8</sup>

As the *Beyond Ideas* report highlights, innovation is an increasing part of our public sector, but we need to further encourage and promote this, similar to the findings of the *Innovation strategy for Northern Ireland 2014 – 2025*. Deloitte surveyed over 1,200 government officials across 70 countries as part of their paper *The Journey to Government's Digital Transformation*. The key findings from this research are as follows:

- *Governments across the globe are at various different stages of digital transformation*
- *Only 30% believe they are ahead of public sector peers in terms of digital transformation*
- *70% believed they were behind the private sector in digital transformation*
- *Overall confidence is low in terms of organisational readiness and reaction to changing digital trends*
- *Financial pressures and citizen demand are the largest drivers of digital transformation*<sup>9</sup>

What is interesting about these findings is that internal organisational confidence is low across governments and that this is not solely an issue within the United Kingdom. Our focus must be on ensuring that the culture within our public sector is not just open to innovation, but actively encouraging and promoting it.

The *Fostering Innovation in the Public Sector* report published in 2017 by the Organisation for Economic Co-operation and Development provides a comprehensive examination over 254 pages on how governments can better foster digital innovation moving forward. At its most basic level, the report highlights the following four principles as key areas for governments to keep in focus when undertaking innovation:

- *People matter: invest in civil servants as the catalysts of innovation. This involves building the culture, incentives and norms to facilitate new ways of working.*
- *Knowledge is power: facilitate the free flow of information, data and knowledge across the public sector and use it to respond creatively to new challenges and opportunities*
- *Working together: promote new organisational structures and partnerships to improve approaches and tools, share risks, and harness the information and resources available for innovation.*

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<sup>8</sup> <https://www.finance-ni.gov.uk/sites/default/files/publications/dfp/beyond-ideas-ilab-ces-report-sept-2019.pdf>

<sup>9</sup> <https://www2.deloitte.com/si/en/pages/public-sector/articles/digital-government-transformation.html>

- *Rules and processes to support not hinder: ensure that internal rules and processes balance their capacity to mitigate risks with protecting resources and enabling innovation<sup>10</sup>.*

The report also notes that within many public sector settings across the world, there is a feeling that bureaucracy and red tape are often responsible for holding up the innovative process. Interestingly, the report found that this is often due to the way which laws are used or interpreted, and not because of the actual laws themselves. People should be at the heart of innovation and innovation in the public sector takes the following three forms:

1. *'green field' – new system*
2. *'sustaining' – improves existing system*
3. *'disruptive' – system needs to be reinvented<sup>11</sup>*

According to research conducted by Civica, a leading public service software application developer, 90% of Northern Ireland citizens believe that our services are ready for digitisation<sup>12</sup>. Professional services network EY is keen to support greater digitisation of government as a means to increasing public access and confidence. EY notes that the core issue with digitising government is not the innovation and creation of the necessary technology, but the need to transform government itself. It is not enough to create new digital platforms to engage with citizens if the culture within government is not encouraged to change to adapt to this<sup>13</sup>. There are five key areas to be addressed:

1. *Customer experience*
2. *Public value*
3. *Citizen security*
4. *Future workforce*
5. *Smart infrastructure*

All of these areas need to be considered and the correct innovations attached to each.

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<sup>10</sup> <https://oecd-opsi.org/wp-content/uploads/2018/07/Fostering-Innovation-in-the-Public-Sector-254-pages.pdf>

<sup>11</sup> <http://www.oecd.org/gov/fostering-innovation-in-the-public-sector-9789264270879-en.htm>

<sup>12</sup> <https://www.civica.com/en-gb/campaign-library-uk/2019/february/strengthening-northern-irelands-digital-identity/>

<sup>13</sup> [https://www.ey.com/en\\_uk/government-public-sector/how-does-digital-government-become-better-government](https://www.ey.com/en_uk/government-public-sector/how-does-digital-government-become-better-government)

According to research conducted by The World Bank, governments that are more digitised are viewed as more accountable to citizens<sup>14</sup>. This is a positive as greater accountability in government systems can in turn can enhance public confidence and encourage greater interaction between citizens and government. Government services, according to the World Bank, should be based upon three characteristics:

1. *Contextual – the need to individualise data and services to the personal needs of citizens*
2. *Co-ordinated – the ability to share data in an easy and straightforward manner*
3. *Cognitive – advanced and increased use of AI<sup>15</sup>*

Digital democracy increases access and improves efficiency. By changing the way in which we collect, store and share data between government sectors, we can vastly reduce time and resources for both the citizen and the service provider. Another benefit is the financial benefits which result from the digitisation of government services. Figures from the Crown Commercial Service and Government Digital Service show that digital transformation saved the United Kingdom government £891m in 2012/13 and £978m in 2013/14 (using the figures from 2009/10 as a base measure)<sup>16</sup>. In 2016/17 the Government Digital Service saved the United Kin government £450m<sup>17</sup>.

Initiatives to promote innovation within the public sector may include:

- Workshops or training days provided to all staff on innovation and leadership, with a strong focus on encouraging staff at all levels to bring forward ideas to improve or develop new ways of working, both internally and in their interactions with citizens and/or service users
- Forging greater links between the public and private sectors so that examples of best practice in digital and technological innovation can be shared more effectively
- Reducing the length of the Innovation Strategy to ensure greater focus and that it remains up to date with the fast-paced nature of digital innovation
- The introduction of KPIs and agreed work programmes for innovation labs
- The creation of a centralised one-stop-shop to provide businesses with advice and support on both why innovation is vital for all businesses, but also how it can be utilised within their own experience

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<sup>14</sup> <https://www.worldbank.org/en/topic/digitaldevelopment/brief/digital-government-for-development>

<sup>15</sup> <https://www.worldbank.org/en/topic/digitaldevelopment/brief/digital-government-for-development>

<sup>16</sup> <https://gds.blog.gov.uk/2015/10/23/how-digital-and-technology-transformation-saved-1-7bn-last-year/>

<sup>17</sup> <https://gds.blog.gov.uk/2018/07/05/how-gds-is-saving-money-and-thousands-of-hours-through-departments-digital-transformations/>

## The form of digital democracy

The world is currently experiencing what is known as the fourth industrial revolution, a boom in technology and technological innovation. Digital innovation can take many forms and there is no one size fits all approach to it. Whilst this is what can make it difficult to create, it is also what makes it so beneficial in moving our government forward – the fact that it can be tailored to meet a variety of citizen needs. As such, there is more potential now than ever before to examine and incorporate the use of future technologies, such as drones, wearables, robots, advanced computer software, in the workings of government. Digital innovation can be broken down into the following groupings:

1. *Artificial intelligence, machine learning (ML): A set of rules that allows systems to learn directly from examples, data and experience*
2. *Deep learning: ML method that combines details for more abstract higher level features of the data using mathematical functions*
3. *Robotic process automation (RPA): Software that processes transactions, manipulates data from existing systems, triggers responses and communities with other digital systems*
4. *Distributed ledger technology (DLT): A decentralised (trust), resilient, immutable transaction ledger (database) that is cryptographically secure*
5. *Biometrics: Secure identity verification by automatic face, voice, fingerprint or iris recognition*
6. *Voice assistants: Software that listens to voice input and acts on requests (links with AI for intelligent voice – based assistants)*
7. *Augmented reality (AR): Software that dynamically overlays contextual data and information on to real world views*
8. *Virtual reality: Software that creates or replicates environments virtually*
9. *Smart cities: ICT technologies, sensors and datasets combined securely to improve efficiency and manage cities services and assets*
10. *Smart agriculture: Processes that use big data and sensors to improve agricultural yield and protect crops*
11. *Smart homes: Reducing energy and water consumption with smart metres*
12. *Wearables: Sensors worn on the body to dynamically capture health, location, image and other types of data*
13. *Drones and unmanned vehicles: Aircraft and other vehicles controlled autonomously or remotely*
14. *Driverless vehicles: Robotic vehicle designed to travel without human operator<sup>18</sup>*

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<sup>18</sup> <https://www.gov.uk/government/publications/technology-innovation-in-government-survey/technology-innovation-in-government-survey>

The *Technology Innovation in Government Survey 2018* report discusses the five main types of public service innovation which are currently available. These include:

1. *Service innovation: Develop a new service concept or step change improvement to an existing service.*
2. *Process innovation: Rethink entire end-to-end processes that bring significant efficiency and productivity improvements.*
3. *Regulatory innovation: Support new business models and disruptive technologies through regulation and enforcement frameworks while protecting the public and stimulating the economy.*
4. *Policy innovation: Identify constituents' needs and reduce development, testing and implementation times for new policies.*
5. *Technology innovation: Explore emerging and disruptive technologies or combine existing technologies in new ways to develop novel solutions and services<sup>19</sup>.*

AI, machine learning and algorithms are currently being trailed in the UK, particularly in defence and education. Project NELSON is a Ministry of Defence AI project which aims to develop faster decision making in warships, while machine learning is being utilised in our education system to track trends in academic results and in historical underinvestment.

Blockchain, cryptocurrencies and distributed ledgers are also leading the way. Blockchain is currently used by the Department of Agriculture to track the movement of cattle; while Govcoin, a form of cryptocurrency developed by the Department of Work and Pension, is currently being trailed as a method of paying benefits. Project Minerva, is a robot that has been developed to investigate chemical and biohazard sites, removing the risk for humans. The NHS has also been developing the 'Technology Integrated Health Management' system to help those with dementia live their best lives in as normal a setting as possible. Data visualisation, simulation and big data has led to innovations such as 'Sky View 360', a virtual reality system that was created by the Met Office to train meteorologists. There is also

*'DWP has developed Churchill, a novel data visualisation system. This "allows policy makers to safely explore [ONS] data by geography, time and characteristics to develop and deliver data-driven and evidence-based policy". Previously officials would get these data releases in large document packs which*

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<sup>19</sup> <https://www.gov.uk/government/publications/technology-innovation-in-government-survey/technology-innovation-in-government-survey>

*did not always have the exact statistics they needed. Churchill provides instant access to the exact data they need when they are developing policy.*<sup>20</sup>

This shows that digital innovation is making real life positive impacts across the whole of the public sector. This is an excellent base from which to build upon. Too often we do not hear enough positive stories of what innovations have worked. Examples of good practice must be shared and adapted.

### **Examples of digital government across the United Kingdom**

Across the United Kingdom there are valuable examples of how digital and technological innovation is helping to improve citizens experience of interacting with government. In Northern Ireland, Smart Belfast is an impressive digital innovation initiative which combines the expertise of ‘universities, businesses, local government and citizens to collaborate, innovate and experiment using cutting-edge technologies and data science’ in order to create a better Belfast to live in, work in, and invest in<sup>2122</sup>.

The Smart Belfast Framework outlines the following priority areas for innovation:

- *Growing the economy (creating jobs and investments)*
- *Living here (making life better for all our residents)*
- *City development (creating a competitive and sustainable city)*
- *Working and learning (connecting people to opportunities)*<sup>23</sup>

Projects to achieve these priorities are the assessed using the following eight guiding principles:

1. *A focus on outcomes for citizens*
2. *Demand -led innovation*
3. *Partnership and collaboration*
4. *Support for local business and entrepreneurs*
5. *Build-as-you-go data infrastructure*
6. *An open ecosystem*
7. *Digital and data projects*
8. *Data security*<sup>24</sup>

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<sup>20</sup> <https://www.instituteforgovernment.org.uk/explainers/future-technology-government>

<sup>21</sup> <https://smartbelfast.city/>

<sup>22</sup> <https://www.belfastcity.gov.uk/digitalinnovation>

<sup>23</sup> <https://smartbelfast.city/wp-content/uploads/2018/04/Smart-Cities-Framework.pdf>

<sup>24</sup> <https://smartbelfast.city/wp-content/uploads/2018/04/Smart-Cities-Framework.pdf>

The eight guiding principles developed by Smart Belfast could provide a basis to further policy proposals across the wider public sector as these cover the necessary areas that Northern Ireland will need to address to promote further digital transformation across all levels of government.

At a more basic user level digital innovation is already improving citizens experience of filling out and submitting forms. The Digital Transformation Service and NIdirect website has been making real steps towards greater digital inclusion<sup>25</sup>. Individuals can now complete and submit AccessNI forms online which has drastically reduced the time spent completing the forms. For those renewing their driving licence every ten years without a medical issue which needs to be disclosed, this can now also be done online. This not only saves time and paper, but also ensures that the new licence can be received sooner than if the form had to be posted. The new Police Service of Northern Ireland criminal justice data sharing platform allows information to be shared much more quickly and effectively than previously was the case<sup>26</sup>.

In England, numerous examples of digital government innovation can be found at local government level, addressing a wide variety of issues. These include work conducted in partnership between Bristol City Council and Bristol university to improve their integrated transport hub through the use of big data.

Eddie Copeland, of the London Office of Technology and Innovation (LOTI), has outlined a case for digitally transforming London based on the successful use of big data by New York City. In the report *Big Data in the Big Apple*, an argument is made for the appointment of a Data Tsar who would manage a team of analysts to collect and utilise data from all 33 London boroughs, as well as emergency services<sup>27</sup>. This would provide data such as optimising new business growth and success by using data to pinpoint where new businesses should open to secure maximum footfall, and combining public complaints with online reviews of restaurants and food places to better assess what establishments could pose a food safety risk to customers.

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<sup>25</sup> <https://www.finance-ni.gov.uk/digital-transformation-service>

<sup>26</sup> <https://digileaders.com/northern-ireland-to-strengthen-as-a-digital-leader/>

<sup>27</sup> <http://eddiecopeland.me/wp-content/uploads/2015/11/Big-Data-in-the-Big-Apple-Report.pdf>

A similar initiative could be utilised in Belfast, bringing various data sets and organisations together and could also incorporate public transport.

Other local government examples include:

*Westminster is implementing smart parking to tell drivers where they can find a parking space. Smart parking cuts congestion and improves the experience of coming into the city centre. Transport for London is developing ticketless public transport by integrating and promoting the use of contactless payment cards.*

*Newcastle upon Tyne is developing an innovation centre focussed on data and cloud computing, which also acts as a living lab to test smart energy grids, sustainable urban drainage and building sensors.*

*Glasgow has introduced smart street lighting that not only is energy efficient but also monitors noise and air pollution and supports community safety measures.*

*'Gloucester City Council and Gfirst Local Enterprise Partnership has commissioned Marketing Gloucester to test and develop town-wide future city technologies including opening the UK:DRIC -a new national centre for digital retail innovation within a city shopping centre<sup>28</sup>.*

*Leeds City Council has worked with the city's BID to offer a free digital service providing real-time key city intelligence to businesses (footfall, parking etc.) and a communications hub for information sharing.<sup>29</sup>*

A cross-government scheme consisting of local governments, Passport Services, DVLA and the HMRC, known as *Tell Us Once* (TUO), has been developed so that individuals can inform government about a birth or death only once.

*Latest estimates are that Tell Us Once is delivering total benefits of £22 million annually. The service achieved a 98 per cent customer satisfaction rating in the Tell Us Once customer survey 2013, and councils are also benefiting from the efficiencies in back-office processing that the service enables. Kirklees Council*

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<sup>28</sup> <https://www.local.gov.uk/topics/economic-growth/revitalising-town-centres-toolkit-councils/function/digital-technology-and>

<sup>29</sup> <https://www.local.gov.uk/topics/economic-growth/revitalising-town-centres-toolkit-councils/function/digital-technology-and>

has offered Tell Us Once for two years and almost 90 per cent of all people registering births and deaths in Kirklees use the service. As a direct result of the use of the service, the following benefits have been achieved:

- 809 housing issues have been resolved
- 1,610 Blue Badges have been safely returned following the death of the older person
- 2,579 adjustments have been made to Housing Benefit
- 3,534 new parents have been contacted by Family Information Services
- 3,754 new library members have been enrolled
- 4,740 changes have been made to the Electoral Register<sup>30</sup>

Initiatives may include:

- A trial of a similar scheme to Tell Us Once in Northern Ireland to streamline the process of registering a birth or a death
- Encouraging organisations and government departments to conduct a review into which services they operate which could be transformed onto an online platform
- Streamlining the process through which information and data is shared between departments within the Northern Ireland Assembly

### **The practical conditions of digitising government**

In order to move towards further digitisation in government democracy, certain conditions need to be met. Talent is an important and necessary factor for the future of innovation<sup>31</sup>. Northern Ireland is in a great position for this as it already has a highly skilled and talented workforce<sup>32</sup>. There is also a role to be played by the education system in promoting innovation at an early age, both within the classroom and through careers advice.

According to Deloitte, there are a range of key questions which public leaders have to consider when examining digital government innovation. These are:

- *Strategy: 'Do we have a clear and coherent digital strategy that addresses the key elements of digital transformation?'*
- *User focus: 'How can citizens and service users be part of our digital transformation?'*

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<sup>30</sup> <https://www.local.gov.uk/sites/default/files/documents/transforming-public-servi-80e.pdf>

<sup>31</sup> <https://www.businesschief.eu/technology/northern-ireland-small-region-big-tech-ambitions>

<sup>32</sup> <https://www.investni.com/invest-in-northern-ireland/technology>

- *Culture: ‘What have we done to strengthen our organization’s innovative and collaborative culture?’*
- *Workforce skills: ‘Have we looked at our talent pool and planned where our skills will come from?’*
- *Procurement: ‘Are our organization’s existing procurement processes suitable to procure digital solutions?’<sup>33</sup>*

As part of this consultation, we welcome feedback and comments on how Northern Ireland is addressing these questions and what more can be done on these areas.

Within the United Kingdom, the government service manual for digital government highlights the following practical principles which must be considered when under taking digital transformation in government:

- *Understand users and their needs*
- *Solve a whole problem for users*
- *Provide a joined up experience across all channels*
- *Make the service simple to use*
- *Make sure everyone can use the service*
- *Have a multidisciplinary team*
- *Use agile ways of working*
- *Iterate and improve frequently*
- *Create a secure service which protects users’ privacy*
- *Define what success looks like and publish performance data*
- *Choose the right tools and technology*
- *Make new source code open*
- *Use and contribute to open standards, common components and patterns*
- *Operate a reliable service<sup>34</sup>*

Whilst this is a substantial list and can appear off-putting as it incorporates so much, these principles are vital to ensuring that citizens remain at the forefront of the conversation surrounding digital transformation.

## **Increasing internet literacy**

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<sup>33</sup> <https://www2.deloitte.com/ie/en/pages/public-sector/articles/digital-gov-tran-report.html>

<sup>34</sup> <https://www.gov.uk/service-manual/service-standard>

There is an issue in moving towards greater reliance on digital democracy and that is the risk of leaving many of our most vulnerable members of society behind. For example, elderly, BAME, low income and disabled individuals may not be able to keep up to date with technological changes and may need help in understanding and accessing IT systems.

The Office for National Statistics published research in 2019 which outlines the extent of digital exclusion across the United Kingdom and what can be done to address this<sup>35</sup>. Many factors effect access to the internet, including confidence, socio-economic background, age, disability and education. In 2018, 10% of the adult population, a striking 5.8 million adults, of the United Kingdom can still be described as ‘non internet users’. This statistic is concerning. Digital democracy can open doors for citizens by improving access and reducing time spent on forms etc. However, these benefits mean nothing if the those who would benefit most from these changes cannot access it. Access to the internet is an important theme globally and is even highlighted under Sustainable Development Goal Indicator 17.8.1, regarding whether individuals have used the internet within last three months.

The 2018 UN E-government survey *gearing e-government to support transformation towards sustainable and resilient societies* has been examining how governments across the world have been working towards increased digital innovation<sup>36</sup>. The findings from this survey highlight that there is a global divide, with European countries leading the way on e-government, followed by countries in the Americas and Asia. However, African countries are struggling to engage with digital government transformation. On a positive note, the number of countries that our providing online services to citizens has increased from 154 in 2016 to 176 in 2018 and more effort is being put into targeting online services to vulnerable groups in societies.

Measuring digital inclusion is vital and the Tech Partnership Basic Digital Skills framework provides a list of the five digital skills to use when measuring digital inclusion. These are:

- *managing information: using a search engine to look for information, finding a website visited before or downloading or saving a photo found online.*

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<https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04>

<sup>36</sup> <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018>

- *communicating: sending a personal message via email or online messaging service or carefully making comments and sharing information online.*
- *transacting: buying items or services from a website or buying and installing apps on a device.*
- *problem solving: verifying sources of information online or solving a problem with a device or digital service using online help.*
- *creating: completing online application forms including personal details or creating something new from existing online images, music or video.*
- *There is an opportunity for more involvement from local community groups and organisations to get involve to both offer and promote IT literacy courses<sup>3738</sup>.*

Promoting digital literacy creates a wide range of benefits for citizens, as well as giving them the skills necessary to able to access government resources online. According to findings from the Centre for Economics and Business Research (CEBR), basic digital skills can result in the following benefits for individuals:

- *earnings benefits: these relate to increased earnings of between 3% and 10% through acquiring digital skills.*
- *employability benefits: this reflects the improved chances of finding work for someone who is unemployed and an increased likelihood that someone who is inactive will look for work.*
- *retail transaction benefits: shopping online has been found to be 13% cheaper on average than shopping in-store.*
- *communication benefits: basic digital skills can enable people to connect and communicate with family, friends and the community 14% more frequently.*
- *time savings: these relate to the time saved by accessing government services and banking online rather than in person, estimated to be about 30 minutes per transaction.<sup>39</sup>*

As such, there is an onus on government to promote digital literacy and to help keep citizens up to date with the different forms of digital technology which are out there. In Northern Ireland, there are already positive examples of initiatives to teach basic digital skills. Go On NI is a free initiative by NIdirect which aims to take individuals who have little to no experience of the internet and teach them

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<https://www.ons.gov.uk/peoplepopulationandcommunity/householdcharacteristics/homeinternetandsocialmediausage/articles/exploringtheuksdigitaldivide/2019-03-04>

<sup>38</sup> [https://www.lloydsbank.com/assets/media/pdfs/banking\\_with\\_us/whats-happening/LB-Consumer-Digital-Index-2018-Report.pdf](https://www.lloydsbank.com/assets/media/pdfs/banking_with_us/whats-happening/LB-Consumer-Digital-Index-2018-Report.pdf)

<sup>39</sup> [https://cebr.com/wp/wp-content/uploads/2015/11/The-economic-impact-of-digital-skills-and-inclusion-in-the-UK\\_Final.pdf](https://cebr.com/wp/wp-content/uploads/2015/11/The-economic-impact-of-digital-skills-and-inclusion-in-the-UK_Final.pdf)

the basic skills necessary<sup>40</sup>. These courses are held across Northern Ireland in various libraries, community groups and other venues. Libraries NI also offer their own free IT literacy courses for beginners through their 'Got IT?' programme<sup>41</sup>. This programme offers the following courses:

- Introduction to computers
- Introduction to the Internet
- Introduction to email

Initiatives to increase digital literacy within Northern Ireland may include:

- Funding to supporting computer literacy programmes within local community groups and senior citizen organisations
- Reviews of current digital government initiatives to assess how user friendly and accessible they are

### **Improving WiFi coverage in Northern Ireland**

In order to implement the digital innovation necessary to transform our digital government, the correct infrastructure must be in place. There have been problems regarding broadband coverage across Northern Ireland, particularly in more rural areas. Many people within our rural communities struggled to be connected to the internet. Even those who do have access to the internet often experience slow internet speeds or disrupted connections. This is unacceptable and is something that the DUP is committed to improving.

Under the Confidence and Supply Agreement between the Conservative Party and the Democratic Unionist Party, £1 billion of funding was secured for Northern Ireland. £75 million of this funding was allocated to broadband development over a period of two years<sup>42</sup>. Project Stratum is a Department for the Economy initiative which aims to extend the scope of our WiFi network in Northern Ireland to an approximate 79,000 additional premises<sup>43</sup>. Part of the focus of this project is to address the lack of internet access available in more rural communities. On the 18<sup>th</sup> November 2020 it was announced

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<sup>40</sup> <https://www.nidirect.gov.uk/information-and-services/go-ni/discover-internet>

<sup>41</sup> <https://www.librariesni.org.uk/Services/Computers/Pages/Got-IT.aspx>

<sup>42</sup> <https://commonslibrary.parliament.uk/confidence-and-supply-northern-irelands-1-billion/>

<sup>43</sup> <https://www.economy-ni.gov.uk/topics/telecoms/project-stratum>

that Fibrus had won the contract to delivery Project Stratum<sup>44</sup>. This project will be implemented over several years. Government funding projects to promote full fibre broadband are outlined in the table below:

Table 1: Future Full Fibre projects planned for NI, June 2020<sup>45</sup>

<i>Project</i>	<i>Funding</i>	<i>Source</i>	<i>Target</i>
<i>Stratum</i>	<i>£165m</i>	<i>UK Government: £150m £15m DAERA  The company that is awarded the contract will make up the private sector contribution</i>	<i>DfE has identified 79,000 premises, known as 'white' premises where there is no qualifying broadband infrastructure and none is likely to be developed in 3 years</i>
<i>Local Full Fibre Networks Programme</i>	<i>£27.9m</i>	<i>Full Fibre NI £15m Council fund £12.9m</i>	<i>2021-LFFN funding due to be invested across all council areas</i>
<i>Digital Infrastructure Investment Fund</i>	<i>£400m UK wide</i>	<i>UK Government</i>	<i>2021-focusing on ultrafast broadband</i>
<i>Rural Gigabit Connectivity Programme</i>	<i>£200m</i>	<i>DCMS (UK wide including NI)</i>	<i>£1,500 voucher for households £3,500 vouchers for businesses</i>

The Covid-19 pandemic and subsequent lockdown has changed our lives in ways that may have longer term consequences for how we do day to day activities. With the national lockdown, many people found themselves working at home who had never previously done so. Our education system also had to move towards online teaching, a new experience for everyone involved. Having fast and quality broadband across Northern Ireland is now more important than ever before. With face to face services being next to impossible, having online access to government services became more vital than ever before. Since lockdown there has been an increase in both e-health services and the digitalisation of education and this trend is only going to increase further as demand for online services

<sup>44</sup> <https://www.bbc.co.uk/news/uk-northern-ireland-54967504>

<sup>45</sup> Johnston, R. and McCausland, G. (2020), Broadband infrastructure and boosting economic recovery: the role of full fibre in NI, Ulster University: Belfast

continue to grow<sup>46</sup>. A 2020 report by Ulster University for Openreach NI highlights that making the digital accessibility of government services a key priority<sup>47</sup>. As the report notes:

*'Government services were also moving online in advance of the COVID-19 pandemic. Like many other activities, the pandemic will help to accelerate these trends. Passport applications, driving licences, planning applications, court appearances, grant applications etc. are increasingly carried out through online platforms and the restrictions will help to normalise the online processes over face-to-face interaction.'*<sup>48</sup>

Initiatives to improve WiFi coverage across Northern Ireland may include:

- Continued work ensuring that our WiFi infrastructure is continuously updated and increased with the aim that all households and premises in Northern Ireland have access to affordable, reliable and fast broadband

### **The cost of digital public sector reforms**

Public sector reforms are essential, but can prove to be costly. In 2019, the Northern Ireland Civil Service took out a contract with Stiona Software for its digital toolkit service. This contract is estimated to be worth between £5.5m to £11m<sup>49</sup>. The aim of the digital toolkit service is to improve the creation of online digital services, particularly in terms of time and cost savings. Through the Digital Transformation Service, the aim is to have 70% of all citizen transactions with Government online by the end of 2019. To date, it is difficult finding figures to ascertain whether this has been achieved or not.

The Department for Infrastructure and ten local councils have signed a contract with Terraquest to develop a new regional IT system that will replace the current Northern Ireland Planning Portal at a total investment of £14m.

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<sup>46</sup> <http://www.oecd.org/regional/>

<sup>47</sup> Johnston, R. and McCausland, G. (2020), *Broadband infrastructure and boosting economic recovery: the role of full fibre in NI*, Ulster University: Belfast

<sup>48</sup> Johnston, R. and McCausland, G. (2020), *Broadband infrastructure and boosting economic recovery: the role of full fibre in NI*, Ulster University: Belfast

<sup>49</sup> <https://www.globalgovernmentforum.com/digital-toolkit-to-provide-platform-software-for-northern-ireland-public-bodies/>

*'The current system supports the planning system with over 12,000 planning applications per year. It is used by over 700 staff, over 500 consultees and thousands of citizens annually.*

*It is expected that the new system will be phased in from late 2021 to early 2022 and users will be informed of the changes within each council area, at the appropriate time.<sup>50</sup>*

The *Transforming local public services* report published by the Local Government Association includes a table highlighting the cost differences for government between face-to-face contact, phone contact and web contact with citizens from different reports. Whilst these figures need updating, it still provides an idea of the potential savings to government<sup>51</sup>.

*Table 2: Cost comparisons between methods of interacting with service users*

<i>Source Channel</i>	<i>Socitm Insight May 2012</i>	<i>Socitim Insight Data 2009</i>	<i>NWeGG 2006</i>	<i>Consultant study for council partnership April 2009</i>
<i>Face-to-face</i>	<i>£8.62 per transaction</i>	<i>£8.23 per visit</i>	<i>£7.81</i>	<i>£5.51</i>
<i>Phone</i>	<i>£2.83 per transaction</i>	<i>£3.21 per call</i>	<i>£4.00</i>	<i>£2.53</i>
<i>Web</i>	<i>£0.15 per transaction</i>	<i>£0.39 per visitor</i>	<i>£0.17</i>	<i>£0.17</i>

Initiatives to fund the digitisation of government may include:

- Dedicated funding to ensure that our public sector is able to make the necessary changes to its operations to continue to provide the best quality service for users in an increasingly digital age.

### **International examples**

One of the most successful case studies of digital government is Estonia<sup>52</sup>. A 2019 study conducted by the European Union on Digital Government highlighted Estonia as outperforming other EU countries in the four key areas of User Centricity, Transparency, Cross Border Mobility (Citizen and

<sup>50</sup> <https://www.infrastructure-ni.gov.uk/news/contract-awarded-new-northern-ireland-planning-it-system>

<sup>51</sup> <https://www.local.gov.uk/sites/default/files/documents/transforming-public-servi-80e.pdf>

<sup>52</sup> <https://e-estonia.com/solutions/e-governance/e-cabinet>

Business) and Key Enablers<sup>53</sup>. Around 99% of all public services in Estonia are available online 24/7. These are known as e-services. Marriage, divorce and real estate transactions are the exception to this. The move to e-services has saved Estonia an estimate of 844 years of work time annually. It has also been hailed as creating a more positive environment for business and entrepreneurship to thrive.

In moving the majority of services online, Estonia has created a secured shared database Keyless Signature Infrastructure (KSI) in order to hold government information in a way that is both safe and accessible. Citizens in Estonia can use the KSI database to electronically sign online official documents and to check their authenticity, hence adding an extra layer of accountability to the digital government<sup>54</sup>.

Estonia has also digitised its cabinet meetings. The e-cabinet, as it is known, provides ministers with all documents online prior to the meeting. If a minister wishes to speak on a subject or they have any objections, this is noted and then raised during the meeting. Any documents brought to the meeting with no comments are then approved without any debate necessary. As a result, cabinet meeting times have fallen from 4 to 5 hours to between 30 to 90 minutes and the decision-making process is 10 times more efficient. Added benefits to this include a major reduction in the printing of multiple copies of paper documents, a benefit which is both positive for the environment and reduces costs.

Questions surrounding security are vital to all conversations regarding the digitisation of government services and Estonia has been proactive in ensuring that cybersecurity is at the core of its digital government. The Cybersecurity Strategy 2019 to 2022 bases its commitment towards security around four key themes:

- *'Estonia is a sustainable digital society relying on strong technological resilience and emergency preparedness.*
- *Estonian cybersecurity industry is strong, innovative, research-oriented and globally competitive, covering all key competences for Estonia.*
- *Estonia is a credible and capable partner in the international arena.*

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<sup>53</sup> [https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital\\_Government\\_Factsheets\\_Estonia\\_2019.pdf](https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital_Government_Factsheets_Estonia_2019.pdf)

<sup>54</sup> <https://www.instituteforgovernment.org.uk/explainers/future-technology-government>

- *Estonia is a cyber literate society and ensures sufficient and forward-looking talent supply.*<sup>55</sup>

In 2015, the then Finance Minister Simon Hamilton oversaw a five-year agreement between Northern Ireland and Estonia to build stronger IT relationships between the two countries and to learn from what has been achieved in Estonia<sup>56</sup>.

Examples of digital government are not limited to Europe. Asian countries have also provided us with examples of good practice. In South Korea, government strategy has been published which outlines how 'intelligent IT' can be applied to government services such as administrative services, welfare services, law enforcement and military. A new system known as MeGov is also currently in development. This will provide more personalised responses to the needs of individual citizens<sup>57</sup>. In the capital city of Seoul, a new policy known as Seoul 50+ is using digital innovation to address the issues of an increasingly aging population. The Seoul 50+ policy:

*'represents an innovative convergence of social welfare, employment and life-long learning policies, geared towards addressing the needs of an ageing society. The policy addresses the needs and characteristics of citizens aged between 50-64 and enables them to remain active, work and participate in community life.'*<sup>58</sup>

The Seoul Metropolitan Government is also committed to creating new infrastructure in partnership with this policy.

The Observatory of Public Sector Innovation (OPSI) 2018 report *Embracing Innovation in Government – Global Trends 2018* includes numerous examples of digital government innovations from across the world<sup>59</sup>. The Australian Trade Mark Search, an AI tool which provides companies with a service where they can create a unique trademark and reduces the time companies spend on ensuring that their trademark is not similar to others. This is an example of how digital government can help to streamline processes for companies and businesses. Another example of good practice from across the world is APEX, a government wide platform from Singapore that uses application programming interfaces (APIs) to allow easier and quicker sharing of data across public and private agencies. A key component

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<sup>55</sup> [https://www.mkm.ee/sites/default/files/kyberturvalisuse\\_strateegia\\_2022\\_eng.pdf](https://www.mkm.ee/sites/default/files/kyberturvalisuse_strateegia_2022_eng.pdf)

<sup>56</sup> <https://matrixni.org/>

<sup>57</sup> <https://www.instituteforgovernment.org.uk/explainers/future-technology-government>

<sup>58</sup> <http://www.oecd.org/innovation/innovative-government/innovation2018.htm>

<sup>59</sup> <http://www.oecd.org/innovation/innovative-government/innovation2018.htm>

of this platform is that it promotes innovation through a central catalogue where common APIs can be used to create new services, hence ensuring that the platform can develop and evolve to meet the needs to citizens.

Our closest neighbour, the Republic of Ireland, has been increasing its digital government infrastructure, as outlined within the 2018 National Public Procurement Policy Framework and the Public Service Data Strategy for the period 2019-2023. This includes the creation of a new website to allow easier citizen access of all online government services and the expansion in 2018 of high-speed networks connecting agencies across Ireland through the Government Network (GN)<sup>60</sup>.

### **Northern Ireland as a potential leader of digital services**

Northern Ireland has the potential to become a world leader in both digital services, and in providing the technology and support necessary for them. This is an opportunity which cannot be ignore. This will be discussed further as part of the public consultation on digital government.

A 2008 research paper by the Northern Ireland Assembly on innovation highlighted potential barriers which exist to innovation. Whilst the focus of that paper was on business, and it is now twelve years old, a number of the barriers discussed could also be extended to the digitisation of government and are still relevant today. The barriers are both external and internal to business, or in our scenario government, and may be perceptual, e.g., given more significance than necessary due to the perception of those within government/the organisation innovating.

#### *'External*

- *Market Related – includes: market risk, market failure, supply and demand deficiencies, a lack of appropriate skills in the labour market, a lack of innovative users, etc.*
- *Government Related – includes: policies designed to correct market failure, standards imposed by national or supra-national bodies, bureaucratic procedures, policy communication, regulatory frame work, intellectual property frame work, tax systems, lack or suitable institutions or the inadequate performance of existing one, etc.*

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<sup>60</sup> [https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital Government Factsheets Ireland 2019.pdf](https://joinup.ec.europa.eu/sites/default/files/inline-files/Digital%20Government%20Factsheets%20Ireland%202019.pdf)

- *Technical – includes: standards, changes, the risk of technological obsolescence or picking the wrong technology.*
- *Societal – includes: norms and values, attitudes towards science, socio-economic change, and the existence or lack of a culture of entrepreneurship.*
- *Inter-organisational – refers to cooperation between firms on a regional, national or international level.*

#### *Internal*

- *People – includes, at individual and group level (with a possible separation between management and employees): bias (towards a type of work or product), motivation, skills, vested interests (and conflicts there of), and personal goals (conflicting with company goals). Management specific: occupied with current projects, adoption of a conservative attitude, not tolerant of failure and an aversion to risk.*
- *Structural – affects the behaviour of an organisations members, includes: inadequate communication flows, inappropriate incentive systems, obstruction from departments, centralisation of power, rigid hierarchical system, lack of time, organisation of work, lack of delegation and specialisation, cultural inertia and internal politics.*
- *Strategy – goals, complacency, reluctance to abandon a certain present for an uncertain future, inability to form networks, resource related (lack of funds, lack of machinery) and lack of R&D strategy.<sup>61</sup>*

Initiatives to promote Northern Ireland as a leader in digital innovation may include:

- Further examining Estonia as a case study to develop how we could further the digital innovation of our government services

#### **Conclusion**

The move towards greater digital innovation in government is increasing in speed and Northern Ireland has the opportunity to be right at the forefront of this movement, not just in the United Kingdom, but on a global platform. We have the workforce with the skills necessary to encourage and promote innovation. In terms of population size, we are similar to Estonia and as such can learn much

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<sup>61</sup> <http://www.niassembly.gov.uk/assembly-business/committees/2007-2011/enterprise-trade-and-investment/research-papers/an-overview-of-innovation-in-northern-ireland/>

from their model of digital government. There is a real appetite for this in Northern Ireland and the Democratic Unionist Party want to be at the forefront of positive, transformative public sector innovation and digitisation.

We welcome all comments and feedback.

## Questions

1. Are there any example of digital government good practice which have not been included within this paper?
2. Are there any areas of government which you believe are suitable candidates for digitisation?
3. Are there any private sector examples of digitisation which could be utilised within the private sector?
4. How do we ensure that the most vulnerable in our society are not left behind as we further the move towards digital government?

Please send responses and comments to Ashleigh Perry at [ashleighperry@dup.org.uk](mailto:ashleighperry@dup.org.uk) by 21/05/2021