

DIGITAL GLASGOW: 2020 REVIEW

TWO YEARS ON. A REVIEW OF GLASGOW'S PROGRESS
TOWARDS BECOMING ONE OF THE MOST INNOVATIVE AND
PIONEERING SMART CITIES IN THE WORLD



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1. PURPOSE

The **Digital Glasgow Strategy**¹, published in October 2018, sets out our priorities and commitments to developing Glasgow's digital economy and transforming our public services through the use of digital technology. It is a bold and comprehensive strategy that recognises the rate and scale of technological change and the opportunities for (and challenges to) global economies society, and the delivery of public services. It sets out a vision for Glasgow to be;

A world class city with a thriving digital economy and community, where everyone can flourish and benefit from the best digital connectivity and skills, where technology is used to improve everyone's quality of life, drive businesses' innovation and service design and improve our city, its neighbourhoods and its success".



The purpose of this report is to;

1. Provide a summary of the progress that has been made implementing the strategy and the impact that digital is having on Glasgow's economy and public services,
2. Summarise major achievements in the delivery of the strategy since it was launched,
3. Note the challenges and barriers that have been overcome, or will need to be overcome to enable the strategy to be implemented,
4. Note the impact that COVID-19 has had on the implementation of the strategy,
5. Set out key recommendations for the next phase of implementation.

[Section 2](#) of this report provides an introduction to the strategy and summarises the initial focus for implementing the strategy (including an overview of the impact of COVID-19 on the implementation of the strategy), [Section 3](#) provides a summary of the progress for the Digital Economy, [Section 4](#) provides a summary of the progress for Digital Public Services, and [Section 5](#) sets out priorities for next for the phase of implementation. A detailed summary of the progress made against each action contained within the strategy is contained in [Appendix A](#) (Digital Economy Action Plans) and [Appendix B](#) (Digital Public Service Action Plans)

¹ <https://www.glasgow.gov.uk/CHttpHandler.ashx?id=43572&p=0>

2. INTRODUCTION

2.1. STRATEGIC AIMS

The Digital Glasgow Strategy is a strategy for the city. Underpinning the vision, it sets out two broad aims;

Our First Aim is:

*"We want businesses across all of our sectors to realise the potential that digital provides, to stimulate innovation, and to establish Glasgow's tech sector as a **top 20 global digital economy.**"*

Our Second Aim is:

*"We want Glasgow to be recognised as **one of the most pioneering and innovative smart cities in the world,** and we want to apply this innovation to transforming our public services."*

2.2. STRUCTURE OF ACTION PLANS

The Digital Glasgow Strategy contains two sets of action plans. The action plans for Digital Economy focus on interventions for the economic and society, The action plans for Digital Public Services focus on interventions relating to how digital is used to deliver public services.

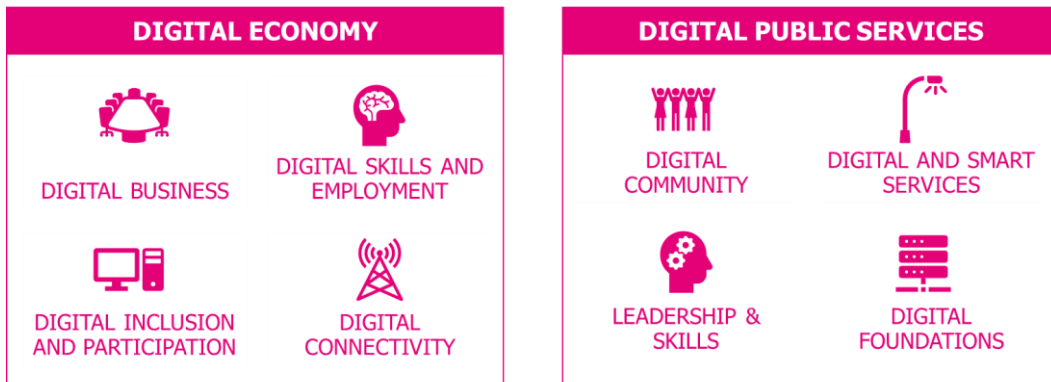


Figure 1 - Strategic Action Plans

A summary of progress for each individual action contained within the action plan is provided in Appendix A (status update for Digital Economy Action Plans) and Appendix B (status update for Digital Public Service Action Plans).

Table 1 - Detailed Breakdown of Strategic Action Plans

DIGITAL ECONOMY	<u>Digital Business</u> <u>Digital Skills and Employment</u> <u>Digital Inclusion and Participation</u> <u>Digital Connectivity</u>
DIGITAL PUBLIC SERVICES	Digital & Smart Services <ul style="list-style-type: none"> • <u>Digital Customer Experience</u> • <u>Digital Health and Care</u> • <u>Digital Learning and Teaching</u> • <u>Digital Planning</u> • <u>Smarter City Management</u> • <u>Digital Tourism</u> <u>Digital Community Engagement</u> <u>Digital Leadership and Skills</u> Digital Foundations <ul style="list-style-type: none"> • <u>Data</u> • <u>Technology</u>

2.3. INITIAL FOCUS FOR IMPLEMENTATION

Progress has been made across all of these action plans, however, given the scale and comprehensive nature of the Digital Glasgow ambition, there has been an initial focus for those actions that are more foundational (such as digital inclusion and participation, digital connectivity, digital leadership, data, and the Council’s own technology infrastructure) as illustrated below;

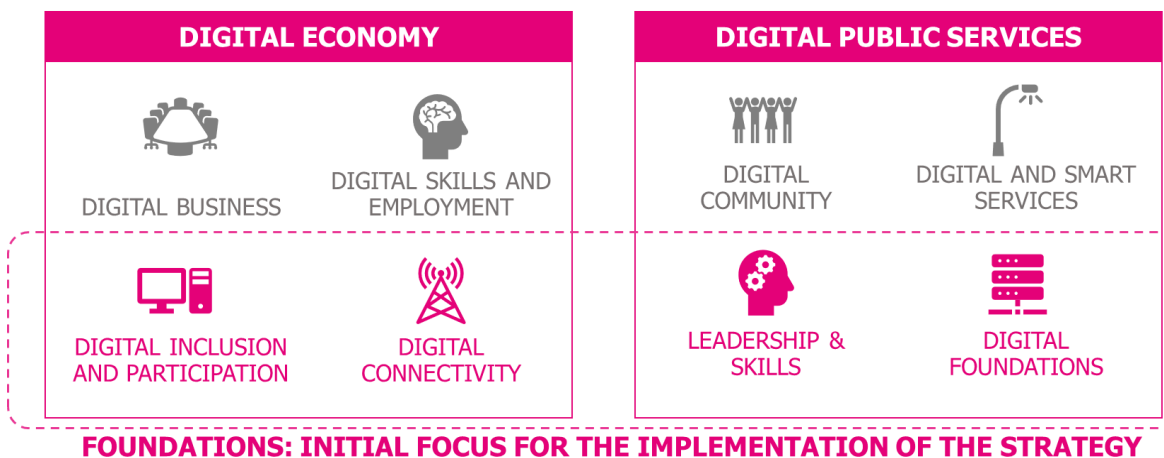


Figure 2 – Building the foundations of the Digital Strategy

Although much of the investment has been made in at this foundational level, In some cases significant progress has also been made in other areas (for example, Digital Skills and Employment, and Digital and Smart Services).

2.4. IMPACT OF COVID-19

COVID-19 has had (and continues to have) a major impact on the implementation of the strategy. In some cases the consequences of the pandemic (for example, lockdown) has it has exacerbated existing challenges (such as digital exclusion), in some cases it has delayed implementation, and in some cases it has accelerated implementation of the strategy. The

COVID-19 emergency has impacted nine months of the first two years of the implementation of the strategy.

The impacts are summarised below;

1. IMPACT ON EXISTING ECONOMIC AND SOCIETAL CHALLENGES

Digital Rights

The Digital Glasgow Strategy places the importance of digital inclusion, accessibility, ethics, transparency and privacy. Supporting the United Nations principle that digital rights are human rights for the digital era, Glasgow joined the Cities for Digital Rights in November 2019 to become a signatory of the Declaration for Cities for Digital Rights and to collaborate with global cities². The introduction of lockdown measures and physical distancing has exacerbated the existing challenges of **digital exclusion**, and the importance of **ethics, transparency** and **privacy** has been placed front and central to how the public sector uses digital technology and data to respond to the crisis. As reported by Good Things Foundation³ *“Digital has instantly become a universal need, and those without it are also those who have been hardest hit.”*

Digital Resilience of Businesses

It is clear that those businesses that could quickly ‘pivot’ to leverage technology and continue trading have fared better than those businesses who had lower level of digital adoption and skills, leading many cities to consider how to drive up use of digital technologies both to support economic recovery and to ensure a level of resilience.

2. INTERRUPTION TO IMPLEMENTATION PLANS

Prioritisation of Response and Recovery Activities

To manage the consequences of the pandemic, Glasgow City Council has had to prioritise service delivery to those who needed it most, whilst at the same time initiating its own business continuity plan. Digital, ICT and data staff have been at the centre of support the initial response to, and recovery from the pandemic. Examples of some of the digital solutions that have been deployed at scale in short-timescales include;

EXAMPLES OF DIGITAL RESPONSE TO COVID-19 EMERGENCY

- Use of data analytics to identify shielded people and people at particular risk from COVID-19 in the city in order to offer support,
- A solution to enable the council, partners, and volunteers to support shielded and people at particular risk from COVID-19 during lockdown,
- Migration of the Council’s contact centre to a home-based “virtual contact centre”,
- Rapid and large-scale enablement of homeworking for council staff,
- 3D printing of face-visors for care staff,
- Re-instatement of committees using video collaboration and live streaming.
- Rapid deployment of video collaboration for staff,
- Automating pedestrian crossing within the city centre to remove the need for people to push the button,

² <https://citiesfordigitalrights.org/glasgow>

³ <https://www.goodthingsfoundation.org/research-publications/covid19-response-report>

Pausing of Activities that required Physical Contact

Activities that required physical contact between people (for example the issuing of iPads to parents and children) was put on hold during the initial response in line with lockdown restrictions. Similarly, the progression of activities to support increasing digital skills has also been put on hold e.g. industry partnership working with schools; after school tech clubs.

Impact on Global Supply Chains

The pandemic has had a double impact on global supply chains for ICT equipment. Firstly, the global deployment of lockdown measures has increased demand for equipment such as laptops, tablets, and even peripherals such as headsets. At the same time lockdown and physical distancing measures have impacted manufacturing and distribution of ICT equipment. It is likely that there will be a prolonged impact on hardware supply chains.

Re-scoping and Re-prioritisation of Transformation Programmes

The impact of controls that will continue to be in place during recovery and renewal, as well as the lessons that have been learned on the benefits of flexible working and resilience are impacting the scope and focus of transformation programmes. In some cases programmes are being re-planned, for example the Device Refresh programme is being re-planned to enable a different ratio of office-based staff to flexible working staff than had been originally planned. Similarly, it is expected that there will be a need to accelerate online services that can reduce or remove the need for physical contact.

3. ACCELERATION OF IMPLEMENTATION

At the same time the emergency has acted as a catalyst for accelerating digital transformation.

Flexible working and collaboration

Lockdown measures has meant that the Council has had to enable staff that are traditionally located within offices within the city centre to work from home and adopt more flexible workstyles. In addition the restrictions necessitated that collaboration between colleagues, and collaboration with partner organisations that would have historically happened through physical contact be replaced through digital means. Video collaboration became commonplace as people sought ways of keeping in touch with colleagues and partners.

Increased focus on Partnership Working

The emergency itself has necessitated that the public sector work closely together to meet the needs of individuals. In many cases this has resulted in better data sharing that has enabled services to become more integrated to deliver better outcomes for people.

Data Driven Decision-Making

Data has been a major focus for the public sector and community response to COVID-19. The emergency has demonstrated the transformative value of data and the importance of good data for decision-making, for enabling services to become targeted, to enable transparency, and to inform and engage communities.

3. SUMMARY OF PROGRESS FOR DIGITAL ECONOMY

Glasgow’s digital economy continues to be one of Glasgow’s fastest growing sectors. The Skills Development Scotland (SDS) report “[Digital Technologies in Scotland](#)”⁴ predicts that the digital sector will be one of the fastest growing sectors in terms of GVA (38%) in Scotland to 2029. The recent “Bright Tech Future” report by Tech Nation for the UK Government’s Digital Economy Council says that **over a fifth of jobs in Glasgow (22%) are now roles that could be classed as digital.**

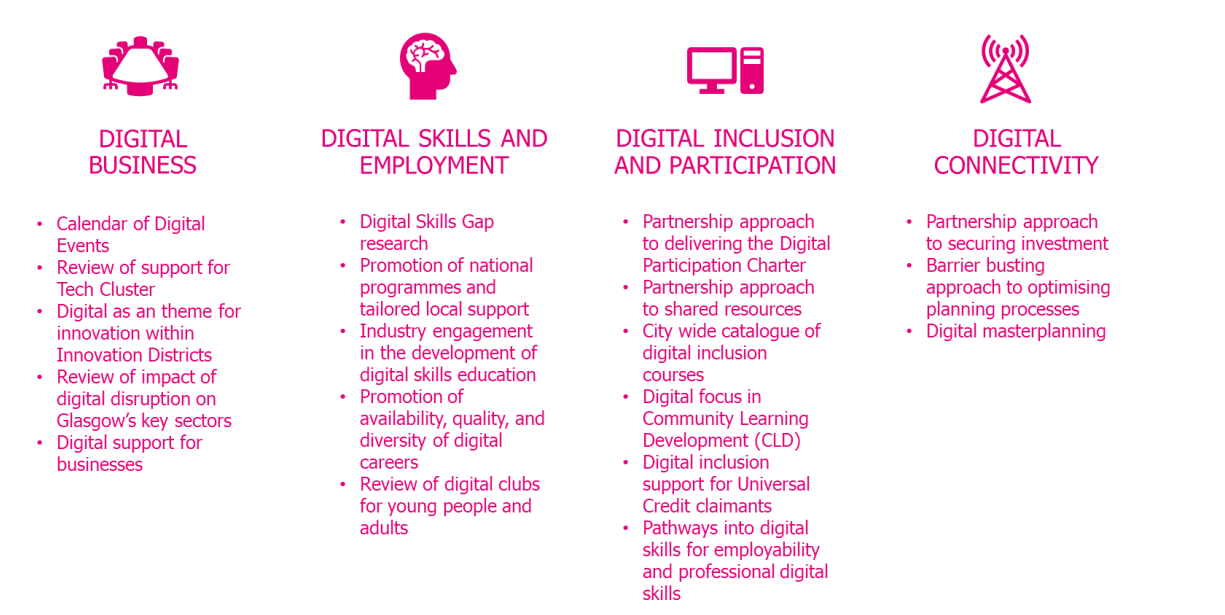


Figure 3 Summary of strategic actions contained within the Digital Economy section of the Digital Glasgow Strategy

3.1. DIGITAL BUSINESS

The Digital Business workstream brings together a number of City stakeholders who have been working on a number of areas. Progressing of this activity has temporarily been paused due to COVID and the need for business and stakeholders to focus on their responses throughout the pandemic. Activity that was progressed included:

- Conducting a review of business support by GCC/SE/Business Gateway which led to a new focus on digital/ tech
- Increased promotion of the Digital Boost programme which led to 67 Glasgow companies being supported
- A preliminary mapping exercise of the city’s digital ecosystem has been produced to form a basis for assessment of how to drive increased coherence of digital activity and support across the city

The digital business workstream continues to engage with the Innovation Districts in the City (GRID and GCID) to support an increased focus on the role of digital within the Districts. Examples include direct engagement on digital master-planning for GRID, working to ensure digital inclusion is a key tenet of the districts and assessing how best to drive coherence with

⁴ <https://www.skillsdevelopmentscotland.co.uk/media/46258/scotlands-digital-technologies-summary-report.pdf>

wider initiatives e.g. the Scotland 5G Centre, investment in telecoms infrastructure, supporting funding bids.

Recognising the importance of digital skills for running small and micro businesses, Glasgow Life's Business and IP Centre have launched a "[Power Up](#)"⁵ service to help small and microbusiness develop and online presence, sell online, and use technology to enable efficiencies. The service is funded by the Good Things Foundation "Power Up" programme, funded by JP Morgan.

3.2. DIGITAL SKILLS AND EMPLOYMENT

The emphasis for Digital Skills and Employment was to provide richer insight into current and future skills gaps within the city and to improve employer engagement within the development of digital skills education in order to establish a continuous approach to closing the digital skills gaps. The first phase of the work-stream has been led by Skills Development Scotland who have;

- Undertaken research that now provides the city with a much richer evidence base to develop detailed action plans and has developed programmes to,
- Established a steering group for the Digital Skills and Employment work-stream to provide opportunities for key stakeholders across the city to influence direction,
- Developed a programme for employer engagement in the development of digital skills education,
- Developed a programme to promote the availability, high quality, and diversity of digital careers.



In addition, to these broader achievements, and plans, the STEM Glasgow programme (delivered by Glasgow City Council Education Services) continues to help young people to develop relevant engineering and technology skills (such as coding) as well as problem solving, creative and design thinking, to support the delivery of the Technologies Framework within the

Curriculum for Excellence. Relevant highlights from STEM Glasgow during 2019 include;

- Glasgow Schools Hackathon 2019
- Dippy the Dinosaur 3D Printing Challenge

Glasgow Life provide further opportunities to develop digital skills through a "Coding for Kids" network delivered to 8-12 year old children across libraries in the city in collaboration with Coder DoJo Scotland. A review of the current provision of digital clubs that are available to children and young people within the city is included within the research undertaken by Skills Development Scotland.

⁵ <https://libcat.csghlasgow.org/web/arena/power-up>

3.3. DIGITAL INCLUSION AND PARTICIPATION

The Digital Glasgow Strategy emphasised the importance of digital inclusion and participation to social inclusion. It positioned digital exclusion as one of the most significant challenges the city faces as a consequence of the digital revolution. Since then we have become a signatory for the Cities Coalition for Digital Rights, a UN-funded coalition of cities that aim to work together to protect people’s digital rights.

The existing challenges of digital exclusion have been exacerbated as a consequence of COVID-19. Good Things Foundation provide a useful summary report ([COVID-19 Response Report](#)⁶) of the impact of Digital exclusion during lockdown measures:

“Digital has instantly become a universal need, and those without it are also those who have been hardest hit.”

Glasgow Life has led the implementation of the strategic actions and continues to support all aspects of digital inclusion from skills for employment through to basic skills for economic, civic and social life. Key achievements are highlighted below. However, this workstream has supported the most vulnerable people across Glasgow throughout COVID and this has been a primary focus.



Before the COVID-19 emergency, the following had already been achieved;

- A flexibly delivered digital skills offer is now in place across Glasgow Life. The offer covers essential digital skills and accredited intermediate and advanced skills.
- An assisted digital programme of support for Universal Credit claimants has been established in Glasgow Life libraries and community centres. The programme links clients to a range of local support services from basic digital skills training to housing, employment and money advice.
- An SQA accredited digital skills pathway has been put in place, delivered in partnership between Glasgow Life, Clyde and Kelvin Colleges. The ‘[Glasgow Code Learning](#)’⁷ has an additional focus on delivering digital skills for employability in the city’s Thriving Places areas.
- A number of new learning models have been co-produced to support ESOL staff in delivering self-

directed learning using digital technologies in a partnership involving Klick2Learn, Clyde College and Glasgow Life.

Both the Digi-Pals programme and the Glasgow Code Learning programme feature on the European Union’s [Digital Skills Map](#)⁸. The only UK entries on the map.

In response to the COVID-19 emergency, the focus has shifted to;

⁶ <https://www.goodthingsfoundation.org/research-publications/covid19-response-report>

⁷ <https://www.glasgowlife.org.uk/libraries/glasgow-code-learning>

⁸ <https://digiskillsmap.com/en>

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- Delivering [Connecting Scotland](#)⁹ activity within Glasgow to help get digital excluded households online through by increasing access to skills, connectivity and support
- Providing dedicated phone support and making on-line resources available
- Providing assisted digital support to Universal Credit clients
- Providing a digital inclusion support freephone number



To improve access to devices, Glasgow City Council has also recently awarded a contract with Glasgow's Remade Network to refurbish and recycle its unwanted IT equipment. The contract supports the development of Glasgow's circular economy by ensuring that unwanted council IT equipment is recycled within Glasgow, helping to reduce the digital divide and supporting new jobs within the city.

780 devices and connectivity for the most vulnerable have been secured through the Connecting Scotland initiative.

CITIES COALITION FOR DIGITAL RIGHTS

Finally, recognising that access to the devices, the internet, and opportunities to develop digital skills is a human right alongside privacy, and the ethical use of personal data, Glasgow joined an [international coalition of cities](#)¹⁰ (alongside other major cities such as Barcelona, Berlin, Dublin, London, New York and Toronto) that are collaborating to put in place actions to protect people's "Digital Rights" in October 2019. The [declaration](#)¹¹ for the Coalition for Digital Rights includes principles for;

- Universal and equal access to the internet, and digital literacy,
- Privacy, data protection and security,
- Transparency, accountability, and non-discrimination of data, content and algorithms,
- Participatory Democracy, diversity and inclusion,
- Open and ethical digital service standards.

⁹ <https://connecting.scot/>

¹⁰ <https://citiesfordigitalrights.org/>

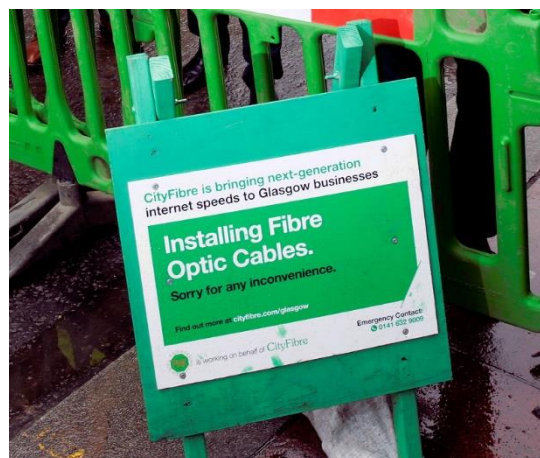
¹¹ https://citiesfordigitalrights.org/assets/Declaration_Cities_for_Digital_Rights.pdf

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3.4. DIGITAL CONNECTIVITY

The focus of the two years has been to ensure that Glasgow is recognised as an attractive area to invest in digital infrastructure with significant achievements including:

- CityFibre confirmed Glasgow as a Gigabit City which includes a likely investment of over £150M from CityFibre in bringing full fibre to the businesses and citizens of Glasgow. This is the biggest investment to date by the company in any city. It will leverage the existing investment from Glasgow City Council in fibre to all schools and Council premises across Glasgow to ensure inclusive access to full fibre in every ward in Glasgow,
- Continuing engagement with Virgin Media to facilitate and maximise their investment in digital infrastructure across the city,
- All four current UK Mobile Network Operators (MNOs) have an extensive upgrade programme for 4G across the City alongside a 5G roll out plan. Both BT EE and Vodafone have already rolled out 5G on macro sites in Glasgow,
- Funded by Scottish Government, and hosted by the University of Strathclyde in partnership with the University of Glasgow, the [Scotland 5G Centre](#)¹² been established within the Glasgow City Innovation District. Its role is to help accelerate the deployment and adoption of 5G, to realise its potential for Scotland by playing a leading role in Scotland's 5G community, and helping organisations to understand the benefits of enhanced mobility, flexibility and reliability.
- The University of Glasgow is investing in a 5G living lab as part of their smart campus programme in the heart of the Glasgow Riverside Innovation District.
- BT has established Glasgow as one of three 5G Innovation cities and in January demonstrated to the First Minister the use of Augmented Reality/Virtual Reality (AR/VR) over 5G for education and manufacturing. This was jointly achieved with Glasgow City Council, University of Glasgow and BT EE. Glasgow City Council are now working closely with BT to agree a 12-18 months programme of diverse use cases in Glasgow,
- Three have indicated that Glasgow is a priority city for 5G and enhanced 4G and detailed planning is underway.
- SPT has signed a collaborative agreement with Cisco, the University of Strathclyde, and the South Korean Transport Agency to undertake trials of 5G signalling within the tunnel between Buchanan Street Station and St Enoch Station, part funded by UK Department of Culture, Media, and Sport.
- Glasgow was the **first Scottish City to complete the implementation of a City wide Internet of Things (IoT) network** in partnership with Boston Networks and the Scottish Government,



¹² <https://scotland5gcentre.org/>

4. SUMMARY OF PROGRESS FOR DIGITAL PUBLIC SERVICES

The aim of the Digital Public Services strategic action plan is for Glasgow to be recognised as one of the most innovative and pioneering smart cities in the world.

Digital Public Services strategic action plans provide a comprehensive set of interventions that are both cross-cutting and align to specific policy areas (such as learning and teaching, planning and development and health and care). The actions contained within the action plans enable us to;

- Improve the resilience of our underlying technical infrastructure,
- Use digital technology and data-driven approaches to;
 - improve our processes that we use to deliver services,
 - improve how the council interacts with residents, businesses, and visitors
 - enable greater flexibility for our staff
 - provide more joined up service with other public bodies
 - enable our services to redesigned around the needs of users to become more tailored to individual needs, proactive and preventative

The action plans are summarised by the below diagram;

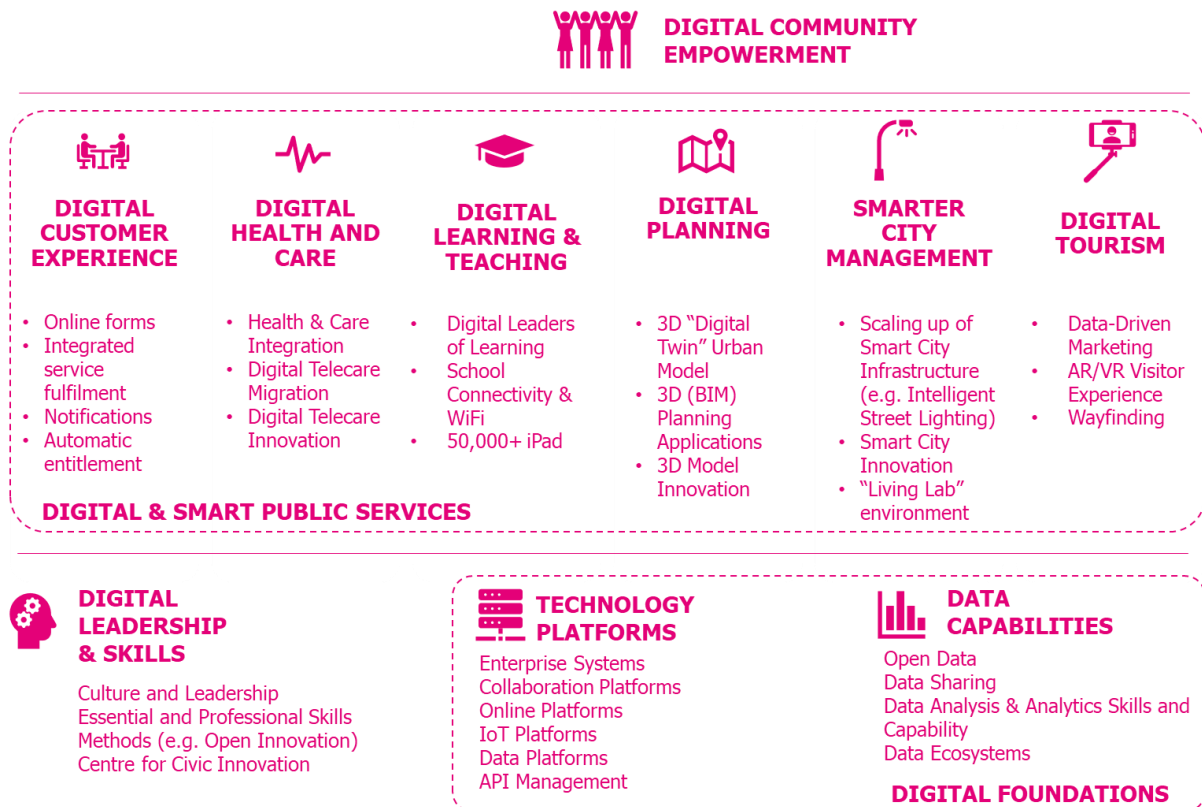


Figure 4 - Overview Digital Public Services Action Plans

The Digital Glasgow Strategy set out bold and comprehensive strategic actions for Digital Public Services. Many of the actions are foundational and transformational and will have a lasting legacy for the council, it's staff, and the city, and it's residents. Delivering against them

has required strong leadership, has required collaboration across council departments and partner organisations, and is underpinned by partnership arrangements such as our managed ICT service from CGI. On a number of occasions it has required us to adopt new ways of working, There have been challenges (which are summarised in Section 5), and there is still a lot to do to realise the ambition of the strategy (which is summarised within the below chart, Appendix B and the Next Steps in Section 6), however, what is clear from the review is that the majority of the actions are underway and there is already a lot to celebrate from the first two years of the strategy.

4.1. DIGITAL HEALTH AND CARE

Like many of the other Digital Glasgow strategic action plans, the Digital Health and Care action plan contains a combination of actions that are focused on improving the efficiency and effectiveness of processes, actions that are focused on how we engage with residents, and action that enable us to deliver better outcomes by reimagining and redesigning our services.

Much of the operational focus for technology within the Glasgow Health and Social Care Partnership has been to enable **greater collaboration and data sharing across staff** from across Glasgow City Council and NHS Greater Glasgow and Clyde. This is summarised in the [Digital Health and Care](#) progress report in Appendix 2. The Glasgow Health and Social Care Partnership is currently developing a detailed digital strategy that brings together the actions from the Digital Glasgow Strategy, and [NHS Greater Glasgow and Clyde's Digital Strategy](#)¹³ and focused on the operational needs of the partnership. Data sharing with NHS, Public Health Scotland and Scottish Government has been a major focus during the COVID-19 emergency and is likely to provide valuable learning for ongoing sharing and use of data to enable service redesign. This is being coordinated at a national level via Scottish Government's [COVID-19 Data and Intelligence Network](#)¹⁴.

The Digital Glasgow Strategy contained an action to expand the use of **digital engagement tools** that would allow staff to engage with citizens using video calls, chat, etc. The impact of COVID-19 Lockdown created an imperative to seeking digital alternatives to physical contact with people receiving care, and with partner organisations. Initial trials of the NHS Near Me service have been undertaken for engaging with people with drug and alcohol addictions, mental health problems, and learning disabilities. At a national level Scotland Excel has been engaged with NHS Scotland and Scottish Government to facilitate extended use of the NHS Near Me (which has already been scaled up to support health consultations during COVID-19) across social work within Scotland. WhatsApp has also been used extensively by staff as a means of maintaining regular contact with people receiving care.

Digital telecare is a major and urgent priority for the Health and Social Care sector. The current telecare services (which provides a broad range of devices which are designed to help people safe in their home and provide remote assistance in an emergency) makes use of people's analogue phone lines (known as the Public Switched Telephony Network, PSTN). The telecommunications sector is planning to switch this network off¹⁵ in 2025 at which point all residential telephony services will be delivered digitally over broadband connections and the traditional phone sockets will be removed. To plan for the switch off, telecommunications providers (such as BT and Virgin Media) are already migrating customers to digital telephony

¹³ https://www.nhsggc.org.uk/media/250449/nhsggc_digital_strategy.pdf

¹⁴ <https://blogs.gov.scot/statistics/2020/08/18/the-scottish-covid-19-data-and-intelligence-network/>

¹⁵ https://www.ofcom.org.uk/_data/assets/pdf_file/0032/137966/future-fixed-telephone-services.pdf

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at the point of contract renewal or upgrade, and it is expected that customers will be forced to be migrated to digital from 2023 up until the switch off in 2025.

The Digital Office for Scottish Local Government, working on behalf of Scottish Government is delivering a [Digital Telecare](#)¹⁶ programme that is coordinating trials for digital telecare equipment and is packaging up learning to help all Health and Social Care Partnerships to migrate telecare equipment to digital in time for the forced migration. It is also engaged with Ofcom to ensure that we are informed of plans, and can escalate issues and risks to the telecommunications sector. To enable digital telecare the Alarm Receiving Centre software that received alerts requires an upgrade. A programme is in place to migrate the software to the hosted data centre service, migrate the telephony to the Council's digital telephony network, and to upgrade the software to enable digital equipment to be connected. Work is now underway to use develop migration plans for telecare equipment.



One of the benefits of Digital Telecare is that it provides the basis for a broader range of (Internet of Things) devices and sensors (including wearable technologies such as fitness trackers and watches) to provide to real-time data that allows telecare services become more **anticipatory and preventative and to enable self-management of conditions**. The Digital Glasgow Strategy set out an action to engage with SMEs through open innovation to stimulate digital health and care innovation. The Glasgow Health and Care Partnership (in collaboration with the Centre for Civic Innovation, and with support from the Digital Health and Care and CENSIS innovation centres) has delivered the first phase of a **Digital Telecare open innovation challenge** with SMEs (funded by the [Scottish Enterprise “Can Do” Innovation Challenge Fund](#)¹⁷). The first phase of the challenge provided opportunities for five SMEs to work collaboratively with the Health and Social Care Partnership to undertake research and develop outline concepts. A [video](#)¹⁸ summarising the impact of the first phase of the process has been produced by Scottish Enterprise. Funding has now been received from Scottish Enterprise to initiate the second phase of the challenge which will provide opportunities for two SMEs to develop proof of concepts working in collaboration with the Health and Social Care Partnership.

The Digital Glasgow Strategy set out an action to improve the digital resilience of looked after children and young people. The Glasgow Health and Social Care established a Digital Resilience Group that commissioned [research](#)¹⁹ that was delivered in collaboration with Carnegie Trust UK and undertaken by Glasgow-based design agency, Snook. The recommendations from the research have now been fully implemented for young people, and plans are now underway to extend it to elderly people in care. Achievements of the **Digital Resilience** programme include;

- Providing a laptop computer and WiFi access to every child and young person in a care home setting.
- The creation of a “digital champions” network
- Development of a digital skills framework
- Creation of a website to provide support for staff

¹⁶ <https://telecare.digitaloffice.scot/>

¹⁷ <https://www.openinnovation.scot/support-and-funding/can-do-innovation-challenge-fund>

¹⁸ <https://www.youtube.com/watch?v=rQbhNqe9ycE>

¹⁹ https://d1ssu070pg2v9i.cloudfront.net/pex/carnegie_uk_trust/2019/10/16155840/Glasgow-Digital-Resilience-Report-Final-Download.pdf

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4.2. DIGITAL LEARNING AND TEACHING

Digital Learning and Teaching has been a major focus for the Digital Glasgow Strategy and a major focus for Education Services in Glasgow. The **Digital Learning and Teaching** Strategy produced by Education Services sets out goals for;

- Raising attainment and achievement
- Closing the attainment gap
- Enhancing the leadership of staff
- Supporting families to be better able to support their children's learning and development
- Make best use of resources

A foundational aspect of the Digital Learning and Teaching Strategy has been a major upgrade to school digital infrastructure. In partnership with CityFibre, the Council has upgraded the network capacity to all schools within the city.

All Primary Schools in Glasgow have now been provided with 1Gigabit connectivity and all Secondary Schools have been provided with 5 Gigabit connectivity.

Wi-Fi has also been rolled out across all learning spaces in almost all of the schools. Only a few are remaining. This provides access to school and educational digital resources across the school campus. Apple TV has also been fitted within classrooms to providing teachers and pupils to project to digital screens wirelessly.

A key component of the Digital Learning and Teaching strategy has been the **roll-out of over 50,000 iPads to pupils across the city** (the largest Apple Education project in Europe). The intention of this initiative is to enable improvements in attainment and to improve digital skills.

Over 25,000 iPads have been delivered to Glasgow pupils. The plans for delivering the remaining devices will be accelerated as a consequence of COVID-19.

Although it is the iPads that capture the headlines, the most important and impressive part of the Digital Learning and Teaching strategy are the digital leadership and professional development achievements, including;

- Digital Learning is **embedded as a key element of School Improvement Plans**,
- Digital Learning and Teaching has been a focus for **Continuous Professional Development (CPD)**,
- A network of Digital Leaders has been established (**Digital Leaders of Learning**) to promote and share best practice across the education sectors, this includes a Pupil Digital Leaders of Learning network for young people themselves,



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- An **annual Digital Leaders of Learning conference** has been established to share best practice and to celebrate and learn from achievements across schools,
- Apple has established a Regional Training Centre (Apple RTC) within Glasgow and 50 trainers have been trained.

Already, the impact of the Digital Learning and Teaching Strategy includes;

- Increased staff confidence in planning for digital literacy,
- More pupils applying digital skills in other contexts,
- Increased use of GLOW,
- Increased awareness of the risks associated with being online
- An increase of 200% in the number of teachers accessing and using digital resources.

4.3. DIGITAL PLANNING

The Digital Glasgow strategy focused its actions relating to planning and development on **three-dimensional (3D) urban design and planning**. It set out aims to establish a 3D model of the city which can be used to enrich development and planning processes, improve community engagement, and could be used as a “Digital Twin” that can be used alongside real-time data feeds to model the impact of policy interventions on the city, public services and communities. Glasgow’s existing “Urban Model” has now been migrated to the new format and initial trials have been undertaken for planning (a development on the corner of Waterloo Street and Minerva Street in Finnieston) and development planning (e.g. Clyde Waterfront, and West End Innovation Quarter).



Figure 5 – Examples of 3D urban models

The 3D models will soon be made publicly available as open data via the new Open Data portal once it is launched (see [Data Action Plan](#)) to improve community engagement and to stimulate innovation for how the models might further be used.

4.4. SMARTER CITY MANAGEMENT

SCALING UP SMART CITY INFRASTRUCTURE

Glasgow is committed to a meeting a net-zero emissions target by 2030 and is already ranked 4th in the world in the Global Destination Sustainability Index (GDS-Index). It is currently preparing to host the United Nations Climate Change Conference, COP 26 in 2021

The Innovate UK Future Cities Demonstrator provided Glasgow with valuable practical experience of smart city technology that provided confidence in the role that IoT-enabled infrastructure can provide in terms of;

- Reducing energy consumption,
- Improving environmental sustainability,
- Improving resilience
- Improving public safety,
- Providing opportunities to transform maintenance processes,

The [City Centre Strategy](#)²⁰ sets out actions that build upon this experience by implementing **smart infrastructure** within the city centre. Funding from the Glasgow City Region's City Deal and European Union (ERDF) structural funds provided through the Smart Cities Scotland²¹ programme has now been used to scale up smart city infrastructure across the city centre.

Intelligent street lighting is a smart city technology that transforms street lighting. Individual street lights are fitted with equipment that allows them to communicate digitally with a "central management system" that provides informs engineers how the lights are performing, and allows lighting levels to be controlled remotely (manually or in an automated manner). The benefits of the technology include improvements to;

- energy efficiency
- maintenance
- public safety

The initial trials of Intelligent Street Lighting during the Future Cities Demonstrator was, at that time, limited to 500 intelligent street lights which were deployed in trials on the Riverside Walkway, Gordon Street and the Merchant City in order to trial different scenarios. More details of the the demonstrator can be found on the Future Cities Demonstrator website [here](#)²².

Following the success of these trials, supporting the strategic action to scale up smart infrastructure, the technology has now been scaled up across the **whole of the city centre**;

There are now over 3,500 IoT-enabled intelligent street lights deployed across the whole of the city centre.

The below screenshot shows the software that is used to control and monitor the intelligent street lights (the "Central Management System"). The map shows the location of intelligent street lights deployed within the city centre.

²⁰ <http://www.glasgow.gov.uk/CHttpHandler.ashx?id=17548>

²¹ <https://www.scottishcities.org.uk/workstreams/smart-cities>

²² <https://futurecity.glasgow.gov.uk/intelligent-street-lighting/>

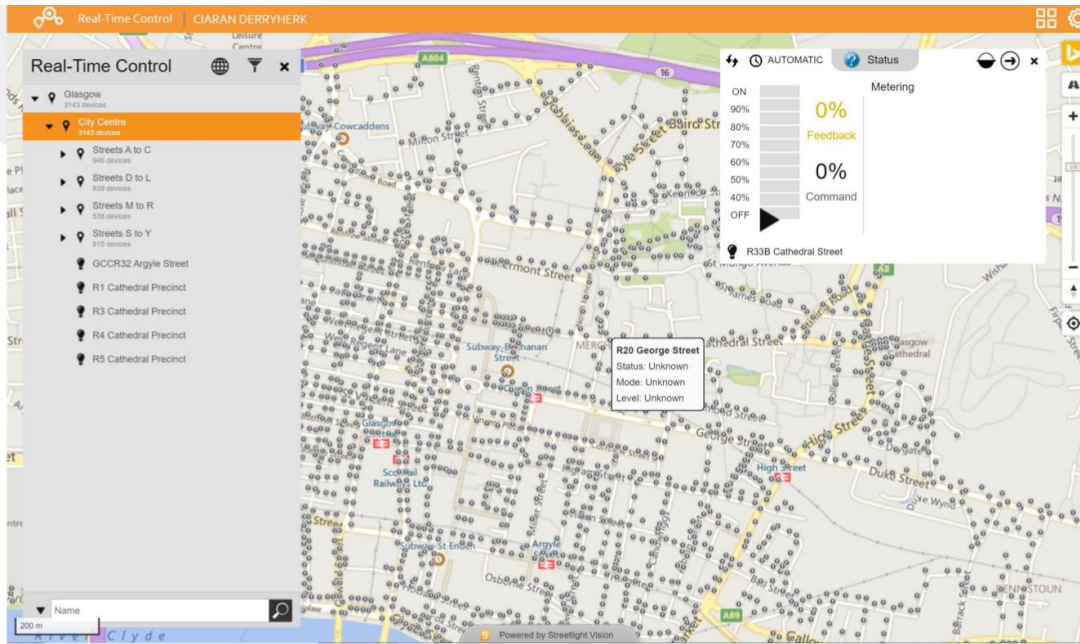


Figure 6 - Central Management System showing intelligent street lights deployed in Glasgow City Centre

CONTINUING TO PIONEER SMART CITY INNOVATION

In addition to scaling up Glasgow’s smart infrastructure we also continue to experiment and innovate with smart city technology and approaches. The most significant of which is our Smart Street Project. Glasgow is a Lighthouse City for the European Commission’s **Horizon 2020 RUGGEDISED programme** alongside Rotterdam and Umeå²³. The Glasgow project centres of the creation of a “**Smart Street**” to demonstrate a number of innovative smart energy solutions. The street is located in the city centre along a section of George Street and Duke Street, in an area of mixed residential, academic, community, retail, and industrial buildings. It seeks to address the challenges Glasgow faces from ageing infrastructure, fuel poverty and air pollution; by integrating planned regeneration and development with smart city capabilities. Although most of the projects within the Smart Street district have a digital component, not all have a digital focus. Projects include:-

- Heat exchange between district heating networks,
- Electric Vehicle (EV) charging hub within Duke Street Car Park, with battery storage, surplus power storage and connection to renewable energy sources,
- Intelligent street lighting with integrated EV charging,
- Demand-side energy management in domestic properties, non-domestic properties and street lighting,
- Smart open decision-making platform

²³ <https://ruggedised.eu/home/>

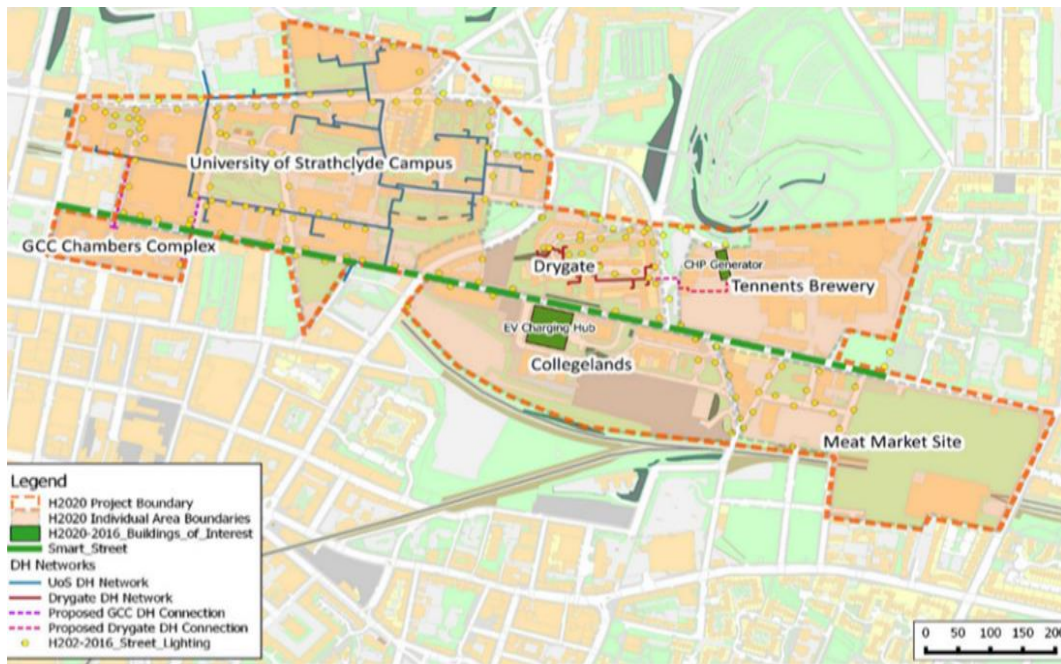
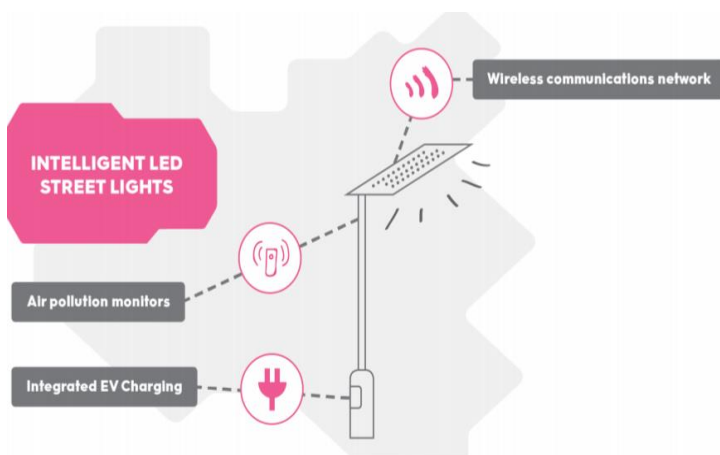


Figure 7 Glasgow's Smart Street District

An example of the innovation being demonstrated in the Smart Street district is demand-side management. Demand-side management is a smart energy technology that allows the grid to send digital requests to sources of energy consumption to request that they reduce their consumption (as an alternative to the grid meeting peaks in demand by increasing supply). During the Innovate UK Future Cities Demonstrator the technology was deployed across a number of Council buildings, more information of the initial trials can be found [here](#)²⁴. The Smart Street project will extend this to additional non-domestic properties, to domestic properties and street lighting.



Although Intelligent Street Lighting has been deployed at scale across the city centre, the Smart Street district is being used to further innovate with the technology. With 70% of Glasgow households residing in flats, access to charging infrastructure for Electric Vehicles (EV) can be challenging. The deployment of Intelligent Street Lighting in the smart street district will test the suitability of street lighting for EV charging. 300 intelligent street lights are now

deployed within the project district. Designs are now complete to deploy EV charging and air quality sensors to the street light network within the district.

A Data-Based Decision Platform has been developed to support the strategic planning of city infrastructure and energy planning. The solution builds upon the existing (Microsoft Azure-

²⁴ <https://futurecity.glasgow.gov.uk/energy/>

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based) [city data platform](#)²⁵ and allows analysis across a broad range of open and shared real-time and historic data sets. More information on this deliverable can be found on the project's website [here](#)²⁶.

Glasgow City Council is also collaborating with the University of Strathclyde to deploy **25 air quality sensors across Glasgow schools** to monitor and provide real-time information on Greenhouse Gasses and Carbon Dioxide at schools as part of a trial being undertaken by the **Global Environmental Monitoring and Measurement (GEMM)** initiative, a collaboration between the University of Strathclyde; Stanford University, U.S.; the University of California at Berkeley (UC Berkeley), U.S.; The Optical Society (OSA); the American Geophysical Union (AGU); the Met Office, UK and the National Physical Laboratory, UK.

The build of the University of Glasgow's £800 million investment to transform and expand their campus is also now underway. The expansion covers 14 acres of land adjacent to their main campus, and has provided a rare opportunity to rethink the design and layout of a university with 30,000 students located in an urban area. The University is seeking to use the opportunity to become one of the first institutions globally to exploit digital technologies that enhance on and off campus experiences and create a more sustainable environment to study and work. Located in the heart of the Glasgow Riverside Innovation District (GRID), the University's **5G-enabled Smart Campus** project aims to;

1. Create a world-changing, adaptable, connected, healthy and sustainable university campus,
2. Provide a world-leading, technology-enhanced learning and teaching environment (local and remote),
3. Support and develop research activities and strategic partnerships.

4.5. DIGITAL TOURISM

Glasgow is Scotland's cultural powerhouse. As a UNESCO City of Music and one of the world's top five sporting cities, Glasgow is home to world-class museums, galleries and attractions; a rich architectural heritage and a thriving and diverse food and drink scene. Its outstanding programme of events and festivals is recognised globally and the city is a first-choice destination for more than two million tourists every year. Glasgow's Tourism and Visitor plan²⁷ sets out a target of achieving an additional 1M visits per year by 2023 with a benefit of and additional £773M contribution to Glasgow's economy, creating 6,600 jobs in the city. The priorities set out within the plan include strengthening digital capabilities and making better use of data to market the city and better understand the visitor experience. The Digital Tourism action plan within the Digital Glasgow set out support these goals by setting out actions for using data and exploring the role of digital technologies such as wayfinding and Augmented Reality and Virtual Reality (AR/VR) within venues and within the city itself to enrich the visitor experience.

In terms of data, the Glasgow City Region Digital Tourism Strategy sets out specific actions to;

²⁵ <https://futurecity.glasgow.gov.uk/data/>

²⁶ <https://ruggedised.eu/fileadmin/repository/Factsheets/Ruggedised-factsheet-G7.pdf>

²⁷ <https://glasgowtourismandvisitorplan.com/media/2035/glasgow-tourism-plan.pdf>

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- Utilise a data and insight driven process for customer segmentation, creative product and campaign development, and competitor and trend analysis.
- Capitalise on the City Region's Intelligence Hub to ensure consistent and accurate tourism indicators and insights for region.

A wayfinding app ([GoGlasgow](#)²⁸) has been developed for the city and has been used to provide interactive tours of Mackintosh buildings as part of the celebration of the 150th anniversary of his birth. Bluetooth beacons have been installed in all Mackintosh buildings that provides information to users of the app as they pass.

The benefits of AR/VR for enriching the visitor experience has been the subject of recent [research from the University of Glasgow](#)²⁹ in collaboration with Glasgow Life Museums, National Trust for Scotland, National Library of Scotland, and Glasgow visual experience design agency, Soluis. The report provides valuable market research into the needs of different audiences, and advice for designing immersive experiences using AR/VR.



The Glasgow School of Art's School of Simulation and Visualisation have created an immersive three dimensional (3D) exhibit in collaboration with Glasgow Digital Experience Design agency ISO Design. The [Digital Laocoön](#)³⁰ (a figure from classic mythology) uses AR/VR to tell the story of Laocoön, one of the GSA's collection of plaster casts which was damaged in the fire of 2014 and is presumed lost following the fire of 2018. The project is now exploring how the 3D experience can reach a broader audience including schools.

An Augmented Reality App is currently being developed for tours at the Glasgow City Chambers. The app will provide an interactive experience on visitors' mobile phones that will overlay information about physical objects (such as the marble staircase) to visitors as they point their phone at objects within the City Chambers. If the trial of the app is successful, its suitability and use at further venues will be explored.

4.6. DIGITAL CUSTOMER EXPERIENCE

For many of the people in Glasgow, the majority of day-to-day interaction with the Council relates to transactions: Registering births, deaths and marriages, applying for licenses, building warrants, planning permission, grants, discounts, reporting pot holes, street light faults, missed bins, etc. A programme called "digital citizen" is currently being delivered with our ICT partner, CGI to make more transactions available online, and to integrate the online experience with the fulfilment of services to ensure that customers received a simple and joined up experience. Key highlights from the programme include;

- Integration with the MyGovScot [MyAccount](#)³¹ identity service that provides citizens with a single login across different services



²⁸ <https://glasgow.gov.uk/goglasgow>

²⁹ https://www.gla.ac.uk/media/Media_640683_smxx.pdf

³⁰ <https://gsaarchives.net/2019/01/visualising-laocoön/>

³¹

<https://www.glasgow.gov.uk/article/19898/myaccount?return=aHR0cHM6Ly93d3cuZ2xhc2dvdy5nb3YudWsvYXJ0aWNsZS8yMzA2My9QdXBpbC1BYnNlbnNlLVJlcG9ydA%3d%3d>

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- Launch of new online service called [MyGlasgow](#)³², which compliments the MyGlasgow App by providing online (responsive) forms for reporting;
 - Stray dogs,
 - Bus shelters
 - Noise
 - Anti-social behaviour
 - Food safety

The Digital Glasgow strategy also set out an action to reduce the need to contact the Council by making better use of the data to avoid people having to tell us more than once. We had already proven this concept by enabling “automatic entitlement” for clothing grants. Exploratory work is now underway to extend this concept further through a Single Financial Assessment that would be used to automatically trigger a range of benefits and discounts that a person might be entitled to.

The strategy also set out an action to provide citizens with greater control over how their data is used. An open innovation project, funded by the European Commission’s Interreg programme, and delivered through Scottish Government’s CivTech programme³³, has explored the use of an application from a Scottish community interested company called MyDex CIC (who have developed a personal data store (PDS) that allows citizens to share about their needs and experience of public transport with the public sector and in return receive updates from the public sector.

4.7. DIGITAL COMMUNITY EMPOWERMENT

The Digital Glasgow Strategy included a set of action relating to community empowerment. They are intended to support the expected outcomes of the Council’s Strategic Plan for “A Well Governed City that Listens and Responds” i.e.

- *“The council has open and transparent decision making,*
- *Citizens are more involved in local and citywide decision making,*
- *We listen to citizens and respond,*
- *We take account of equality issues and the impact of poverty in our decision making.”*

The strategic action plan for Digital Community Empowerment included an action to enable digital voting for Participatory Budgeting. The (open source) [Consul platform](#)³⁴ that is used across 35 countries to support digital participatory democracy has been used to enable digital voting for Participatory Budgeting in Pollok and Calton. The platform is hosted by COSLA as part of a national programme to enable digital participatory budgeting across Scotland. Although currently only used for Participatory Budgeting, the platform provides capabilities for debates, proposal, Participatory Budgeting, and collaborative legislation.

³² <https://my.glasgow.gov.uk/>

³³ <https://www.nweurope.eu/projects/project-search/begood/our-11-solutions/digital-citizen-dialogue-to-optimise-the-design-of-public-services/>

³⁴ <https://consulproject.org/en/>

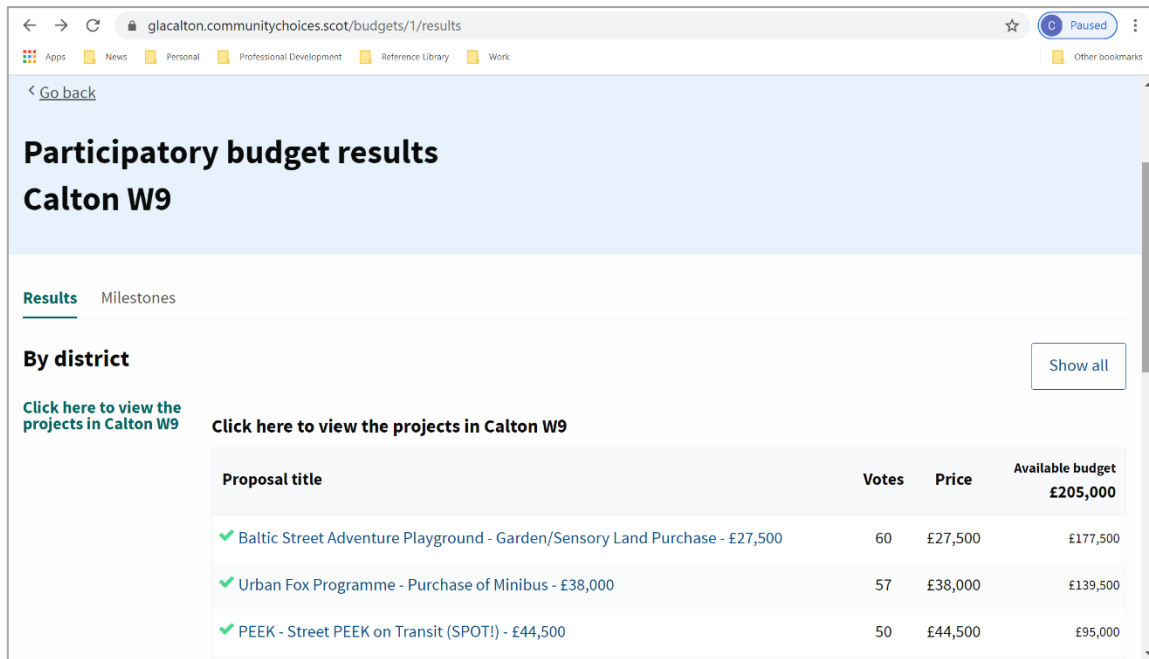


Figure 8 Online Participatory Budgeting in Calton using the Consul Platform

The strategic action plan also included an action to make more information available to elected members and constituents. Ward dashboards have been developed for elected members. They have been developed in collaboration with a working group of councillors. The dashboards provide graphs and maps that provide access to real-time and historic information (that show trends) about reports to the council (e.g. lighting faults, dog fouling, etc), information about community assets, and statistical information about the ward. The intention is to ensure that elected members have greater visibility of what is happening in their ward. Plans are being developed to make similar dashboards available to communities themselves as part of our open data project (see data action plan).

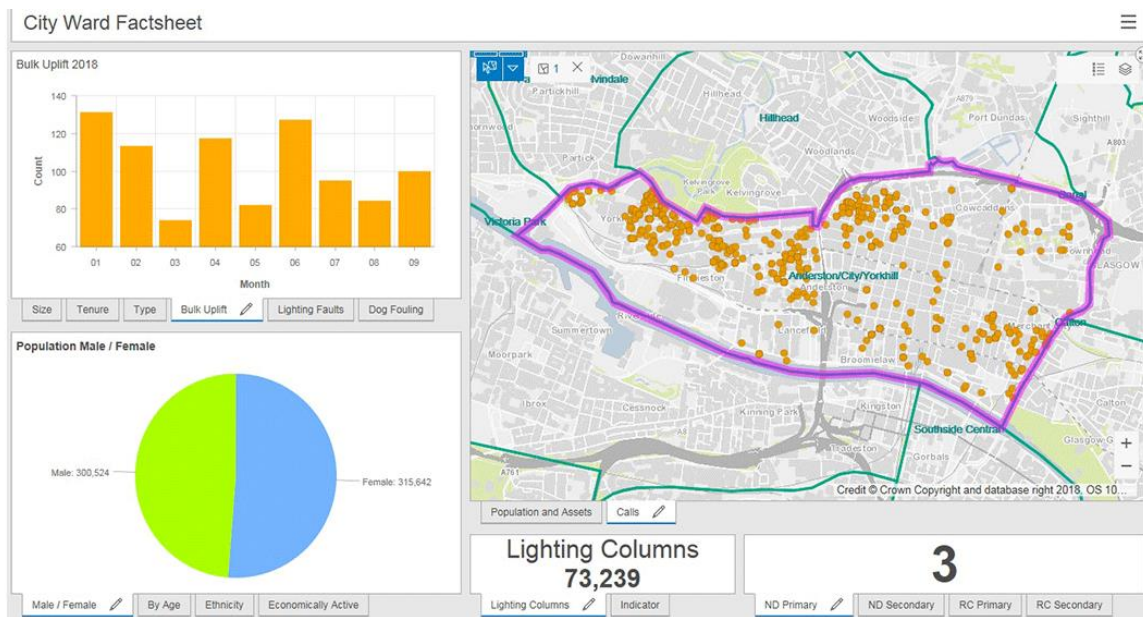


Figure 9 Ward Dashboard for Anderston/City/Yorkhill

4.8. DATA FOUNDATIONS

Underpinning the scale and ambition of the Digital Glasgow Strategy are a set of action to enable stakeholders across the city to make better use of data to;

- Improve transparency
- Improve decision-making
- Enable community empowerment
- Enable automatic entitlement
- Enable services to become more tailored and proactive
- Enable innovation

Glasgow has an existing [open data catalogue](#)³⁵, first developed during the Future Cities Demonstrator, and subsequently through Scotland’s Smart City programme. The data portal provides open access to high value data such as [real-time and historical traffic data](#)³⁶ from the city’s traffic management system. The value of this type of information has recently been demonstrated by the Urban Big Data Centre in their research on the [impact of lockdown on traffic in the city](#)³⁷.

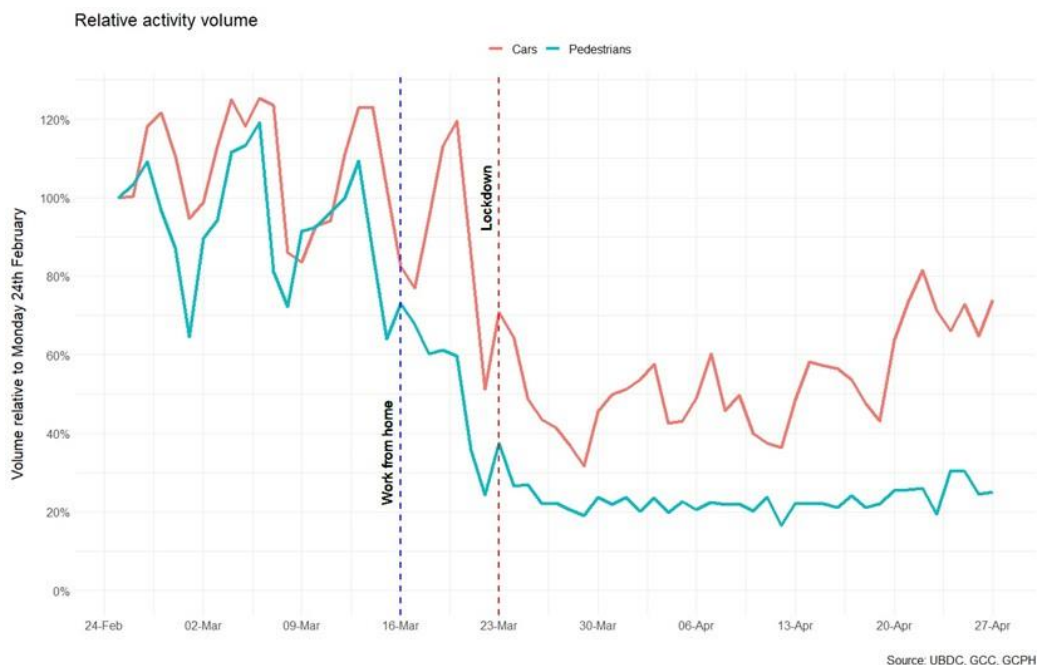


Figure 10 car and pedestrian activity in Glasgow relative to average

Our experience of open data has taught us that data needs to be presented in ways that are meaningful for different audiences. In many cases people want access to consume data in a visual way as much as they want access to the raw underlying data, and even where users require access to the actual raw data, there is still a need for it to be presented graphically to help them to understand the value of the data available. There is also a cost of publishing up-to-date accurate information as open data, and so to ensure that open data can be made available at scale it is important that solutions are established that reduce manual effort involved in publication. The recent focus for open data has been to publish data that we know will be valuable and to re-architect our open data portal to be more integrated with the source of our data (and in particular, our spatial data). We are currently testing a proof of concept for

³⁵ <http://data.glasgow.gov.uk/>

³⁶ <http://data.glasgow.gov.uk/dataset/live-traffic-data-real-time-historic>

³⁷ <https://www.ubdc.ac.uk/news-media/2020/april/the-effects-of-the-lockdown-on-traffic-in-glasgow/>

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a new open data catalogue that will be more integrated with our corporate Geographical Information System (GIS). The catalogue, which is based upon the ESRI Hub product, will remove manual intervention in publishing data make it easier for public open data to be published in a way that is accurate and current, and will provide new ways of using data to engage with communities. We are therefore now developing action plans to accelerate and scale up the publication of open data, including the publication of our 3D urban models (as referred to in the [Digital Planning](#) section).

We continue to develop stronger relationships with the University of Glasgow and the University of Strathclyde for data-driven research and innovation and have delivered a number of innovative projects with the universities. On the back of these collaborations Glasgow has become **one of the first cities outside of the United States of America to join the [MetroLab Network](#)** alongside Bristol and Liverpool. Our membership within



MetroLab will allow us to learn about models for city-university collaboration within the United States, allow us to learn about United States smart cities programmes, and provide opportunities for collaboration with United States cities and universities.

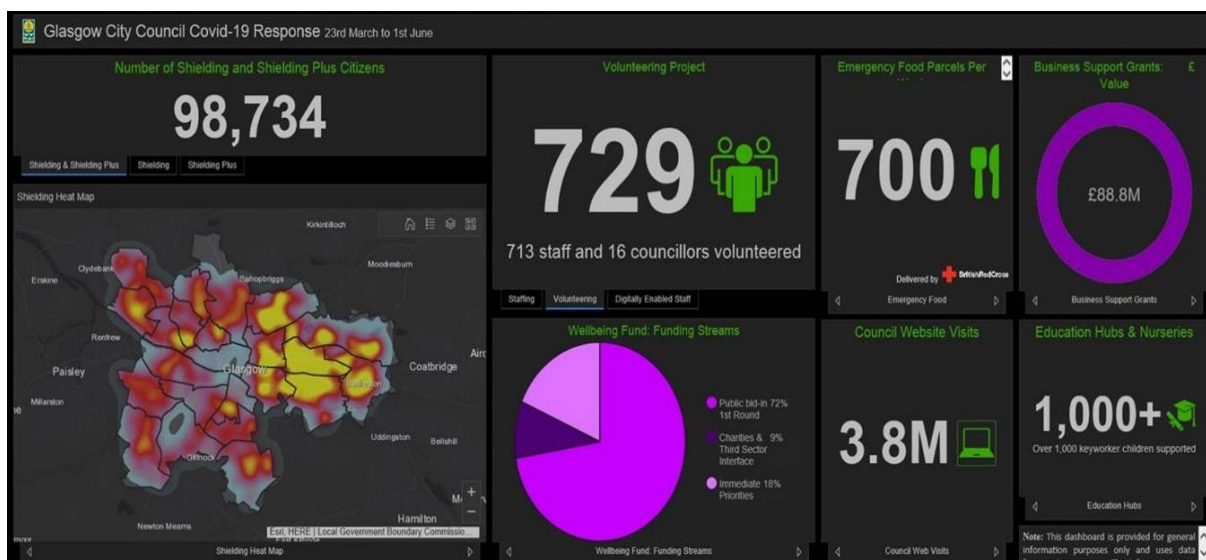


Figure 11 COVID-19 Response Dashboard

The opportunities to use data to inform the public sector's response to COVID-19 has been a major focus during 2020. A number of data analysis and analytics projects have been undertaken to;

EXAMPLES OF DATA ANALYSIS TO SUPPORT COVID-19 RESPONSE

- Understand how the city could support vulnerable people,
- Understand the impact of lockdown measures on council services,
- Help departments mitigate staff absence,
- Understand the proximity of probably and confirmed cases of COVID19 to the location of vulnerable people and vulnerable settings for resilience purposes,
- Model the impact on the economy and to city centre businesses.
- Providing an overall dashboard of the impact of the response to COVID-19

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Glasgow has been an active participator within the Digital Office for Scottish Local Government's COVID-19 Data Task Force, and the Scottish Government's [Data and Intelligence Network](#)³⁸. We have developed a resilience dashboard in collaboration with Public Health Scotland and NHS NSS that will be replicated across local government in Scotland.

4.9. TECHNOLOGY FOUNDATIONS

A key focus for Glasgow City Council's ICT investment has been to improve the capacity and resilience of its underlying technology infrastructure. This is a major foundation for the digital transformation we wish to undertake and the majority of this work is now complete, including;

- Migration of our ICT infrastructure from an on-premises data centre to a more secure and resilient hosted Tier 3 data centre service.
- A major upgrade of our corporate and school wide area networks (WAN), providing gigabit connectivity to schools, offices, venues, and community facilities.
- Improvements to a cyber security infrastructure and the introduction of a 24x7 security operations centre service.
- Rationalisation of our software applications.

Enabling staff to work from home has been a major priority and we have introduced remote working and collaboration capabilities, including enabling our contact centre to operate as a home-based virtual contact centre, which has (for example) been used to support for shielded people in Glasgow. We have also introduced Microsoft Teams to enable staff to collaborate remotely and to enable committees to be reinstated (including Full Council which is also streamed live).

Our priority for our technology foundations for 2020-21 will be to accelerate our end-user computing programme to refresh the personal computers used by staff, and introducing more Microsoft 365 capabilities to improve office productivity and collaboration and partnership working.

4.10. DIGITAL LEADERSHIP AND SKILLS

The Digital Glasgow Strategy recognises contains a strategic action plan relating to digital leadership and skills. The name might indicate that its focus is the development of technical leadership, its focus, however, is "**leadership for the digital era**". It recognises that digital transformation now has a much larger impact on how we deliver services than in previous generations. It requires us to reimagine and redesign services, rather than just optimise our processes, and this means we need to focus on user need, involve citizens and communities, be data-driven, and we need to be prepared to experiment.

The actions contained within the Digital Leadership and Skills action plan are based upon the recommendations from the [Digital Office for Scottish Local Government](#) who identified seven characteristics of digital leadership.

³⁸ <https://blogs.gov.scot/statistics/2020/08/18/the-scottish-covid-19-data-and-intelligence-network/>

Digital Leadership has been formally embedded within the management structure of the Council. The Extended Corporate Management Group (ECMG) represented by assistant directors and senior managers, has been assigned the responsibility for embedding digital leadership and skills within the council. Members of the ECMG have been assigned the role of **Digital Leaders**.

The technology research and advisory organisation, Gartner Inc, has been advising and coaching the ECMG to support the group to embed their role. The Digital Office for Scottish Government has also completed a formal [Digital Maturity Assessment](#)³⁹. This assessment is based upon a common toolkit that has been used across Scottish Local Government and has involved an extensive process of interviews with directors, senior management, and staff across the council to understand the maturity of digital leadership within the Council. The output from the review is expected later in 2020 and will be used to inform a detailed action plan for Digital Leadership and Skills



A network of **Digital Champions** has also been established that brings together staff who have an interest in digital and have good coaching skills across Council departments. The Digital Champions promote digital ways of working within their departments, signposting essential digital skills training (where applicable), and support the roll-out of new technologies (for example the Digital Champions have been supporting staff to adopt Microsoft Teams).

In line with our Digital Inclusion and Participation work, Glasgow City Council and Glasgow Life are signatories of Scotland's [Digital Participation Charter](#) which includes commitments to support staff with essential digital skills⁴⁰. **Essential digital skills training** is provided to all staff that require it, and is promoted through the Digital Champions network. Resources are available to staff (based upon material from SCVO) include;

- Essential Digital Skills Checklist
- Foundation skills for;
 - Communicating Digitally
 - Handling Information
 - Transacting Online
 - Problem Solving
 - Being safe and legal online

³⁹ <https://www.digitaloffice.scot/digital-leadership/digital-maturity-4>

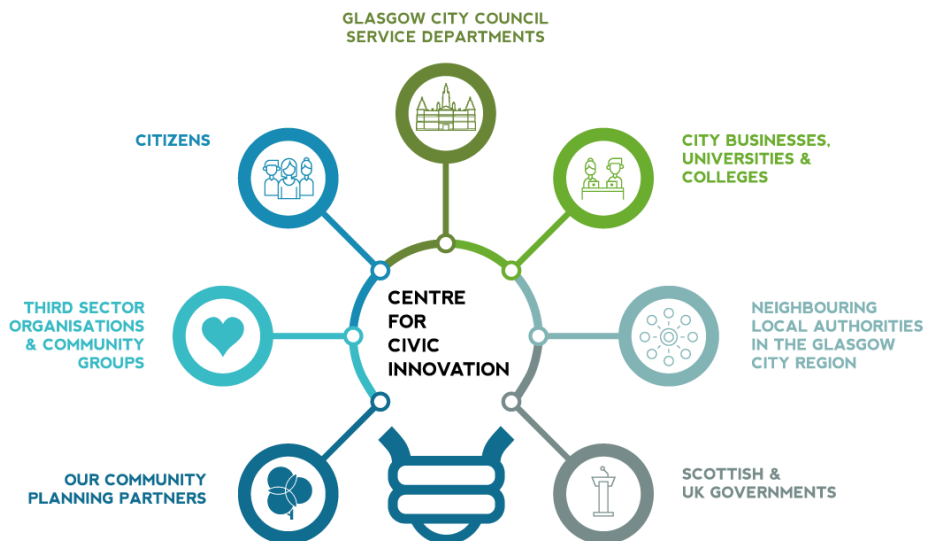
⁴⁰ <https://digitalparticipation.scot/charter>

⁴¹Toolkits and methods have been developed to enable the Council to embrace new ways of delivering digital transformation programmes that underpin the seven principles illustrated above, namely;⁴²

- Agile development
- Design thinking
- Service Design
- Open Innovation

The methods developed by Glasgow have been published as an online “[Design-led Innovation](#)” toolbox, and open for anybody to use.

The term **open innovation** means a situation where an organisation doesn’t just rely on its own internal knowledge, sources and resources (such as their own staff) for innovation but also uses multiple external sources to drive innovation. Glasgow City Council was one of the first public sector organisations in Scotland to participate within Scottish Enterprise’s [Open Innovation Programme](#) and continues to play a key supporting role within Scotland’s open innovation ecosystem, including participation within Scottish Government’s CivTech® programme, and supporting the Digital Office for Scottish Local Government and Scottish Enterprise to broader develop of open innovation skills across local government in Scotland.



Open innovation at Glasgow City Council is led and coordinated by its Centre for Civic Innovation located at the business growth accelerator, Tontine. The Centre provides a creative space that is used to facilitate design and innovation between the council, city partners, citizens, third sector, the academic sector, and businesses. Open innovations delivered by the Centre for Civic Innovation include;

⁴¹

https://www.strath.ac.uk/media/1newwebsite/departmentsubject/marketing/Open_Innovation_Brochure.pdf

⁴² <https://designtoolkit.azurewebsites.net/Toolbox.html>

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- **Using technology to support people with complex needs at home** – an [open innovation challenge](#) (delivered via the Scottish Enterprise “Can Do Challenge”) that worked with SMEs to explore the role that digital telecare, Internet of Things (IoT), wearable technologies, and artificial intelligence (AI) can play in enabling care services to become more preventative for people with complex needs (see [Digital Health and Care](#))



- **Understanding people’s experience of public transport** – an [open innovation challenge](#) (delivered via the Scottish Government’s CivTech® programme) that worked with a Scottish Community Interest Company (CIC) to explore how personal data store (PDS) technology might enable people to share more information about their experience of public transport.
- **Improving resident’s experience of events** – an open innovation challenge (delivered via the [itron Smart City Challenge](#)) that worked with SMEs to explore how residents’ experience of events might be improved. The winning solution used sensors attached to intelligent street lights to monitor acoustic levels in real-time, enabling footfall and vehicle traffic to be diverted in real-time to reduce noise levels.
- **Using data to raise awareness of people’s carbon footprint** – an [open innovation challenge](#) (delivered via the Scottish Government CivTech® programme) to explore how data could be used to inform citizens of climate change and their carbon footprint.

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5. KEY CHALLENGES

The scale, cross-cutting nature, and complexity of the Digital Glasgow Strategy was always going to present challenges. The COVID-19 pandemic exacerbated some of these challenges and presented major new challenges to the council, and to the city. A summary of some of the challenges that we have faced are provided below;

1. DEPENDENCY ON INFRASTRUCTURE INVESTMENTS

The first phase of the Digital Glasgow Strategy has seen major investments in underlying technology infrastructure, not least the installation of gigabit fibre connections to council assets across the city, and the migration away from the Council's on premises data centre to a managed hosted service in a Tier 3 data centre. In a number of cases, this investment has had to be complete before other transformation programmes could commence.

Challenge	1. Dependency on Infrastructure Investments
Description	
As highlighted in the Technical Foundations update in the Achievements section, there has been a major investment in underlying technical infrastructure within the Council, including the migration to a new resilient data centre, upgrade to network infrastructure capacity. The aim of the programme has been to provide a step change in the underlying infrastructure to increase resilience and flexibility, and enable more advanced digital services to be delivered to staff, and to citizens. It was always anticipated that this programme of work was required before other more advance parts of the strategy could be delivered.	
Impacts	
<ol style="list-style-type: none"> 1. <i>Technical dependencies</i> - The implementation in ICT infrastructure is a future-proofed foundation that all other digital programmes depend upon. For example, it would not make sense to implement new ICT hardware in the old data centre, and the benefits of delivering new end-user devices would not be realised if the capacity of connectivity behind the devices was not upgrade. It was always anticipated that the infrastructure investments would be prioritised in order to provide a stable platform for the more transformational aspects of the strategy. 2. <i>Resource dependencies</i> – The scale of the ICT infrastructure deployments has also been resource intensive for the council and our ICT partner, CGI, requiring intensive effort from programme and project manager, technical architecture and design, infrastructure operational teams, testing, and service management teams. It was appropriate not to overcommit teams given the important nature of the infrastructure programme. 	
Resolution	
The infrastructure put in place has been designed to provide capacity and lifespan beyond the remaining period for the Digital Glasgow Strategy and so there should not be a need for such a major investment in underlying technology, other than the programme the deliver new devices to staff and elected members.	

2. DEPENDENCY ON DIGITAL LEADERSHIP AND SKILLS

Similarly, some of the strategic actions within the Digital Glasgow Strategy are dependent upon the actions contained within the Digital Leadership and Skills action plan. For example, some of the transformational actions are dependent on the development of methods and skills for agile development, service design, and open innovation.

Challenge	2. Dependency on Digital Leadership and Skills
Description	
<p>The opportunity to use digital technology to transform public services requires a fresh approach to how we deliver transformation programmes. It requires a greater focus on digital leadership, re-designing services with, and around the needs of citizens, and more agile development approaches. This requires new methods, new processes, and new skills to be in place.</p>	
Impacts	
<p>Where methods and skills such as service design, open innovation agile development have been used (for example the Centre for Civic Innovation) and where services are designed from a citizen or staff perspective it is evident that more transformative solutions to challenges can be identified. The need for these methods and skills have not been required for the ICT infrastructure programmes but are increasingly needed for transformation programmes. Limited capacity, skills to deliver these types of approaches can limit the Councils ability to deliver citizen-centric services and realise the transformative benefits of digital transformation</p>	
Resolution	
<p>A Digital Maturity review has been undertaken by the Digital Office for Scottish Local Government. This review will inform an action plan that will allow us to prioritise our actions relating to Digital Leadership and Skills.</p>	

3. PRIORITISATION AND RESOURCE CAPACITY

Given the scale and complexity of the programmes within the first two years, (financial, staff, and supply chain) resources have largely been focused on the foundational elements of the strategy.

Challenge	3. Prioritisation and Resource Capacity
Description	
<p>The Digital Glasgow Strategy is a very complex, cross-cutting, and comprehensive strategy. Delivering the strategy requires resources from almost every part of the Council. This requires careful prioritisation and alignment of priorities across Council Services to ensure that the right skills are available at the right time. As the balance of focus moves from the infrastructure investment to new digital transformation programmes, this will become increasingly important.</p>	
Impacts	
<p>Resource capacity for the more transformative aspects of the strategy has been limited given the initial focus on the ICT infrastructure investments. This programme of work</p>	

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was pre-planned and committed to through contractual obligations with the Council's ICT service management partner, CGI. As this programme starts to conclude it will be important to increase the capacity for transformational change and given that there is a finite budget, and finite resources and skills it will be important to align requirements and prioritise programmes effectively.

Resolution

A new strategic planning board has been established to provide the appropriate mechanisms to align the transformational needs of Council Services, with the strategic drivers and the programme resources to deliver. The Extended Council Management Group will play a key role in building the Council's Digital Leadership and Skills and will help to balance priorities across the Council family.

4. IMPACT OF COVID-19

As described in Section 2.4, although in some cases the COVID-19 pandemic has created a necessity to accelerate digital transformation, it has also had a major impact on the delivery of the strategy. The COVID-19 emergency has (so far) impacted nine months of the first two years of the implementation of the strategy.

Challenge 4. Impact of COVID-19

Description

As described in Section 2.4, although in some cases the COVID-19 pandemic has created a necessity to accelerate digital transformation but it has also had consequences for the delivery of the strategy. The COVID-19 emergency has impacted nine months of the first two years of the implementation of the strategy to date.

Impacts

The COVID-19 emergency has had the following impact on the implementation of the Digital Glasgow Strategy;

- A greater need to support the digital excluded,
- A greater need to support small businesses with digital advice and skills,
- A greater focus on ethics, transparency, and privacy,
- A need for some work to be de-prioritised,
- A need to put activities that required physical contact on hold,
- Impacts to global supply chains ,
- A need to re-prioritise plans and re-scope investments to align with emerging requirements from the Council and City's recovery and renewal plans.

Resolution

It is inevitable that digital programmes and associated resources will need to react to continue to react to the need of the emergency through response, recovery and renewal. It will be important that plans are aligned to recovery and renewal plans and (where changes are required to support what is a very fluid situation), changes are formally managed and communicated to key stakeholders.

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6. NEXT STEPS

Notwithstanding expected continued disruption to plans associated with the COVID-19 pandemic and economic uncertainty, the following sets out key priorities and next steps for the next phase of implementing the strategy (the “**Digital Glasgow Ten Point Plan**”).

1. ALIGN FOCUS WITH COVID-19 RECOVERY AND RENEWAL PLANS

Existing programmes will be reviewed to align to emerging requirements for recovery and renewal. For example, the end-user computer programme will be reviewed to enable greater staff mobility and flexibility than had previously been expected.

2. INCREASE FOCUS ON PARTNERSHIP WORKING FOR DIGITAL INCLUSION AND PARTICIPATION

A number of the strategic actions throughout the strategy require partnership working across the public sector and partner organisations from other sectors in the city. The initial focus for the strategy, in some cases, has necessitated an internal Council focus. Approaches to improve partnership collaboration will need to be developed to deliver the remaining actions within the strategy that align with priorities for recovery and renewal.

3. SUPPORTING AND DEVELOPING GLASGOW’S TECH CLUSTER

We welcome the findings of the Scottish Government “Logan Report” (“[Scottish Technology Ecosystem: Review](#)”⁴³) and the commitments within the Programme for Government to implement the recommendations of the report and will seek opportunities to align our own plans as set out in the strategy with plans for implementing the Logan Report.

There is a need to place a greater focus on Digital Business and developing Glasgow’s tech cluster. The Scottish Government’s Mark Logan Review sets out a number of recommendations that have been included within the Scottish Government’s Programme for Government that provide opportunities to achieve the goals set out in the strategy.

4. IMPLEMENT THE DIGITAL SKILLS RECOMMENDATIONS

Skills Development Scotland has issued research into the development of digital skills across all educational settings in Glasgow. The report provides a series of recommendations. Work is now underway to develop an action plan to deliver against these recommendations.

5. CONTINUE TO FOCUS ON TACKLING DIGITAL EXCLUSION

The COVID-19 has re-enforced the social exclusion impact of digital exclusion. Providing greater access to affordable connectivity, devices, and access to learning to develop essential digital skills will continue to be a major priority. In particular the following activities will be a priority;

- Continue to coordinate the delivery of the Connecting Scotland programme within Glasgow,

⁴³ <https://www.gov.scot/publications/scottish-technology-ecosystem-review/>

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- Establishing a new working group with representation from public and voluntary sector partners to foster greater sharing, and better coordinate digital inclusion activities across sectors such as;
 - The provision of new or recycled IT equipment
 - The delivery of essential digital skills training
 - The availability of affordable broadband

6. CONTINUE TO FOCUS ON ATTRACTING INVESTMENT IN DIGITAL CONNECTIVITY

We have made excellent progress in attracting investment in digital infrastructure to the city, we will continue to make Glasgow an attractive place for investment in digital connectivity.

7. RENEW FOCUS ON OPEN DATA AND OPEN INNOVATION

Open data is a key component of Open Government, the Open Government Partnership (for which Glasgow has just become a member) states;

“Open data policies and practices have been core to OGP’s culture since its inception. It is the idea that data should be freely available for everyone to access, use, and re-publish as they wish. These proactive information mechanisms are an essential complement to reactive right to information laws.

They ensure that governments do not become data monopolies. In a well-functioning, democratic society citizens need to know what their government is doing. To do that, they must be able freely to access government data and information and to analyse and share that information with other citizens.”⁴⁴

Open innovation provides an approach for engaging with public sector partners, communities, the voluntary sector, the academic sector, and industry (particularly SMEs) in problem solving and co-development of ideas and solutions to city problem. The Centre for Civic Innovation provides a focal point for open innovation in the city.

We will place an increased focus on the publication of open data building upon our recent proof of concept of a new data catalogue. We will also continue to scale up our use of open innovation to create a means for the public sector, academic sector, third sector, and industry to co-design solutions to the challenges the city faces with the involvement of communities.

8. IMPLEMENT THE DIGITAL MATURITY ACTION PLAN

The Digital Office for Scottish Local Government has undertaken a review of Glasgow City Councils Digital Leadership maturity. The review provides us with a set of recommendations that will help to address the challenges identified above, and will be used to develop a detailed action plan for improving Digital Leadership and Skills within

⁴⁴ <https://www.opengovpartnership.org/policy-area/open-data/>

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the Council. Implementing this action plan, with oversight from the Extended Corporate Management Group (ECMG) will be a major priority. Example activities will include;

- Embedding a citizen-focused approach to digital transformation, building upon existing achievements in the development of service design practices,
- Raising awareness of service design, agile, and open innovation practices across council departments,
- Establishing a more structured and coordinated approach to digital skills development for staff, which can underpin the needs and impact of digital transformation,
- Continuing to grow and expand the new Digital Champions network to support staff to develop essential digital skills,,
- Increasing capacity of resources and skills required to deliver digital transformation,
- Facilitate greater sharing of best practice and experience for digital across council departments.

9. EVOLVE THE TRANSFORMATION PORTFOLIO

In line with Activity 1 there will be a need to evolve the Glasgow City Council internal transformation programme to align with the priorities for COVID-19 recovery and renewal and to enable citizen-focused transformation. Examples might include;

- Providing staff and elected members with ICT equipment and software that provides greater workplace flexibility, improves productivity and encourages collaboration between staff and with partners. Activities will include the refresh end-user devices, introduce Microsoft 365, continuing to accelerate home-working and collaboration tools such as Microsoft Teams,
- Establishing a new customer strategy and embed a citizen-focused approach to delivering transformation programmes,
- Continuing to deliver a platform to enable improved asset management and job scheduling, which is integrated with the customer experience so to ensure that citizens can be kept up to date with progress from operational teams,
- Undertaking a review of software applications used within Glasgow City Council to seek opportunities to rationalise software and enable greater reuse of enterprise software platforms,
- Scaling up data-driven transformation
- Embedding the approaches, capabilities, skills and resources that are being delivered through the Digital Leadership and Skills action plan within transformation programmes,
- Embedding the new Strategic Planning Board to enable a more joined up approach to prioritisation and scheduling of new programmes and projects,

10. ENHANCE THE ECOSYSTEM FOR SMART CITY INNOVATION

We will seek opportunities to improve alignment between strategic actions and activities within the city that would allow us to accelerate and scale up smart city innovation, for example;

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- Existing smart city programmes,
- Relationships with the innovation districts and innovation centres (e.g. CENSIS, Data Lab, Digital Health and Care Institute (DHI), Construction Scotland Innovation Centre (CSIC)/catapults (e.g. Connected Places Catapult),
- University partnerships and engagement,
- The Centre for Civic Innovation and open innovation,
- Engagement with the tech cluster and industry,
- Publication of open data and development of data analytics,
- Industry and academic interest in using Glasgow as a testbed for research and innovation,
- Strategic actions to create a Smart City Living Lab and City Software Developer Kit (SDK),
- Glasgow City of Science and Innovation.

7. Acknowledgements

The following partners have been major contributors to the implementation of the strategy to date;

- Apple
- CGI
- CENSIS
- City Fibre
- CivTech® Scotland
- Clyde College
- COSLA
- Digital Health and Care Innovation Centre
- Digital Office for Scottish Local Government
- Gartner
- Glasgow Chamber of Commerce
- Glasgow Community Planning Partnership
- Glasgow Health and Social Care Partnership
- Glasgow Housing Association
- Glasgow Kelvin College
- Glasgow Life
- Glasgow School of Art
- Improvement Service
- Itron
- Microsoft
- NHS Greater Glasgow and Clyde
- NHS National Services Scotland
- Scottish Council for Voluntary Organisations (SCVO)
- Scottish Enterprise
- Scottish Futures Trust
- Scottish Government
- Siemens
- Skills Development Scotland
- SP Energy Networks
- Tennent's
- Transport Scotland
- University of Glasgow
- University of Strathclyde
- Wheatley Group
- XMA

8. APPENDIX A – DIGITAL ECONOMY ACTION PLAN PROGRESS

ACTION PLAN PROGRESS FOR DIGITAL BUSINESS

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will establish and promote a vibrant calendar of digital events and conferences, and will seek opportunities to attract more digital events to the city.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow Life • Glasgow Chamber of Commerce • Glasgow City Council 					<p>The Glasgow Convention Centre has agreed to seek opportunities to attract digital conferences to the city. Some recent achievements and major international digital events that are planned in the city include;</p> <ul style="list-style-type: none"> • The European Conference on Optical Communications (ECOC), 2023 (IET) at the SEC • The World Congress on Computational Intelligence (IEEE), held virtually as a consequence of COVID-19). 2020 <p>Other Scottish and UK digital-themed conferences held within the city include;</p> <ul style="list-style-type: none"> • All Energy Conference, at the SEC • The Digital Health and Care Conference (Scottish Government, at the Technology and Innovation Centre • Tech Summit (CENSIS) at the Glasgow Royal Concert Hall <p>3D Printing Scotland, at the SEC</p>	<p>As well as the direct economic benefits of hosting events, hosting smart cities and digital conferences in the city can increase the awareness of (and provide opportunities to showcase) Glasgow's achievements, and provide opportunities for Glasgow businesses and universities that attend the events.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>2. We will commission a review of the tech cluster to identify opportunities to better support and grow the community, and we will work with the sector and partners to implement the findings of the review.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow Chamber of Commerce Glasgow City Council 					<p>A preliminary mapping exercise of the city's digital ecosystem has been produced to increase knowledge of activity in the city, maximise opportunities and identify areas that might need more focus.</p>	None
<p>3. We will promote and support the tech start-up community</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow Chamber of Commerce Glasgow City Council 					<p>Not yet commenced. Action to be aligned with the Mark Logan Review</p>	None

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. We will embed digital as a theme within the Innovation Districts and support the communities that can facilitate digital technology innovation (e.g. Innovation Centres)</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow Chamber of Commerce Glasgow City Council 					<p>Digital is a strong theme within both the Glasgow City Innovation District and the Glasgow Riverside Innovation District.</p> <p>The Glasgow City Innovation District was already home to the following;</p> <ul style="list-style-type: none"> CENSIS (IoT, sensors and imaging) Innovation Centre, Digital Health and Care Innovation Centre (DHI) Centre for Civic Innovation The Data Lab Scotland <p>It has now also become the home for Scotland’s 5G Centre and the Connected Places Catapult.</p> <p>Smart city technology will be a key theme within the Glasgow Riverside Innovation District, largely as a consequence of the University of Glasgow’s 5G Smart Campus Living Lab.</p> <p>The Centre for Civic Innovation has further developed it’s relationship with the Innovation Centres, and has involved the Innovation Centres in a number of city-led innovation challenges.</p>	

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>5. We will undertake a review of the potential impact of digital to Glasgow’s key sectors and develop case studies to promote digital innovation across key sectors</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow Chamber of Commerce Glasgow City Council 					Not yet commenced.	None
<p>6. We will work in partnership to develop a greater focus and integration across the city’s business support to help companies in Glasgow make more effective use of digital technologies to increase competitiveness, trade online and improve their productivity</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow Chamber of Commerce Scottish Enterprise Glasgow City Council 					The primary focus of 2019/20 for Digital Business, a review of business support by GCC/SE/Business Gateway has been carried out which has led to a new focus on digital/tech businesses	Increased promotion of the Digital Boost programme has led to 67 Glasgow companies being supported

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>7. We will develop coherent promotion and marketing messages and material focused on the diversity of Glasgow’s digital sectors, including an inward investment prospectus.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow Chamber of Commerce • Glasgow City Council 					<p>Invest Glasgow has produced a new Digital Technology inward investment prospectus^[1] to showcase Glasgow as a leading destination for digital/tech inward investment, building on the success of the Barclays announcement last year. (no outputs available)</p>	

[1] <http://investglasgow.com/digital-technology/>

ACTION PLAN PROGRESS FOR DIGITAL SKILLS AND EMPLOYMENT

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will establish a city digital skills research programme to include commissioning a review of current digital technology skills gaps, and research into the future digital technology skills needs of Glasgow’s economy.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Skills Development Scotland • Glasgow City Council 					<p>A digital skills research programme has been commissioned and completed and includes conducting secondary data analysis and primary research via group consultations with employers. This research includes:</p> <ul style="list-style-type: none"> - The composition of the digital tech sector in Glasgow - The educational supply of digital tech skills in Glasgow - The current and future digital tech skills needs of Glasgow employers 	<p>The report forms a robust evidence base to underpin action delivery and inform onward work</p>
<p>2. We will promote national activities which support schools in their delivery of computer science education (e.g. Digital Schools Award, teacher CPD), and work with schools to develop a tailored regional programme of support.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Skills Development Scotland • Glasgow City Council 					<p>Research conducted as part of the study referenced above</p>	<p>The report forms a robust evidence base to underpin action delivery and inform onward work</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>3. We will establish an industry partnership to support a coordinated approach for employers to engage with the development and delivery of digital skills education.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Skills Development Scotland • Glasgow Chamber of Commerce • Glasgow City Council 					<p>This project has been established with consultation and input from schools, teachers and Glasgow employers.</p> <ul style="list-style-type: none"> • 3 schools recruited: 1 complete, 2 delayed; evaluation has been delayed due to COVID <p>Initial delivery commenced pre-COVID but is now on-hold. Outputs include employer materials which can be delivered to augment digital tech school curriculum.</p>	
<p>4. We will establish a programme to promote the availability, high quality and diversity of digital careers in Glasgow.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Skills Development Scotland • Glasgow City Council 					<p>The initial focus has been on strategy, content creation, a campaign pilot and partnership approach with recommendations for how this will be delivered post March. A media campaign was started in March and a partner toolkit developed. This has been halted due to Covid-19.</p>	

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>5. We will expand the pool of digital technology talent by promoting the range of re-skilling opportunities which enable individuals to re-train for Glasgow technology roles.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Skills Development Scotland • Glasgow City Council 					Not started due to funding constraints and COVID	
<p>6. We will promote and expand the network of Glasgow tech clubs to ensure that all young people have access to informal opportunities to develop their digital technology skills and interests.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Skills Development • Glasgow City Council 					Research study commissioned and an overall mapping of current provision is included in the report, along with recommendations on improvements required.	

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ACTION PLAN PROGRESS FOR DIGITAL INCLUSION AND PARTICIPATION

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will work in partnership across all sectors in the city to promote and collaborate to deliver the pledges of Scotland’s Digital Participation Charter.</p> <p>2. We will work in partnership across all sectors in the city to collaborate to develop, share resources, and deliver a coherent programme of staff/volunteer training.</p> <p>3. We will establish a coherent city-wide catalogue of digital inclusion and participation training in partnership with all sectors in the city.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow Clyde College • Glasgow Kelvin College • Glasgow Life • Glasgow City Council • Wheatley Group • Scottish Government • SCVO 					<p>Partners continue to work collaboratively in the city to deliver digital and inclusion programmes, contributing to the pledges of Scotland’s Digital Participation Charter. Examples include;</p> <ul style="list-style-type: none"> • The Glasgow Coding Learning programme • The Digi Pals programme • The Digital Skills for Universal Credit programme <p>Glasgow Life are working closely with Scottish Government to implement the Connecting Scotland programme within Glasgow.</p> <p>Resources such as facilities, equipment, and training material are being shared between partners.</p> <p>The John Wheatley Learning Network⁴⁵ provides a catalogue of courses available to cities and provides access to learning and teaching resources.</p>	<ul style="list-style-type: none"> • Improve digital literacy, • Improved access to learning, • Improved employability, • improving access to services and benefits, • Reduced social exclusion, • Increased participation (in social, economic, and civic life).

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. We will deliver the Digital Inclusion and Participation work within Glasgow’s Community Learning and Development Plan 2018-2022.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow Community Planning Partnership • Glasgow Kelvin College • Glasgow Life • Glasgow City Council 					Partners have ensured that the commitments in the city’s CLD plan (e.g. accessible basic digital skills for all and strengthening the digital skills of delivery staff) are delivered in the key actions which have been the focus of activity in 2019/20. In line with this, 780 devices and connectivity for the most vulnerable have been secured through the Connecting Scotland initiative. Trials of 50 devices/connectivity have been carried out at Govan Housing Association and Glasgow Disability Alliance.	173 Individual learners are currently enrolled on the ‘Glasgow Code learning’ courses
<p>5. We will deliver a targeted Digital Inclusion programme that ensures that everybody has access to Universal Credit.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow Life • Glasgow City Council 					A city-wide approach has been created to ensure there is help and advice available at a neighbourhood level for all who need it.	3951 clients have been helped to make their Universal Credit applications on-line and connected to basic digital skills training and other relevant local help and advice by the Glasgow Libraries UC project.

⁴⁵ <https://johnwheatleylearningnetwork.scot/>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>6. We will provide opportunities for people to further develop their essential digital skills by signposting opportunities to develop advanced digital skills for the work-place.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow Life • Glasgow City Council 					<p>Collaborative working has ensured a clear digital learning pathway is in place offering the opportunity for learners to progress from basic digital skills for life to a digital skill set which enhances employability and creates the advanced skills sought in the city's tech sector.</p>	<p>730 Individual learners achieving the competencies set out in the Essential Digital Skills Framework via the Glasgow Life Flexible learning Model.</p>
<p>7. We will encourage companies to promote digital inclusion and participation programmes to their staff, and will provide opportunities for companies to actively support digital inclusion and participation initiatives through their corporate social responsibility and/or volunteering.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow Kelvin College • Glasgow Life • Glasgow City Council 					<p>Not commenced</p>	<p>None</p>

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ACTION PLAN PROGRESS FOR DIGITAL CONNECTIVITY

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will establish a partnership which will invest, build and manage a shared digital communications infrastructure.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Scottish Government 					<p>All of the current Mobile Network Operators in the UK are planning 5G roll out in Glasgow with BT/EE and Vodafone already covering parts of the City with 5G started; engagement with a number of organisations about rolling out a variety of digital infrastructure in Glasgow from fibre through to small cells.</p>	<p>Glasgow is among the first major cities to have 5G coverage from a number of operators.</p> <p>Announcements from both BT Openreach (October 2019) and City Fibre (March 2020) of investment in fibre to the home in Glasgow</p>
<p>2. We will undertake a programme of “Barrier Busting” to address local authority-enabling (process and asset) aspects of digital connectivity deployment.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Scottish Government • Scottish Futures Trust • Glasgow City Council 					<p>The project to streamline processes and establish a telecoms unit is now complete and the new unit will be fully functional at launch of the portal in September 2020, supported by an online asset catalogue. We work closely with SG and SFT to share all barrier busting collateral and knowledge and will also share this across all local authorities in Scotland.</p>	<p>Glasgow is now nationally recognised as leading the way on attracting and supporting investment in digital infrastructure. A number of UK authorities have consulted Glasgow on approaches to working with industry. Glasgow’s digital infrastructure is growing enabling better and broader coverage. Glasgow is recognised as a city that works well and cost efficiently with industry</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>3. We will establish “digital master-planning” as a key activity within our overall city planning.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council 					<p>GCC provided significant contributions to the Scottish Infrastructure Commission Report and many of the recommendations are already underway in Glasgow.</p> <p>Working with colleagues to ensure ‘digital’ is considered at all stages; input provided to the Scottish Infrastructure Commission and NPF4</p> <p>GCC hosted a Digital Masterplanning event for developers and planners in February 2020</p>	<p>A growing recognition of the importance of planning for digital infrastructure at the earliest opportunity amongst diverse city stakeholders including planners, developers and within GCC.</p>
<p>4. We will ensure that local and national agencies promote the value that city-wide connectivity enables, and support companies to make better decisions about their digital connectivity.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow Chamber of Commerce Scottish Enterprise Scottish Government Glasgow City Council 					<p>Published Glasgow City Region Connectivity Strategy in January 2019</p> <p>Glasgow Chamber of Commerce, SE and SG are all working with GCC to promote the value of connectivity and support GCC’s efforts to attract investment.</p>	<p>Maximising every opportunity to improve connectivity and support inclusive economic growth.</p>

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9. APPENDIX B – ACTION PLAN PROGRESS FOR DIGITAL AND SMART SERVICES

ACTION PLAN PROGRESS FOR DIGITAL CUSTOMER EXPERIENCE

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will increase the number of transactions that can be completed online, and where possible make forms simpler and easier for people to use.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CGI 					<p>A limited number of new online forms are now available. There is a plan to scale up new online forms during in 20/21, particularly for services provided by Neighbourhoods and Sustainability.</p> <p>Work is also underway to increase alternatives to payments methods that require physical contact (i.e. internet payments and automated telephone payments).</p> <p>A webchat service will be made available for testing towards the end of 2020.</p>	<p>Access to these services is increased to 24/7 across a range of devices, enabling customers to interact with the council in a way and at a time that suits them, and at the same time reducing the cost of transactions to the Council.</p> <p>Webchat will bring instant access to subject matter experts increasing the chance of any issues being resolved quickly and efficiently.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>2. We will improve the integration between our online services and the operational systems that are used by our staff to ensure that the customer experience is as joined up as possible.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>An integration has been established with key operational systems to pass customer requests/reports to operational staff and to provide customers with up to date notifications on the progress of requests. Additional integrations will be delivered across other operational systems to further enhancements to the customer experience.</p>	<p>Customers can increasingly be kept up to date with the progress of their request or reports in order to improve customer satisfaction and reduce the need for additional contact. In addition, the integration enables services to be delivered in a more responsive manner and removes manual steps to re-key information between business systems.</p>
<p>3. Where online services provide access to personal and/or sensitive information we will integrate our online services with relevant national online identity assurance platforms.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI • Improvement Service 					<p>We have implemented the mygovscot myaccount service for accessing secure services.</p> <p>The customer contact centre has established a process to encourage and support citizens to sign up to the myaccount as part of call handling procedures.</p>	<p>myaccount is a simple, secure way to access a range of Scottish public services online using just one username and password. myaccount is a national initiative giving public sector bodies across Scotland a single sign on mechanism for service access. By signing up to the service, citizens have easier access to services across the public sector and have a single view of transactions.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. We will implement a new platform that can send email and/or text notifications to allow customers to be better kept informed.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>Email notifications have been implemented for the new forms that have been made available, and will continue to be deployed by default.</p>	<p>Access to enhanced communication will ensure customers are aware of the status of their transactions with the council, reducing the need for follow-up contact, and improving customer satisfaction.</p>
<p>5. With the consent of our residents we will make better use of data to remove the need to apply for grants and services if our data tells us that they are entitled to them.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CivTech® Scotland • Scottish Government 					<p>Building upon the work of automatic entitlement for clothing grants, Financial Services has initiated an investigation into the feasibility of a Single Financial Assessment that could be used to trigger benefits and grants.</p> <p>Work is also underway with the new Social Security Service related to entitlement and the passport-ing of entitlements.</p>	<ul style="list-style-type: none"> • Improved access to grants and benefits to which citizens are entitled • Reduced overhead relating to the processing of applications.

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ACTION PLAN PROGRESS FOR DIGITAL HEALTH AND CARE

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will work with NHS Greater Glasgow and Clyde to provide seamless access to digital services across health and social care services and provide better integration between health and care services.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Glasgow Health and Social Care Partnership • NHS Greater Glasgow and Clyde • CGI 					<p>Both NHS GGC and GGC have digital strategies. The Health and Social Care Partnership (HSCP) has been developing a joint strategy that aims to bring the aims of the two strategies together in a way that is operational relevant to the HSCP.</p> <p>A joint desktop solution has been established for staff and plans are in place to enhance this with integration of network infrastructure and Microsoft 365 federation to allow calendar/contact sharing across the two organisations.</p> <p>Work has been underway between the HSCP, GCC, and NHS GGC to establish appropriate information governance to allow health records and care records to be integrated.</p> <p>During COVID-19 information governance arrangements have been established with NHS NSS to share information on people who are shielding to enable Glasgow City Council and the HSCP to coordinate a range of support services on their behalf.</p>	<p>The work to date has enabled staff across NHS GGC and GGC to work more in a more integrated manner. This will be further enhanced by integrated networks and Microsoft 365.</p> <p>Once information governance arrangements are in place, and the integrated health and care record is implemented, improved outcomes for people in receipt of health and care services will be possible, for example enabling services to be more integrated and designed around the citizen, and enabling more preventative interventions.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>2. We will explore opportunities to expand the use of digital engagement tools which allow people to have video calls with health and care professionals.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Glasgow Health and Social Care Partnership • NHS Greater Glasgow and Clyde • Scottish Government 					<p>The COVID-19 pandemic has accelerated the use of (Microsoft Teams) video conferencing to enable staff to communicate internally, and with partners.</p> <p>The Health and Social Care Partnership has also begun to adopt the NHS Near Me solution (which is licensed for social care use as well as health). Initial trials have been undertaken for calls relating to Drug and Alcohol Addictions, Mental Health, and Learning Disabilities.</p> <p>Staff have also made extensive use of Whatsapp for communicating with client groups.</p>	<p>The benefits of video-conferencing are in line with the broader benefits seen across the council, indeed, the city.</p> <p>In addition, the use of NHS Near Me and Whatsapp is enabling staff to maintain better contact with people in receipt of care at a time where physical contact is restricted.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>3. We will migrate our telecare service to digital technology in advance of the switch-off of the public switched telephony network (PSTN) in order to provide a new “digital telecare/telehealth platform” that can enable advanced digital services that can help people to live independent lives.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Glasgow Health and Social Care Partnership • CGI 					<p>Detailed designs and test plans are in place to upgrade the Alarm Receiving Centre (ARC) software for Telecare, and to migrate infrastructure into Council’s preferred secure data centre hosting environment. At the same time, telephony will be migrated to the Council’s corporate (digital) telephony system.</p> <p>Plans are being developed to migrate analogue equipment to digital, and to seek opportunities to use the transition to reform the telecare service.</p>	<p>The upgrade of the ARC, and the migration to the data centre will improve the resilience and disaster recovery for the telecare service and will enable the migration of current telecare equipment that is used by service users from analogue to digital, which is required before the analogue phone network is switched off in 2025.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. We will deliver a “Digital Resilience” programme with children and young people in care and will expand this older people’s residential homes.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow Health and Social Care Partnership • Glasgow City Council • Carnegie UK Trust • CGI 					<p>The Digital Resilience Programme for looked after children and young people has been delivered. Plans are currently being put in place.</p> <p>Achievements of the programme include;</p> <ul style="list-style-type: none"> • Providing a laptop computer and WiFi access to every child and young person in a care home setting. • The creation of a “digital champions” network • Development of a digital skills framework • Creation of a website to provide support for staff 	<p>Delivered in collaboration with Carnegie UK, the aim of the Digital Resilience Programme was to:-</p> <ul style="list-style-type: none"> • Improve the online safety of looked after children and young people, • Improve access to online resources as part of everyday life and development • Enhancing support for health and wellbeing <p>The programme set out to shift the focus from restricting internet access to equipping children and young people with the skills to be safe online.</p> <p>Any specific impacts benefits seen?</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>5. We will seek opportunities to engage with partners, Innovation Centres, industry, and universities to stimulate innovation in digital health and care that will allow us to explore how digital technology can help us to deliver our health and care priorities.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Glasgow Health and Social Care Partnership • Scottish Enterprise • CENSIS • Digital Health and Care Innovation Centre 					<p>An Open Innovation Challenge was undertaken in collaboration with the Centre for Civic Innovation, funded by the Scottish Enterprise “Can Do” Challenge. The challenge focused on how technology could enhance overnight support for children and young people with learning disabilities and elderly people. The first phase was focused on Research and Development to develop concepts in collaboration with five SMEs. A further (product development) phase is now planned with two SMEs whereby the two successful companies will work alongside the HSCP to co-develop proof of concepts products for their concepts.</p> <p>A telecommunication company is also in the process of delivering showcases of 5G-enabled digital health and care technology within the city.</p>	<p>The first phase of the Open Innovation Challenge alone has provided inspiration for the role that digital technology (particularly technologies such as wearable technology, Internet of Things, and data analytics and artificial intelligence (AI) can play) in transforming care services to be more targeted and preventative.</p> <p>The successful funding bid to Scottish Enterprise to deliver the second phase of the Challenge provides an opportunity to develop the concepts into live proof of concepts alongside the successful SMEs.</p> <p>Throughout the process, the Centre for Civic Innovation and the HSCP has developed stronger relationships with the Digital Health and Care Institute (DHI), and CENSIS innovation centres which further strengthens the potential for digital health and care innovation within Glasgow, providing opportunities to re-imagine and redesign services, and providing economic opportunity for Glasgow.</p>

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ACTION PLAN PROGRESS FOR DIGITAL LEARNING AND TEACHING

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will provide access to over 50,000 Apple iPads to every child from P6 and above (the largest deployment of Apple iPads in the world).</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI • XMA • Apple 					<p>The programme to provide iPads to teachers is complete and over 25,000 iPads have now been distributed for use by pupils. As a consequence of COVID-19, the plans to distribute the iPads to remaining pupils are being accelerated.</p>	<p>The impact of the deployment of iPads has not yet been fully measured, but is being coordinated through the Connected Learning Programme. The expected outcomes of the Digital Learning Strategy, of which this is a key enabler include a range of learning outcomes for children and young people such as;</p> <ul style="list-style-type: none"> • Managing their digital identity • Ability to use digital devices and media • Managing risks online • Understanding cyber security • Emotional intelligence online • Ability to communicate online • Finding, evaluating, utilising, sharing and creating content.
<p>2. We will expand the availability of Wi-Fi across classrooms</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>WiFi access to digital resources has now been rolled out to almost all teaching spaces across the Education environment. (<5 sites remaining and some remediation work required to ensure consistent Wi-Fi coverage across all learning areas)</p>	<p>Staff and pupils will have access to digital learning resources across all learning areas across all Education establishments.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>3. We will upgrade the network connectivity provided to schools to (up to) 100 times faster than its current speed.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI • CityFibre 					<p>The network upgrade to all schools has now been completed. All secondary schools now have resilient 5 Gigabit connectivity, with primary schools benefiting from 1 Gigabit connectivity</p>	<p>Pupils and staff at learning establishments have high speed access to digital learning resources.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. We will place digital leadership at the heart of School Improvement Plans and will undertake an extensive programme of digital leadership development and professional development for school staff.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • XMA • Apple 					<p>Staff are provided with professional development training opportunities in digital learning and new technologies.</p> <p>The needs of staff and schools are regularly assessed to ensure progress is being made and allow development plans to be put in place where needed.</p> <p>Digital learning is a key aspect of school improvement plans.</p> <p>Virtual Apple Regional Training Centres (RTCs) to support Career Long Professional Learning (CLPL) have been established in each area of the city with 50 trainers, from all learning communities, from all sectors, signing up to deliver training in each Local Improvement Group (LIG). The training materials used are specified and developed by Apple.</p>	<p>“A Digital Learning” staff questionnaire was issued to practitioners in all education sectors in 2016/17 to determine the extent to which a variety of digital technology was used to enhance learning in establishments, to identify the professional learning needs of practitioners and measure readiness for new digital learning resources.</p> <p>The survey was repeated in 2018/19 and highlighted increased engagement with digital learning.</p> <p>Significantly more schools now have digital learning on their School Improvement Plan and have strategic leadership for digital learning within their establishment. More teachers and CDOs are confident in planning for digital literacy across subject areas and more pupils are applying their digital literacy skills in other contexts. There is a significant increase in the use of Glow for collaboration, the use of Apps and awareness of the risks involved with technologies. Nearly double the number of teachers and CDOs are now accessing digital learning.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>5. We will work with SEEMiS and the Improvement Service to roll out the national “Parent Portal” (which will provide parents with greater access to information about their school and their child’s performance).</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI • Improvement Service • SEEMiS 					<p>A Programme Initiation Document has been prepared to commence the implementation of the Parent Portal.</p>	<p>The introduction of the Parent Portal will:-</p> <ul style="list-style-type: none"> • Improve parental engagement • Improve accessibility for all • Provide a convenient way to access information for busy parents • Provide all schools with a the same communication tool (providing consistency and equality across the city) • Ensure core messages are conveyed in a consistent manner across the estate • Reduce administration at schools • Provide the potential to reduce carbon footprint of education with respect to reduction in the number of letters and report cards that are currently issued in hard copy •

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ACTION PLAN PROGRESS FOR DIGITAL PLANNING

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will develop a 3D strategy. This strategy will include plans to enable 3D planning application submissions and the development of an intelligent 3D City Model (“3DC”) that could be re-used across a range of public services in the city.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>The block model and high definition model have been exported from the Urban Model, converted and loaded to the Geographical Information Systems (GIS) environment. A number of scenarios have been developed to test its abilities, such as importing Building Information Models (BIM), Google files (KMZ) and AutoCAD 3D files.</p> <p>Engagement is ongoing with the Scottish Government to understand the benefits and impact of their forthcoming Digital Planning Strategy.</p>	<p>The new 3D City Model is now in a state which permits ongoing in-house development of the model and integration with data sources which will introduce opportunities for numerous data sharing and visualisation purposes. Examples include:</p> <ul style="list-style-type: none"> • Planning – Waterloo Street and Minerva Street/Finnieston • City Deal – 3D Digital Asset Register, Elmbank Street Avenues • P&LS – GCC Owned Properties • GCC Website – Urban Model Replacement • City Deal – Clyde Waterfront and West End Innovation Quarter (in progress) <p>The model and webscenes created can be shared on the Open Data Hub once the Proof of Concept is complete.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>2. We will establish a Building Information Modelling (“BIM”) Framework that will set out our data requirements for 3D building and city modelling.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>Engagement with our IT providers has commenced to move to a cloud hosted platform for the BIM models and 3D Laser scans. This will move us into BIM level 3 and satisfy the objectives of the Scottish Government’s digital strategy, “Realising Scotland’s Full Potential in a Digital World: A Digital Strategy for Scotland”.</p>	<p>This will introduce flexibility and enable mobility of the workforce. It supports collaboration from all parties in multiple locations to co-create designs in real time. It will reduce review times and improve quality. The streamlined approach should deliver public projects quicker and at less cost.</p> <p>3D BIM models will be imported into the new 3D City Model.</p>
<p>3. We will proactively explore opportunities to reuse the Intelligent 3D City model in novel and innovative scenarios (such as augmented reality simulations of developments) across a range of public services.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>Demonstrations of the scenarios have been created to test the model in the GIS environment and have been shared with Planning Services, which received a positive response and generated a range of ideas for its use.</p>	<p>A programme of work can now be developed to support projects across the Glasgow family.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. We will publish the 3D City model as open data and will seek opportunities to stimulate open innovation that makes use of the model.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>The Open Data Hub Proof of Concept is almost complete. Once complete the model can then be shared via this portal.</p>	<p>The model will be available to be viewed and used to support the businesses and communities of the city.</p>

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ACTION PLAN PROGRESS FOR SMARTER CITY MANAGEMENT

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will continue our deployment of mobile devices for staff to keep them connected in the communities they serve.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CGI 					<p>Mobile devices have been installed in Refuse Collection Vehicles at the Shieldhall depot. These devices allow crews to manage their domestic collections by providing sequenced routes direct to the device within the cab</p>	<p>The devices enable real-time confirmation that bin collections have been completed (by street). This information is then passed back to citizens via the notification service described within the Digital Customer Experience Action Plan, thus enabling a reduction in follow-up enquiries and possible complaints.</p> <p>The devices also reduce the need for manual processes at depots, and enable better resource utilisation and improvement in efficiency.</p>
<p>2. We will migrate infrastructure asset management and job scheduling and workflow from disparate software systems into a single common platform.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CGI 					<p>A programme is underway to deploy a new asset management and job scheduling and allocation platform across Neighbourhoods and Sustainability. It will allow all assets within Neighbourhoods and Sustainability to be managed via a single platform (including roads, lights, parks, etc.). This will eliminate current disparate systems currently operating in each area of the service.</p> <p>The platform will enable workflow processes to be customised and managed and controlled by staff, allowing automated triggers and notifications to relevant parties. This will eliminate significant non-value adding activity that is currently undertaken via phone calls, emails, spreadsheets, etc.</p>	<p>The initial deployment of the platform is scheduled for Autumn 2020.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>3. We will scale up our smart city infrastructure such as Intelligent Street Lighting and Smart Bins across the whole of the city</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Itron • CGI 					<p>Intelligent street lighting has been deployed across the whole of the city centre (a total of over 3,500 street lights have now been digital connected).</p>	<p>The intelligent street lights provide the following benefits;</p> <ul style="list-style-type: none"> • Energy savings • Improved public safety • Improved maintainability

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. We will continue to attract and deliver smart city innovation projects such as our current Horizon 2020 “RUGGEDISED Smart Street” project.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Glasgow Housing Association • SP Energy Networks • Siemens • Tennent’s • Transport Scotland 					<p>300 intelligent street lights have been deployed within the project district.</p> <p>Designs are now complete for deploying EV charging units into the Intelligent Street Lights.</p> <p>Plans are being developed to deploy air quality sensors into the Intelligent Street Lighting network within the district.</p> <p>The development of the Data-based Decision Platform is complete.</p>	<p>The aims of the Smart Street project are to;</p> <ul style="list-style-type: none"> • Improve the quality of life of the citizens, by offering the citizens a clean, safe, attractive, inclusive and affordable living environment • Reduce the environmental impacts of activities, amongst others by achieving a significant reduction of CO2 emissions, a major increase in the investment and usage of renewable energy sources and an increase in the deployment of electric vehicles. • Create a stimulating environment for sustainable economic development, by generating more sustainable jobs, stimulating community involvement in smart solutions (as consumers and as producers) and to boost start-up and existing companies to exploit the opportunities of the green digital economy and Internet of Things (IoT)

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
5. We will provide opportunities for SMEs to innovate with smart city infrastructure by creating a “living lab” environment for smart city innovation, aligned to the Centre for Civic Innovation, and our innovation districts.					<p>The University of Glasgow’s 5G Smart Campus project will provide a living lab smart city environment within the Glasgow Riverside Innovation District.</p> <p>The IoT Scotland network now provides coverage of 99% across Glasgow, and provides opportunities for SMEs to innovate within the built environment.</p>	<p>The networks will provide opportunities to stimulate innovation in smart city technology which could provide opportunities for research and innovation for Glasgow companies and could be used to drive inward investment.</p>

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ACTION PLAN PROGRESS FOR DIGITAL TOURISM

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will make better use of data about potential, current, and past visits to inform our marketing and promotion of the city, and to better understand the future demand on the tourism sector.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow Life Glasgow City Region Glasgow City Council 					<p>“Data and Insights” is embedded as a thematic work-stream of the “Glasgow City Region Tourism Strategy”⁴⁶. The Glasgow City Region Intelligence Hub supports the strategy by;</p> <ul style="list-style-type: none"> “Enabling a data and insight driven process for customer segmentation, creative product and campaign development, and competitor and trend analysis Ensuring consistent and accurate tourism indicators and insights for region.” 	
<p>2. We will use digital technology to enrich the visitor experience at our museums, for example using augmented reality.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CGI 					<p>Development is underway of an Augmented Reality (AR) app that will provide AR tours of the Glasgow City Chambers. The development is expected to complete towards the end of 2020. If successful, this can be rolled out to further venues across the city.</p> <p>The app should allow the visitor experience in venues to be enhanced across the city.</p> <p>It will also provide the potential for self-directed tours and improve accessibility to information.</p>	

⁴⁶ <https://glasgowtourismandvisitorplan.com/media/2084/glasgow-s-tourism-and-visitor-plan-to-2023-march-2017.pdf>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>3. We will use digital technology to enrich the visitor experience within the built environment of the city, for example using digital wayfinding, and augmented reality applications.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Glasgow Life • CGI 					<p>A “Charles Rennie Mackintosh” app has been developed and implemented as part of the celebration of the 100 year anniversary of his birth. Fourteen venues provide wayfinding for those wishing to find out more and/or visit each venue.</p>	<p>Improved visitor experience by:</p> <ul style="list-style-type: none"> • Helping to visitors to discover and find their way to venues in Glasgow • Providing historical information to visitors that helps promote Glasgow’s heritage as a place of innovation, learning and design.

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ACTION PLAN PROGRESS FOR DIGITAL COMMUNITY EMPOWERMENT

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will work with communities to design and launch a new digital service which will provide communities with better access to real-time information about their area including community assets, demographics, planning applications, and statistics on reports that have been made to (and are being managed by) the Council</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council 					<p>Work has been undertaken to provide interactive ward dashboards to Councillors. The dashboards provide access to data on community assets, demographics, and on service trends and performance.</p> <p>Once trialled with councillors, work will be undertaken to expand the concept to constituents as part of our Open Data work.</p>	<p>The potential to improve decision-making</p> <p>Improved transparency and better informed communities.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>2. We will expand our use of digital tools from a focus on consultation to engaging and involving Glasgow’s citizens in setting general priorities, and in making decisions about how best to prioritise Council spending.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council 					<p>The council continues to expand its use of online consultation tools through the <u>Consultation Hub</u>⁴⁷.</p> <p>The use of Microsoft Teams has been approved for Elected Members surgeries that will provide opportunities for engaging with constituents.</p>	Increased reach and citizen participation
<p>3. We will involve communities in the design of our services, particularly where we are re-designing services using digital technology, and supporting involvement in public service evaluation and planning through a variety of means,</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council 					<p>The Centre for Civic Innovation has established processes for engaging with citizens in the design of services through design-led innovation/service design techniques.</p>	Users are placed at the heart of the design of public service by being involved in the design process.

⁴⁷ <https://www.glasgow.gov.uk/consultations>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. Working with Scottish Government, COSLA, and the Digital Office for Scottish Local Government, we will introduce new digital apps that allow people to vote on local community matter. These can be used to maximise participation in Participatory Budgeting as it is deployed within the city.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • COSLA 					<p>The (open source) Consul Platform⁴⁸ that is used across 35 countries to support digital participation and democracy has been used to enable digital voting for participatory budgeting in Pollok and Calton. The solution is currently hosted by COSLA.</p>	<p>Increased reach and citizen participation</p>
<p>5. We will explore opportunities to use digital tools to support general community empowerment actions such as supporting community councils, participation requests, and asset transfers.</p>					<p>This activity has not yet commenced</p>	<p>None</p>

⁴⁸ <https://consulproject.org/>

ACTION PLAN PROGRESS FOR DIGITAL LEADERSHIP AND SKILLS

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. Working with partners such as the Digital Office for Scottish Local Government we will deliver a cultural change programme for elected members and council officers, and create synergies with similar partners across city partners.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Digital Office for Scottish Local Government 					<p>Glasgow City Council’s Extended Council Management Group (ECMG) has been given the responsibility for Digital Leadership and Skills.</p> <p>In order to develop a detailed action plan , the Digital Office for Scottish Local Government has been commissioned to complete the Digital Leadership Maturity assessment (which is a standard assessment tool that is used across Scottish Local Government⁴⁹). This involved interviewing directors, managers, and staff across the Council to assess the maturity of leadership approaches, transformation methods and skills development. The exercise is now complete and the report is being prepared for the ECMG to inform the Council’s action plan.</p>	

⁴⁹ <https://digitaloffice.scot/digital-leadership/digital-maturity-4>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>2. We will deliver a programme of communication, engagement, consultation, and dialogue aimed at key stakeholders as well as a network of “digital leaders” and “disrupters” to challenge existing thinking and ways of working.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Digital Office for Scottish Local Government • Gartner 					<p>We have run a number of joint sessions for the ECMG and business partners exposing them to different ways of working.</p> <p>We have worked extensively with Gartner to support the ECMG in developing aspects of digital leadership.</p>	<p>Increased knowledge and understanding amongst senior leaders that should percolate through the organisation and support change.</p>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>3. We will create a programme to develop and implement new transformation capabilities such as agile, service design, and open innovation.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Service Design Academy • Digital Office for Scottish Local Government • V&A Dundee 					<p>Agile awareness sessions have been carried out within the Strategic Innovation and Technology Team and techniques such as Kanban have been adopted across the team and within some transformation programmes.</p> <p>The newly-established M365 board has adopted agile as a framework for delivering new functionality on an iterative basis.</p> <p>A “Service Design” training programme has been delivered in partnership with the Service Design Academy. A relationship has been established with the Digital Office for Scottish Local Government to support the delivery of service design.</p> <p>The Centre for Civic Innovation has published its design-based innovation toolbox as an online resource⁵⁰ for anybody to use.</p>	<p>Many of the traditional approaches to delivering transformation focus on the optimisation of business processes. The capabilities and methods highlighted in the action plan enable more fundamental transformation;</p> <p>Agile Development – provides the ability to deliver projects where there are uncertain user requirements and where iteration and prototyping is required (e.g. new online customer experience),</p> <p>Service Design – provides a structured method for undertaking user research and re-designing services from a user-centric perspective,</p> <p>Open Innovation – provides the ability to engage with external organisations on a “challenge” basis rather than a “requirement basis”, providing opportunities to stimulate research and innovation and generate new ideas.</p> <p>The open innovation challenges delivered through the Centre for Civic Innovation have highlighted how these methods can lead to more progressing and transformative solutions.</p>

⁵⁰ <https://designtoolkit.azurewebsites.net/UnderstandingTheAsk.html>

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ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>4. We will establish an advanced digital skills programme to develop skills within the workforce. We will deliver in partnership with the Digital Office for Scottish Local Government, and in line with our broader digital skills and employment programme within the city.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • SC 					<p>This work will be prioritised according to the actions of the Digital Maturity review and action plan.</p>	None
<p>5. We will establish an essential digital skills programme for our staff which will be delivered through our Digital Inclusion and Participation project.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • SCVO • Digital Office for Scottish Local Government 					<p>A Microsoft Teams Digital Champions network has been established. This group is cross-service and is growing. Their role is to offer product support, identify business opportunities and develop product expertise across the M365 suite of applications/products.</p>	<p>Extending digital knowledge to the workforce in an effective way</p> <p>Recognised as a critical factor for the successful deployment of digital innovation and change – will help speed change through effectively.</p>

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ACTION PLAN FOR DATA FOUNDATIONS

ACTION	STATUS				HIGHLIGHTS	IMPACT
	STRATEGY	PLANNING	IN DELIVERY	DELIVERED		
<p>1. We will establish a new awareness and training programme that helps our staff to better understand the value of data and further develops awareness of the need for data standards and data quality for making better use of data to transform services.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council 					<p>Our first Data Governance Event for Information Mgmt Leaders took place on 25th Jan launching new Data Policy with focus on data governance and impact on data analytics. However COVID and the emerging reliance on data has shone a spotlight on data standards and data quality and allowed us to see first-hand the importance and how it contributes to our ability to deliver services.</p>	<p>COVID has shone a spotlight on data quality and allowed us to move from awareness to action to support areas where data quality is now impacting on business intelligence. The next step is for us to focus on how we can support services and staff by implementing data standards and improving data quality. This will likely involve a series of workshops and event for data stewards with practical hands on training and support.</p>

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<p>2. We will build on the foundation of GDPR by developing a data ethics framework to ensure that our use of data to transform services is done so in a way that respects privacy, rights, and ethics.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Scottish Government 					<p>Glasgow joined the Cities for Digital Rights at the end of 2019 in order to support the development of Glasgow’s data ethics framework and wider work on digital rights https://citiesfordigitalrights.org/glasgow</p> <p>COVID has again opened up discussions around ethical use of data and how we can use data to best support the most vulnerable in our communities.</p>	<p>The pandemic has accelerated our need to share data across public sector agencies in order to deliver more holistic citizen centric services going forward.</p> <p>Some early pilot COVID projects demonstrating data sharing across health and local authorities is leading the way to more joined up partnership working with ethical use of data at the heart.</p> <p>Scottish Government have developed a new Data Ethics Framework to support the Data and Intelligence Network. Glasgow plans to act as a pilot project for trialling the framework.</p>

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<p>3. We will develop online services that help put citizens in control of the data that is collected about them by allowing them to see how their data is used, and where possible, control consent.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CivTech@ Scotland 					<p>An open innovation project funded by the European Commission’s Interreg programme, and delivered through the Scottish Government’s CivTech programme, has explored the use of an application from a Scottish Community Interest Company called MyDex CIC who have developed a personal data store (PDS) that allows citizens to share data about their needs and experience of public transport with the public sector and in return receive updates from the public sector.</p> <p>There are plans to re-use the capability for Glasgow’s “Improving the Cancer Journey” programme.</p>	Improved transparency, increased trust in public services.
<p>4. We will catalogue data that is collected across the city so that everybody has a better understanding of what data is collected, and where it is processed and used.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CGI 					<p>As a result of our Open Data Platform PoC we have started to catalogue our data. Focusing primarily on high demand datasets initially, our intention is to develop a fully comprehensive catalogue which will support our open data agenda as well as internal use of data, removing duplication and promoting single source of the truth.</p>	The new open data catalogue will enable open data publication to be simplified and scaled up.

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<p>5. We will increase the number of open data sets that we publish and expand the use of our City Data Platform in order to provide a scalable platform for publishing open data, and providing meaningful visualisations of non-sensitive data through maps and dashboards.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CGI 					<p>Glasgow has delivered a Proof of Concept Open Data Platform on its existing ESRI Hub software as a potential solution for our Open Data aspirations. The PoC has now entered the evaluation stage, due to conclude at the end of September, after which we hope to be given the green light to launch our new platform and build upon the initial data work included in the PoC.</p>	<p>The new Open Data Platform will support our aspirations around citizens engagement and empowerment by sharing data in an informative and engaging way. The platform will be used to help citizens understand the city they live in, and provide key information in the context of participatory budgeting and community planning.</p> <p>The platform will also be used to provide data to academia and SME's who are best placed to develop innovative solutions to make life easier for both citizens and the council on a day to day basis.</p>

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<p>6. We will build communities of interest for data, and will facilitate engagement with city data through open innovation challenges.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council University of Glasgow 					<p>GCC, in collaboration with the Urban Big Data Centre and Centre for Population Health have established a community around mobility data, both access to and use of, in order to inform multiple city wide initiatives (such as the Local Transport Strategy, Liveable Neighbourhoods Strategy, Metro Study and Spaces for People.</p> <p>GCC are working with the University of Glasgow on developing a more coordinated collaborative approach to city wide challenges, putting the better use of data at the heart of any partnership working going forward.</p>	<p>Our collaboration with the UBDC has already delivered significant value through our CCTV object detection work, initially set up to measure the impact of public realm investment but now having a wider scope to measure activity levels across the city during and post lockdown to help us understand mobility behaviours and inform a number of studies into how we can better shape our infrastructure to support the needs of the citizens.</p> <p>Mention the Simon and Justine project here too.</p>

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ACTION PLAN PROGRESS FOR TECHNOLOGY FOUNDATIONS

ACTION	STATUS				HIGHLIGHTS	IMPACT
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<p>1. We will ensure our technology platforms are hosted in secure, modern and efficient data centres.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CGI 					<p>The migration from Glasgow City Council's on-premises data centre to a Tier 3 hosted Data Centre service is progressing as planned and is scheduled for completion by the end of 2020</p>	<p>Hosting Glasgow City Council's core business applications within infrastructure hosted at Tier 3 data centres will be provide;</p> <ul style="list-style-type: none"> Improved security Improve resilience Improved disaster recovery
<p>2. We will upgrade the capacity of our corporate and school networks and will expand the corporate and schools Wi-Fi networks.</p> <p>Partners:</p> <ul style="list-style-type: none"> Glasgow City Council CGI CityFibre 					<p>The upgrade of the Corporate and Education wide and local area networks has now been completed.</p> <p>All corporate sites now have a minimum WAN bandwidth of 100MB/s, primary schools have 1GB and secondary schools have resilient 5GB connections. In addition to this, wireless access points have been deployed to all teaching areas across schools</p>	<p>High speed digital connectivity for all staff and pupils</p>

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<p>3. We will ensure our staff have modern devices and will introduce new technologies to support better collaboration and modern work styles.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • Microsoft 					<p>A programme to refresh all staff devices is underway although it is likely that the profile of devices will be changed to align with plans for COVID-19 renewal.</p> <p>A programme to accelerate the adoption of Microsoft Teams to allow improved collaboration between staff and with partners has been established in response to the COVID-19 response. What are the latest figures?</p> <p>A programme board has been established to oversee an accelerated deployment of additional Microsoft 365 capabilities.</p>	<p>The device refresh programme will enable increased mobility and flexibility for staff, will improve the performance of business applications, and will enable new Microsoft 365 capabilities to be introduced.</p> <p>Microsoft Teams has enabled staff to work collaboratively and effectively during lockdown and has enabled better partnership working by making it easier to hold meetings with partner organisations.</p> <p>It also enabled Committees to be reinstated.</p>
<p>4. We will ensure that our data and our infrastructure platforms are secured to industry-leading security standards.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>All servers owned by Glasgow City Council that host key business applications are now hosted with a T3 datacentre which provides increased security and resilience.</p> <p>The servers hosting key business applications are now actively monitored by a Global Security Operations Centre</p>	<p>The confidentiality, integrity and availability of council data has been improved..</p>

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<p>5. We will strive to consolidate current disparate business applications into more common and reusable technology platforms.</p> <p>Partners:</p> <ul style="list-style-type: none"> • Glasgow City Council • CGI 					<p>24 applications have been decommissioned and delivered through corporate applications.</p> <p>Work is underway to consolidate duplicate applications across Arm's Length Organisations.</p> <p>A detailed review of applications within individual business areas is underway.</p>	<p>Reduced total cost of ownership to the council.</p> <p>Improved process flow and consistency of information.</p>
<p>6. We will work with partners across the city to make our technology platforms more interoperable and open and create a City Software Development Kit (SDK) that we will make available to staff and 3rd party developers.</p>					<p>This project has not yet commenced, although a basic software development kit is available for some open data sets published on the Open Glasgow data catalogue where data is published through an Application Programming Interface (API).</p>	

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