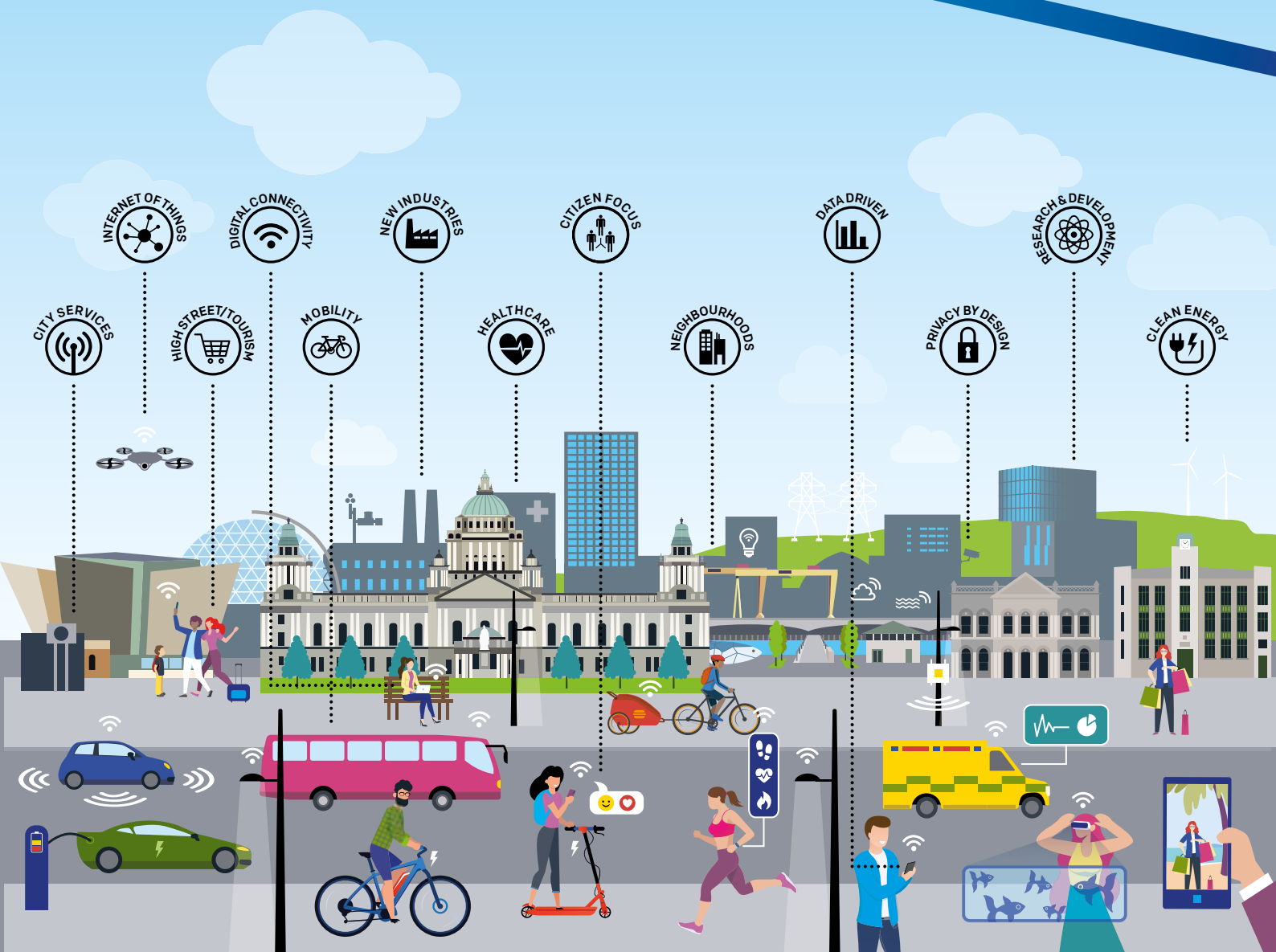


# SMART Belfast

# Belfast Urban Innovation Framework

2022 - 2027



# Engaging on this framework

**This refresh of Belfast City Council's urban innovation framework, 'Smart Belfast' is the product of a series of extensive engagement activities, review, and best practice research over the past 12 months.**

Much of the work was facilitated initially by the Connected Places Catapult who worked with city partners, local industry and public officials to develop a shared digital innovation ambition for the city and the region. Many of the elements regarding both the Smart District and the urban innovation ecosystem are the outworking of this engagement.

Subsequently, we have engaged with local stakeholders on the specifics of the Smart District as a delivery mechanism for the city's innovation ambition. This work was supported by German Smart Cities consultants, BABLE, Fraunhofer IAO, Fraunhofer FOKUS, and Eindhoven Brainport.

We want to extend our thanks to the many hundreds of individuals and organisations who have engaged enthusiastically in the process.

Belfast City Council now wishes to share a draft of the refreshed framework which brings together the outputs of this process. We are keen to get constructive contributions from stakeholders to ensure that the final framework is robust and makes a difference to our city's urban ambitions.

**From January to April 2022 we will be engaging through a number of channels:**

- The Belfast City Council Your Say platform where you and your organisation can respond formally to a series of questions on each element of the framework: [yoursay.belfastcity.gov.uk](https://yoursay.belfastcity.gov.uk)
- A public Smart Belfast webinar series will offer insights into urban innovation practice and more detail on the delivery of the programme
- Individual stakeholder briefings
- Community focused workshops on the citizen in a smart city.

Core to the Smart Belfast methodology is a commitment to user-centric co-design. The role of the Citizen Office of Digital Innovation (CODI) is central to this approach, working directly with communities on the emerging project portfolio to ensure it meets end-user needs.

The final framework is expected to be presented to the Strategic Policy and Resources Committee of Belfast City Council in late April 2022.

For full details please visit our website [smartbelfast.city](https://smartbelfast.city)



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1.

# Smart Belfast

# Introduction

**Belfast City Council and its partners are refreshing Smart Belfast. First devised in 2017, this framework aims to nurture an environment in which innovators from across industry, academia and the public sector can work together to address Belfast's major urban and economic challenges.**

Our framework refresh seeks to incorporate the many important ideas, opportunities and priorities that have emerged in this post-Covid world. In particular, we have sought to maximise the opportunities represented by the Belfast Region City Deal investments that are planned for the coming decade. We have also been keen to reflect on the growing impact of new technologies on our lives and the implications for urban policy.

This document has two sections. In the first, we set out our specific plans for a Belfast 'Smart District' and how it will seek to directly support the new Bolder Vision for our city centre.

In the second section, we consider how global trends in technology are affecting our city and its economy. We identify a number of underlying supporting 'pillars' that Belfast should have in place in order to maximise the potential for urban innovation and what partners need to do to strengthen these pillars.

## Smart Belfast 2017-21: Key Deliverables

**The first Smart Belfast Framework was developed by Belfast City Council's City Innovation team. Set up in 2017, the team works with partners from industry and academia to address major urban challenges through digital innovation.**

**It has delivered a range of projects, attracted substantial investment, and influenced the conversation about the impact of digital technologies on our city.**

The team has:

- Leveraged £10.2 million of investment
- Delivered 47 innovation projects
- Worked with over 200 SMEs and stakeholders
- Hosted over 30 events with 4,100 participants
- Attracted \$1 million to establish the Belfast Office for Resilience
- Built Northern Ireland's first free-to-use Internet of Things network
- Showcased the best of Belfast at four international tech conferences
- Developed a £120 million digital investment business case for the Belfast Region City Deal
- Brought forward recommendations for the establishment of a Belfast Digital Innovation Commissioner
- Informed the design and initiation of Innovation City Belfast, the city's innovation leadership partnership
- Established the Digital Catapult's Immersive Lab NI

# Our journey

2017 

Launch of the Smart Belfast Framework 2017-2021

2017-2021 

Delivered a series of challenge competitions focused on mobility, health, tourism, animating the public realm, managing city assets and economic forecasting

2018 

New City Innovation Office set up

2018 

Built NI's first free-to-use Internet of Things network

2019 

Strategic business case for a Belfast Smart District approved as part of the Belfast Region City Deal

 2017

Successful funding bid to the Rockefeller Foundation to establish a Belfast Commissioner for Resilience

 2017

Smart Belfast Collaborative Growth programme launched in partnership with Invest NI

 2018

Founder member of the All Ireland Smart Cities Forum

 2019

Established the Digital Catapult's Immersive Lab NI

2020 

Belfast Digital Innovation Commissioner appointed

2020 

Innovation City Belfast partnership established between Belfast City Council, Queen's University, Ulster University, Belfast Harbour, Catalyst and Invest NI

2021 

Development of business case for £20 million Innovation for Societal Impact Fund for Belfast Smart District to support regional innovation

2021 

Supported the development of a healthy ageing testbed in Belfast as part of a £2.5 million Connected Places Catapult 'Homes for Healthy Ageing' programme

 2020

Developed the Belfast Smart District Roadmap with support from Bable, the Fraunhofer IAO and city stakeholders

 2020

Successful €7.9 million funding bid to EU Horizon 2020 programme to harness innovation to transform Belfast's Maritime Mile and other historic urban areas across Europe

 2021

Development of business case for £30 million investment in advanced wireless infrastructure in the Smart District and wider area

 2021

Belfast selected as a pioneering city to develop a new global policy roadmap for the ethical use of smart city technologies as part of the G20 Global Smart Cities Alliance

 2022 onwards

The City Innovation Office is now preparing to deliver the refreshed urban innovation programme

2.

# Urban innovation in the post-Covid world



# A new focus for urban innovation

**In the initial aftermath of the Covid pandemic, Belfast’s urban innovation framework is being re-focused to directly contribute to challenges associated with this new urban context.**

In particular, Smart Belfast will align strongly with the new vision for the city centre. The Bolder Vision recognises the importance of the interconnections between climate, the economy, urban design, health and resilience in shaping a sustainable future for our city. The outcomes that it seeks to achieve are ambitious and will require council and its partners to address a series of complex policy challenges. We believe that Smart Belfast has an important role to play in contributing to these challenges by unlocking the power of digital innovation. In the following section we:

- Describe the aims and themes of the Bolder Vision
- Explain how a new ‘Smart District’ for the city can support this vision
- Set out how the District can generate opportunities for SMEs and government to test new ideas for constructing a city centre for the 21st century, and
- Describe the mechanisms to scale, replicate and apply proven successes across the wider city and region.

The Smart District is built on the experience and learning of other places and seeks to nurture digital innovation in those urban areas where it will have the best chance to initially succeed and grow. This will by no means be an exclusive focus, as there will be times when other locations or a citywide approach will be more appropriate for individual projects.



## What is the Bolder Vision for Belfast?

It’s an ambitious blueprint to explore a shared approach to creating a more attractive, accessible, safe and vibrant city. Developed jointly by Belfast City Council, the Department for Communities and the Department for Infrastructure, it reflects that the change that needs to happen to ensure economic and environmental resilience is embedded within the liveability and mobility landscape of Belfast.

Bolder Vision is underpinned by eight Themes for Change to transform Belfast city centre by 2035.

Digital innovation has a significant contribution to make in achieving the Bolder Vision. In particular the Smart District, which will be coterminous with the city centre, offers a rich, unique environment in which to innovate with communities, business, universities and planners.

### Themes for change

City centre as an inclusive place to live, work and visit

Community focused regeneration

Prioritise walking, cycling and public transport

Remove reliance on car travel

Active and inclusive public realm and green spaces

Vibrant and safe streets

Embracing our rivers

Overcoming severance with surrounding communities

# Urban innovation's contribution to the Bolder Vision

Based on the Bolder Vision's themes for change, and our work with Bable and Fraunhofer IAO, we have identified key thematic areas where digital innovation can offer the most value to the city.

We will continue to work with businesses, universities, public sector bodies and citizens to develop a series of transformative digital innovation projects in these focus areas:



## Reimagining our high street

Major retail, residential and public space investments are planned for the city centre over the coming decade. As online retail transactions continue to grow, the Smart District will provide access to the technological innovations to support retailers, businesses and city planners, to successfully navigate to a new form of high street.



## Belfast Stories

We are planning a new world-class visitor attraction to complement the global success of Titanic Belfast which recently welcomed its six millionth visitor.

The Covid crisis and the likely long-term reduction of foreign travel requires us to think deeply about how digital innovation can help us tell our story to the world. We have opportunities to work with Belfast Stories, Future Screens NI, and the city's creative sector to explore our story in new ways.



## Healthy urban living

We aim to grow the city centre's residential population with major investments in student housing and multigenerational homes. As the city balances sustainable densification with the post-Covid challenges, we have an opportunity to work with planners, investors and our life and healthcare innovators to rethink the design of our urban neighbourhoods.



### Sustainable urban mobility

Belfast has ambitious plans to transform mobility by encouraging many more people to switch to public and active transport options. This is particularly important over the coming years both as part of our commitment to challenging emissions targets and in response to the impact of Covid on working and transport patterns. There are also a whole range of new mobility solutions coming online that is likely to disrupt our current mobility model, e.g. e-scooters, e-bikes, EV single use car rental, autonomous vehicles.



Such a significant large-scale switch in behaviours will require a variety of infrastructure investments, incentives, and programmes. Smart Belfast will support the mobility transition by providing city managers and planners with an Urban Mobility Platform that integrates new and existing datasets into a coherent set of decision-making tools.

### Reskilling for the AI economy

Working with communities, our universities, colleges, schools and industry to deliver a programme to prepare our citizens for the challenges and opportunities of a data-driven economy. The city's recovery, including the leap to remote-learning, presents an opportunity to rethink how we design and deliver education and training. Artificial Intelligence is expected to impact on 70,000 jobs across the region.



### Energy transition

The local energy system in Belfast needs to undergo a profound transition. The availability of secure, sustainable energy is increasingly a prerequisite for FDI location scouts. As well as offering benefits to reducing emissions, digital technology is energy-hungry and a city with ambitions to lead on digital needs to have in place a renewable energy strategy.



To support increasing investments in renewables, grid balancing services and flexible loads need to be provided to reduce renewable electricity generators' exposure to power price volatility risk.

Hydrogen produced from renewable electricity could play a role in our urban energy systems. Smart Belfast aims to support projects that maximise the installed wind energy capacity, by converting potentially curtailed wind electricity into hydrogen and oxygen. The hydrogen can be used to power transport such buses in the Smart District; the oxygen to improve wastewater treatment efficiency; and waste heat to warm homes and buildings.

### Digitalising city operations

Currently, different public agencies are responsible for different city services and usually these services are managed entirely independently of each other. Utilising the Internet of Things, a shared urban platform, and training for exploiting new data technologies, will generate opportunities to build a more fine-grain, real-time, holistic understanding of the city. This will create an environment for more effective, resilient and innovative urban services across many agencies.

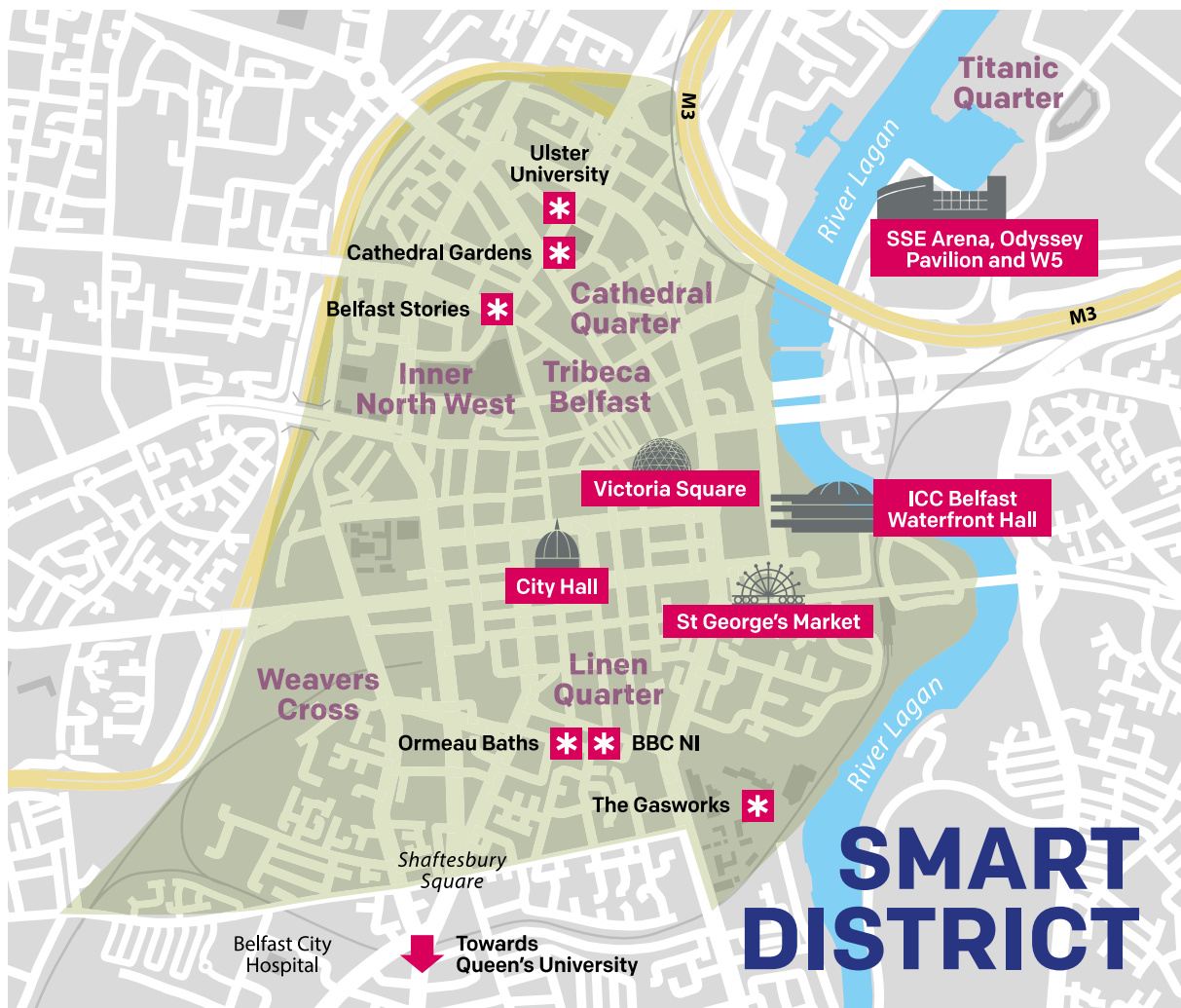


# Making it happen: The Belfast Smart District

**A key learning from the first iteration of Smart Belfast is the importance of place. If urban innovation is to flourish then we need to foster conditions that will encourage creativity, knowledge-sharing and experimentation. We need a place where there can be a free exchange of ideas, talent and resources between researchers, innovators, start-ups, investors, and public officials in a physical place. If we want to contribute truly innovative thinking to the Bolder Vision, then we need to nurture a place for urban innovation. We are calling this place-based approach the Belfast Smart District.**

Belfast's city centre is an ideal location to deliver a successful Smart District. As well as offering a range of key characteristics and opportunities, it also has the same geographical focus as the Bolder Vision.

Although the city centre is our initial focal point for urban innovation activity, our approach is to use this location to spur innovation with the overall aim of replicating, adopting and scaling successful projects and ideas across the wider city.



## Key components of the Belfast Smart District

Coterminous with the existing boundary of the city centre, the Belfast Smart District proposal draws upon research by the Brookings Institute, Connected Places Catapult, and the experience of over 100 other cities worldwide. It is also informed by extensive engagement with local stakeholders facilitated by German Smart Cities body, Bable.

The Smart District area has been shaped by a number of key success criteria:

### 1. A challenge rich environment

The district should be a place where innovators can solve problems for the city. It is the laboratory for real-world experimentation, trials and testbeds. It should help bring ideas out of the lab and into the streets. And then onwards for adoption across the entire city and region.

### 2. Size

The geography needs to be large enough to deliver substantial projects, but not so large that resources for management and delivery are spread too thinly.

### 3. Opportunity and investment

It must to be a place where substantial public and private investments are being planned. And where organisations are already delivering projects and programmes. These provide opportunities to leverage this investment for innovation.



### 4. People

Innovation is all about people. The district needs to be a place where people want to meet, live, work and play. This generates opportunities to share knowledge, exchange ideas and invest together.

### 5. Innovation actors

The district needs to be close to universities, SME incubators, and enterprises with a commitment to investing in local innovation.

### 6. Data and connectivity

The backbone and fundamental resource for digital innovation. State-of-the-art fibre and advanced wireless connectivity should be within the reach of any innovator. A place where huge quantities of data are generated, stored and shared - in ways that are transparent, secure, trusted and accessible.

### 7. A showcase to the world

The Smart District is our showcase to the world, demonstrating our ability to innovate, to build great products and services. And to provide an example of how a city can address the great urban challenges of the twenty-first century.

# The enablers

**Drawing from the work of other cities, and our own research and local engagement with stakeholders, we have identified a set of enablers that are needed to make our Smart District a success. We briefly describe each of these below, setting out its purpose and some of the key strands of work needed to put each in place. (NB: Many of these tasks also contribute to strengthening the pillars of the wider urban innovation ecosystem described in Section Three).**

## 1. Build governance and operational capacity

The District requires a quadruple helix partnership - working with industry, academia, public bodies and citizens - to set goals for the District, to help define priorities and the project portfolio, and to ensure an approach that maximises the range of opportunities in the district. This group, convened by Belfast City Council, will include business, academia, public sector and the citizen. It will interconnect with the work of Innovation City Belfast, the Bolder Vision steering group, and others to ensure the District contributes to wider economy and societal goals.

Operationally, the Smart District will be supported by Belfast City Council's City Innovation Office which will develop the District's governance body, and provide the resources and expertise necessary to deliver the enablers and to co-ordinate the District project portfolio.

### Key tasks

1. Establish the Smart District governance arrangements.
2. Develop detailed three-year operational and resourcing plans.
3. Develop a reporting and insights model to track the performance and impact of the District
4. Establish an agile operational model that can co-opt resources from key-partners, such as university research and private sector expertise.

## 2. Establish a sustainable financing model

Belfast City Council has committed a core operational resource for the District. However, longer term sustainability will be dependent on a blend of funding and financing mechanisms. Initially, the core investments will come from the Digital pillar of the Belfast Region City Deal which will make substantial funding available for challenge funds and to support necessary infrastructure investments.

We will also seek to leverage other substantial public and private sector investments that are planned for the city, and seek to influence their priorities to enhance the District. For example, other cities have worked with developers to ensure that new builds or street works can facilitate the rapid deployment of fibre and wireless connectivity.

There is also substantial public funding for digital innovation available from UKRI, DCMS, Innovate UK, Horizon Europe, etc. A functional Smart District becomes a serious attractor for such funding by adding weight to project applications from academia and industry.

Over the longer term, some smart districts have established special purpose vehicles that are able to use a mix of private and public investment to create a self-sustaining smart district programme. Belfast would seek to explore this at the conclusion of this plan.

### Key tasks

1. Design and deliver the £20 million Innovation for Societal Impact Fund.
2. Design and deliver the Equity and Grant challenge fund programme.
3. Opportunity analysis of forthcoming Government funding opportunities that align with Smart District objectives.
4. Engagement with District investors (both public and private) on co-investment opportunities.
5. Develop an 'access to finance' intelligence hub - for use by all partners including SMEs and public sector to navigate the complexity of the funding landscape.

## Funding for Innovation

The Smart District will draw upon Belfast Region City Deal Funding, and other sources, to offer a menu of funding options. These will be designed to encourage SMEs, innovators, academia and the public sector to collaborate on smart district challenges - while at the same time supporting the private sector to invest more in R&D. Complementing existing funding support, this menu of options may include:

- **Start-up challenges** to help build early stage innovators' capacity and to support their entry to market. Challenges are broad to attract a wider pool of innovators with staged funding to funnel and target investment support.
- **District-centred Prizes** bring the District's stakeholders and innovators together to develop solutions and focus more on early stage innovations that need to be tested and developed.
- **Spotlight Prizes** focusing on urban problems that have been neglected. Usually existing solutions to these problems or issues lack nuanced understanding of end users' needs.
- **Testbed Prizes** stimulate innovation in support of policy or regulatory objectives and to inform future policy in the District. These will be of particular interest to city planners and regulators with an interest in deploying innovation across the city.
- **Breakthrough Prizes** are used to create transformative solutions to difficult problems. They are often ambitious projects with tightly-defined goals seeking technological solutions, offering larger funding pots and longer time-frames.
- **Scaling Prizes** scale transformative solutions to achieve wider impact. These typically target a small pool of innovators and set quantifiable targets to reward scaling to kickstart a potential market.
- **Small Business Research Initiative** - SBRI provides a further mechanism for public sector bodies to explore innovation solutions in a pre-commercial procurement phase. Their aim is to support the development of new solutions not available on the market.

## 3. Communications and engagement

Engagement is at the heart of a successful Smart District. Within Belfast city centre there is an existing innovator community and a complex range of other stakeholders, investors, businesses, universities, service providers, residents and other partners. Much of the early work in the District involves engaging with these stakeholders on the innovation implications of the Bolder Vision, associated opportunities, challenges, and the potential for collaboration.

While Belfast City Council is leading on the Smart District, we recognise that its success is very much dependent on collaboration and a sense of common purpose. Our approach is user-centric, with a commitment to adopting Living Labs methodologies in the design and delivery of projects.

We also want to share the learning and the successes from our District with the wider city, region and the world. We want the District to be a place where innovators (from large international enterprises to two-person start-ups) want to be.

### Key tasks

1. District level engagement programme with stakeholders with a focus on an opportunity audit.
2. Deliver a marketing and communications campaign, with a focus on online marketing channels, to share the ambition for the District and its contributory relationship with the Bolder Vision.
3. Work with Invest NI and others to utilise the District in the support of the wider promotion of the city as a place to invest.
4. Build an online learning and playbook resource to support the wider replication and adoption of Smart District successes across the city and region.

## 4. Supporting citizen co-design

Alongside wider engagement with partners, the role of the citizen is particularly important in the acceptance and adoption of urban innovation. The District, and the projects associated with it, cannot be imposed on the citizens who live or work in the city centre. Projects are more effective and better targeted if they are co-designed with the end-user. This co-design approach adopts some techniques from the software industry, but also requires community capacity building and tailored engagement to ensure that projects are trusted and meet the people's needs.

This is not about training in technology or software development. It is about understanding challenge definition, the innovation process, and the opportunities and issues associated with smart city technologies. The approach, of course, can act as an 'on-ramp' to more formal skills development and education opportunities for individuals and communities.

### Key tasks

1. The design and delivery of the Citizens Office of Digital Innovation (CODI) programme - a capacity-building programme aimed initially at Smart District end-users.
2. Work with city partners to develop a shared 'Living Labs' methodology to support the design of significant Smart District projects.
3. Inform the wider skills agenda of key partners.

## 5. Enhancing digital and data connectivity

Our ambition is to make the Smart District one of the most digitally connected spaces in the world. The aim is to offer easily accessible, ubiquitous, low-cost, low latency, high capacity connectivity, on an architecture that encourages innovation and discourages vendor lock-in and legacy systems.

This is a challenging undertaking in a dense urban environment, but we believe that with necessary private and public sector investments, we can make the District the primary location for digitally connected innovators.

We also want the District to be a data-rich environment. We expect our partners, projects and technologies will generate huge quantities of novel data. Such data becomes an important catalyst for innovation if it can be made available to partners in a safe, transparent and open fashion. Working from a set of agreed data principles, we aim to work with partners to establish a data architecture and urban data platform for the city.

### Key tasks

1. Deliver a Belfast Region City Deal business case for £30 million investment to support advanced wireless networking across the District.
2. Work with public sector and other partners on a 'Site as a Service' product that ensures relevant physical assets are available for the rapid deployment of connectivity.
3. Deliver a feasibility study and Belfast Region City Deal business case for £5 million investment in an urban data platform for the District and wider region.
4. Develop and adopt a shared technology architecture with partners to support an open architecture that fosters collaboration on open innovation.
5. Develop and deliver a 'Data for Innovation' plan for Belfast City Council as lead organisation of the Smart District.
6. Work with partners to pilot, showcase and scale connectivity demonstrators in the District.
7. Seek to maximise the investments in Belfast's Local Full Fibre Network (LFFN).







## 6. Trial and Testbed environment

We want to make the Smart District the go-to location for universities and businesses to develop proofs of concepts, test proto-types, trial new products and services. And to be the place where commercial solutions are deployed and showcased to the city and the world.

To do so, we are working with the universities, businesses, asset owners, regulators, health and safety organisations and others to identify, reduce or remove the barriers that often make such work difficult in the real-world environment. We also want to establish cohorts of engaged end-users who can work with innovators to co-design and participate in the development of new urban solutions.

### Key tasks

1. Work with institutions (e.g.) Information Commissioner's Office, Ada Lovelace Institute, Financial Conduct Authority, Health and Safety Executive, university ethics committees and others to develop a supportive urban 'sandbox' environment.
2. Deliver engagement and capacity building programmes to develop citizen cohort groups.
3. Work with public sector partners on a joint barrier-busting resource that will seek to remove unnecessary administrative burdens on innovation projects.

## 7. Replication, scaling, and showcase

While the District is the initial focus for urban innovation, the longer-term aim is to take the hard-won learning and successes from projects developed in the District and scale or replicate them across the wider city and region. So, for example, if a mobility project is shown to have encouraged greater uptake of active travel in the District, then the project can be adopted by agencies across the rest of the city. We might also want to showcase this success at a national or international level, particularly if it's associated with a novel solution that can be commercialised by the SME that developed it.

For this to work, we need mechanisms to track and capture details of the project portfolio. We will work with city partners to share learning. And establish promotional channels to ensure that learning and successes are celebrated and showcased across the world.

The 'first customer' is an important role for SMEs that have developed a novel product. Our aim is to work with our public sector partners to encourage innovative procurement of products developed in the District.

### Key tasks

1. Put in place a knowledge capture mechanism for District projects that will be available to all stakeholders.
2. Develop an innovative procurement playbook for public sector partners with Connected Places Catapult and Invest NI.
3. Work with Invest NI, Innovation City Belfast and others on a joint marketing plan to showcase the District and the work of its researchers and SMEs.

# The first projects

Outlined below are the initial Smart District projects that are already under way or are at a design stage. Our aim is to develop a full project pipeline through a co-design process with partners shaped by the following criteria:

1. The project should contribute to the aims of the Bolder Vision.
2. It should be 'challenge-led', addressing issues where digital innovation can make a significant contribution.
3. The project should have the potential for replication elsewhere in the city and region.
4. The project should require a collaborative approach with private, public and academic innovators.
5. The project should be able to demonstrate a route to commercialisation or contribute to city's wider economic objectives.



Date	Projects already underway	Key objectives	Theme
2020 - 2024	<p><b>Transforming the Maritime Mile Through Innovation</b></p> <p>Belfast is a lead city in €7.9 million 'Hub-In' Horizon 2020 project that aims to transform historic urban areas through innovation.</p> <p>We have teamed up with the Maritime Belfast Trust on a four-year programme to develop an entrepreneurial hub on the city's Maritime Mile. Working with nearby communities we'll support people to develop entrepreneurial and digital innovation skills and foster new business opportunities in the Maritime Mile.</p>	<ul style="list-style-type: none"> <li>• Transform Belfast's Maritime Mile through innovation.</li> <li>• Support communities to develop entrepreneurial and digital innovation skills.</li> <li>• Share knowledge and best practice with other European cities.</li> <li>• Create new jobs and sustainable opportunities for local communities.</li> </ul>	Economy
2021 - 2022	<p><b>Homes for Healthy Ageing Testbed</b></p> <p>A testbed trialling new approaches to tackling isolation and loneliness in older people as part of the £2.5 million Connected Places Catapult 'Homes for Healthy Ageing' programme.</p> <p>Led by a local consortium, including Belfast City Council, the project will provide funding and expertise to support the first steps towards an ambitious Healthy Urban Neighbourhood located within the Smart District.</p> <p>The testbed will identify the critical features of a successful health testbed where products and services can be safely developed with local communities.</p>	<ul style="list-style-type: none"> <li>• Tackle isolation and loneliness in older people.</li> <li>• Enable local SMEs to trial new innovative products and ideas.</li> <li>• Gain learnings and insights that will inform the development of a Smart Healthy Neighbourhood within the Belfast Smart District.</li> </ul>	Health

Date	Projects already underway	Key objectives	Theme
2021 - 2022	<p><b>Navigating the post-Covid economy</b></p> <p>Working with award-winning SME, nquiringminds, the city is creating an 'economic analyser' tool that uses Artificial Intelligence, statistical techniques and scenario modelling to support the city's route towards economic recovery and resilience in a post-Covid world.</p>	<ul style="list-style-type: none"> <li>• Provide insights to help plan for economic resilience and long-term growth.</li> </ul>	Economy
2021 - 2022	<p><b>Access to Finance for Innovation</b></p> <p>We are working with Fintech Scotland, the University of Edinburgh, Invest NI, and FinTech NI on a unique platform to facilitate better access for SMEs to public and private finance.</p> <p>This €1m project, pioneered by Belfast's Xpand Group, will also enhance engagement and the measurement of impact. It will also provide managers with new tools for designing future funding programmes and interventions.</p> <p>Initially focusing on the FinTech sector, the project will inform wider engagement across the digital economy including contributing to the design of the £20 million Smart District challenge fund.</p>	<ul style="list-style-type: none"> <li>• Support and accelerate business growth.</li> <li>• Engage with SMEs and facilitate access to funding support.</li> <li>• Better understand the impact of investments.</li> </ul>	Economy
2021 - 2022	<p><b>Urban Mobility Pilot</b></p> <p>The pilot will demonstrate the innovative use of cutting-edge technologies such as AI, data analytics, cloud computing, and IoT to help plan and measure interventions designed to nudge people's mobility choices.</p> <p>The project is a collaboration between Innovation City Belfast, Amazon Web Services (AWS) and local software company Kainos. It will initially focus on the roll-out of the city's new Active Travel Hubs at Queen's University and Ulster University. The learning will inform the future design of the urban data platform and a shared 'digital twin' for urban mobility.</p>	<ul style="list-style-type: none"> <li>• Support active travel.</li> <li>• Inform planning and measure impact of active travel initiatives.</li> </ul>	Mobility
2021 - 2022	<p><b>Innovative Procurement Playbook</b></p> <p>We are working on a collaborative project with Sejong in South Korea to improve our understanding of challenges related to innovative procurement - and how SMEs can be better supported to export to other smart cities across the world.</p> <p>Led by Connected Places Catapult and funded by the Department for Business, Energy and Industrial Strategy, the project will include a challenge competition for Belfast SMEs and, ultimately, develop a playbook for cities seeking to support innovative local businesses seeking to export.</p>	<ul style="list-style-type: none"> <li>• Increase innovative product exports to South Korea.</li> <li>• Attract FDI from South Korean investors.</li> <li>• Accelerate routes to commercialisation and procurement for NI businesses.</li> </ul>	Economy

Date	Projects already underway	Key objectives	Theme
2021 - 2022	<p><b>Northern Ireland Public Data Panel</b></p> <p>Working with regional agencies to develop the role of Public Data Panels to support active citizen involvement in the design of data-driven projects that seek to address societal challenges.</p> <p>We are working with the Northern Ireland Trusted Research Environment and Administrative Data Research Centre NI to develop a pilot panel to consider public data questions, such as the use of data for research, data legislation, ethics, privacy and other issues.</p> <p>The findings will contribute to an application for commissioning and potential establishment of a panel to help with such questions on a more permanent basis.</p>	<ul style="list-style-type: none"> <li>• Inform the use of public data and consider key issues such as ethics, legislation and privacy.</li> </ul>	Data
2021 - 2023	<p><b>Mapping assets for digital investments</b></p> <p>We are working with a range of public and private sector asset owners to better understand how information and access to Belfast's physical assets can support the faster deployment of new technologies in our city.</p> <p>Access to publicly owned assets, such as buildings, rooftops and street furniture, are playing a critical role in the roll out of digital connectivity, EV charging infrastructure, District Heating systems, hydrogen networks etc.</p> <p>The aim is create a 'digital twin' of the Smart District that can be used by partners to future-proof our city.</p>	<ul style="list-style-type: none"> <li>• Maximise opportunities for using publicly owned assets to support projects in the Belfast Smart District and across Belfast.</li> <li>• Better understand how assets can be used - the benefits, challenges, practicalities and solutions.</li> </ul>	Connectivity
2021 - 2024	<p><b>Accelerating Advanced Wireless connectivity</b></p> <p>We are working with the mobile industry, asset owners, businesses and public sector partners to develop a £30 million Belfast Region City Deal business case that aims to accelerate the roll-out of advanced wireless connectivity across the Smart District, university campus areas and Titanic Quarter.</p> <p>Advanced wireless connectivity will be the backbone of the future economy and will play a critical role in advanced manufacturing, connected health, tourism, retail, digital twins and the Internet of Things. The Belfast proposition seeks to establish conditions that will attract early private sector investment in this connectivity in support of the city's economic ambitions.</p>	<ul style="list-style-type: none"> <li>• Accelerate the roll out of world-class advanced wireless connectivity in Belfast.</li> <li>• Support the future economy and development of modern city services.</li> </ul>	Connectivity

Date	Projects already underway	Key objectives	Theme
2022	<p><b>Urban Data Platform</b></p> <p>We will work with our universities, businesses and public sector partners on a feasibility study for a £5 million Belfast Region City Deal investment in a shared urban data platform and architecture for the city.</p> <p>This platform will serve as the basic infrastructure for a multitude of data-driven projects initially for the Belfast Smart District, but quickly growing to include the wider city.</p> <p>An urban data platform is crucial for optimal data processing and analytics in areas such as urban mobility, energy management, planning, climate adaptation and mitigation.</p>	<ul style="list-style-type: none"> <li>• Increase availability and accessibility of data.</li> <li>• Provide insights and inform business decisions.</li> <li>• Support data-driven projects.</li> </ul>	Data
2022	<p><b>Citizen Office for Digital Innovation (CODI)</b></p> <p>CODI is a co-creation programme with citizens and partner organisations to equip urban change-makers with the practical skills, toolkits, and techniques to navigate the challenges and opportunities of a data-rich smart city.</p> <p>As the impact of digital innovation is felt across all aspects of city life, CODI aims to work with communities, policy-makers and the individual citizen to build awareness, capacity and opportunities for collaborative codesign. CODI will work with local SMEs and innovators to develop practical materials and programmes that will equip communities to use new technologies such as AI, Big Data, and the Internet of Things for positive societal impact. CODI's capacity building programme will also act as an on-ramp for more formal education and training opportunities.</p>	<ul style="list-style-type: none"> <li>• Citizen engagement and upskilling in areas of data and innovative technologies to support co-creation of solutions to tackle societal challenges across the city.</li> </ul>	Data
2022 - 2023	<p><b>The Innovation for Societal Impact Fund</b></p> <p>We are working with Belfast Region City Deal partners to design a new £20 million fund that supports collaborative innovation between city region SMEs, researchers and public bodies. The programme will seek to address major urban challenges while at the same time supporting the growth of our region's most innovative sectors.</p> <p>The initial iteration of the fund will be open to SMEs from across the region and focus on a number of the thematic areas of the Bolder Vision.</p>	<ul style="list-style-type: none"> <li>• Tackle urban challenges through collaborative innovation.</li> <li>• Support business growth.</li> </ul>	Economy

3.

# Enhancing Belfast's urban innovation ecosystem

**The work of Smart Belfast is based on the understanding that innovation has an increasingly dominant role to play in both urban and economic policy. The ambition of Smart Belfast is to find ways to harness such innovation to support Belfast's transformation.**

We recognise that this must be a collective effort. Belfast City Council can offer a leadership and convening role, but ultimately, partners across the city need to work together to cultivate an urban innovation ecosystem.

In the previous section we set out how Belfast City Council are repurposing its programme for urban

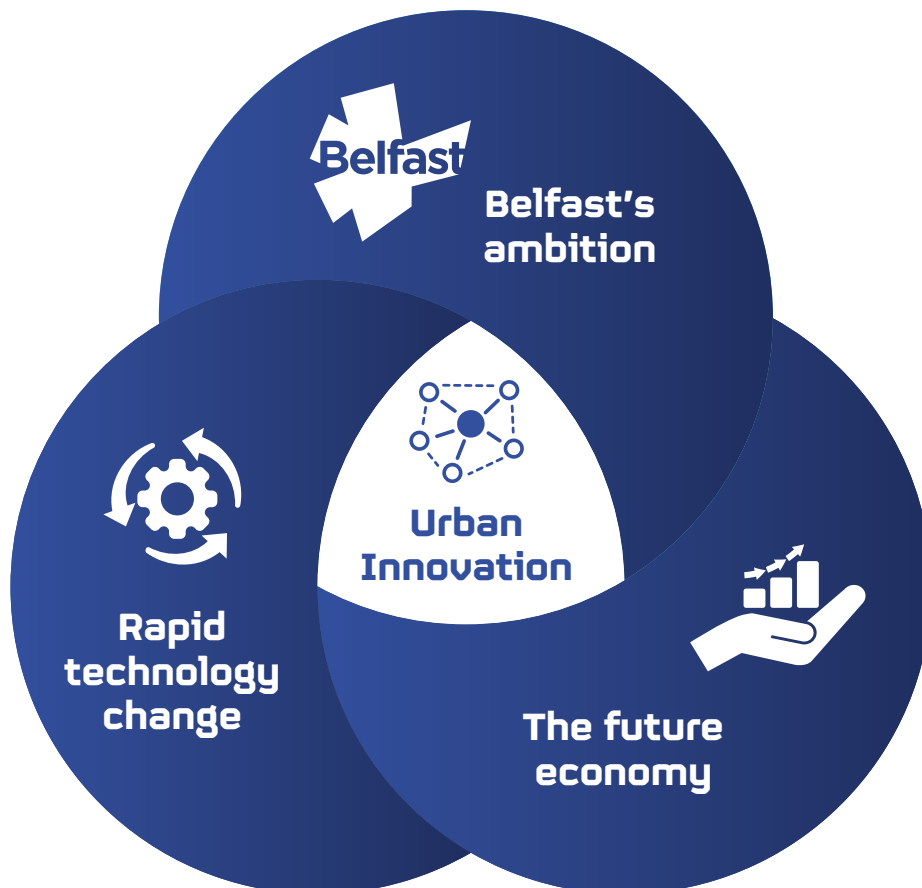
innovation, Smart Belfast, to focus on supporting the delivery of the city's new Bolder Vision and other new priorities in the aftermath of the Covid pandemic.

**In this section we:**

- Set out the strategic drivers for the Belfast urban innovation ecosystem;
- Describe some of the existing strengths that Belfast can draw on; and
- Identify the pillars of this ecosystem and what, collectively as a city, we need to do to grow them.

# The drivers of urban innovation

There are three interconnected strategic drivers that support the need for growing our urban innovation ecosystem:



## 1. Achieving Belfast's ambitions

Worldwide, cities are facing difficult urban challenges and the next decade will be crucial period for action. Belfast is no different. Our city is seeking to confront climate change; post Covid recovery; inclusive economic transformation; and specific transformational challenges around mobility, housing, energy and healthy urban living.

A host of plans and strategies are underway or being developed both at a strategic level and on the ground. Whether it is Reset for Growth, the Belfast Agenda, Renewed Ambition, the city centre's Bolder Vision, or The Belfast Resilience strategy, each plan represents a hugely challenging undertaking. Collectively, they represent a large number of 'wicked' systemic challenges that are not amenable to traditional public policy interventions. Urban innovation will play a major role in unlocking solutions.

## 2. The future economy

National, regional and urban economies are undergoing profound change - and this has implications for sector growth, productivity, and the future of work. Much of this change is being accelerated by digital innovation, but is also influenced by the need for a systemic response to climate change, globalisation and more recently, Covid and its long-term impact.

There are a number of important policies at a Northern Ireland and at a UK level that are attempting to map a path towards a more productive, sustainable economy - and which acknowledge the central role that digital innovation plays. These include the Belfast Region City Deal ambition, the recent Northern Ireland 10X Vision and the UK Government's Innovation Strategy. Each is based on the assumption that our current economy is likely to experience profound change and that it is important for cities, regions and nations to actively plan for these changes.

The Northern Ireland 10X Vision aims to harness innovation to drive growth in five key clusters to make us one of the most advanced small economies in the world. The approach acknowledges the importance of place-making, nurturing local talent and harnessing new technologies.

## 3. Rapid technological change

Advances in digital technologies are almost exponential with computing power doubling every 18 months and the cost of technologies dropping dramatically. Digital technologies are finding their way into many aspects of the economy and wider society, driving radical change. Emerging technologies such as AI, 5G, robotics, digital currencies, the Internet of Things, quantum computing, Cloud and Edge computing are accelerating these trends and will have implications across our economy, for jobs, public services, and on the design and management of our cities.

The UK Government's Innovation Strategy acknowledges the transformational impact of digital technologies on the national economy and their centrality to future prosperity and in addressing major public policies in areas such as climate change and public health. A series of accompanying national strategies for 5G, AI, digital and data all seek to harness these technologies for societal and economic impact.

The purpose of Smart Belfast is to understand the interconnections between these three strategic drivers and foster the conditions that will allow Belfast to better harness digital innovation to deliver on its wider ambitions.



**Our central argument is this: in a complex world it is no longer advisable to plan economic, infrastructure, technological, or urban programmes in isolation as independent strands of work. Cities need a holistic approach. We believe this is best done at a level of place.**



# Belfast's digital innovation strengths



Belfast identified as one of the world's top 10 Digital Economies of the Future (the only UK city other than London).



2nd fastest growing knowledge economy region in UK.



#1 international investment location for US cybersecurity development projects.



#1 global destination for financial technology investment.



#1 European destination city for new medical software development projects.



NI best place to work in digital in the UK (by salary to cost of living).



26% of all job openings here in 2019 were in digital technology - the highest in UK.



300% increase in R&D investment by local businesses over the last decade.



10X increase in venture capital funding over the last decade.



Top 20 universities in UK.

# The pillars to support urban innovation

## 1. Collaborative leadership

**To enhance Belfast's urban innovation ecosystem, we have identified eight supporting pillars. Associated with each pillar are a series of proposed actions for city partners. These actions are based on examples of existing practice right here in the city or are drawn from best practice in other cities across the world. Further work is required with partners to build agreement on these proposals.**

Cities that have been most successful in harnessing digital innovation to meet their objectives have developed effective partnerships that foster collaboration across sectors and boundaries.

A 'triple-helix' model brings industry, academia and public institutions together to find opportunities for collaborative gain. They adopt an agile, data-driven, citizen-led approach that is open to experimentation and responsive to rapid change.

### What are other places doing?

- Eindhoven Brainport's triple-helix model has enabled them to rapidly respond to a major economic crisis and successfully attract global technology companies and knowledge institutions to make Eindhoven a key contributor to the Dutch economy. Industry and academia also work with city's government to tackle urban challenges.
- Forum Virium, a non-profit company owned by Helsinki City Council, is one of the world's leading innovation organisations. It was established to boost urban innovation through public-private collaboration and has attracted millions of euro to help the city meet its sustainability and climate goals - while at the same time providing an urban environment for hundreds of local businesses to innovate.

### What is Belfast doing?

- A new partnership, Innovation City Belfast, is building on the foundations of a triple-helix model to establish Belfast as a globally significant destination for innovation and help to address the city's major economic, social and environmental challenges.

## Key partner tasks

1. Develop a collaborative body to identify and align Belfast's policy priorities with digital innovation opportunities - particularly in relation to our Bolder Vision and climate obligations.
2. Develop an agile delivery vehicle to facilitate public/private co-investment in urban innovation projects.
3. Develop mechanisms to facilitate a citizen co-design approach and provide ethical oversight for innovation projects.
4. Establish a city-level evidence and intelligence resource to support prioritisation and to measure impact.
5. Create a shared Belfast urban innovation investment proposition that supports the city's urban objectives.

## Innovation City Belfast

Six of the city's key institutions - Belfast City Council, Belfast Harbour, Catalyst, Queen's University Belfast and Ulster University, with Invest NI as an advisory partner - have come together to form a new partnership, Innovation City Belfast (ICB), to drive a shared digital innovation ambition for the city. Its key objectives include:

- Influencing regional and UK policy and programmes
- Attracting substantial new public and private sector investment in innovation
- Supporting the rapid growth of high potential knowledge economy clusters
- Supporting a skills agenda that prepares our workforce for the future economy
- Developing place-based innovation ecosystems
- Maximising the economic and social impact of the Belfast Region City Deal innovation and digital investments.

## 2. Urban challenges

A 'challenge-led' approach has been adopted by governments and institutions across the world. The approach recognises the limitations of traditional public policy interventions and public procurement in tackling some of the more intractable problems in society. Instead, the challenge-led approach seeks to use other means to co-opt industry and academia to work with government in finding innovative solutions to these 'wicked' challenges.



### What are other places doing?

- The challenge-led approach is heavily influenced by the work of Mariana Mazzucato at the Institute of Innovation and Public Purpose. The approach is the basis for the European Union's €95 billion Horizon Europe programme and the UK's Industrial strategy. It's been used successfully by the US Government via its \$58 billion Small Business Innovation Research program.
- 'Smarter London Together' outlines how London is preparing to embrace and exploit digital innovation to achieve its own ambitions. London Mayor Sadiq Khan has set five missions which underpin his commitment to strengthening London's digital innovation economy while also addressing societal challenges.

### What is Belfast doing?

- Belfast and Northern Ireland have previously adopted elements of the approach - mainly through the city's Smart Belfast programme and through the Department for the Economy's Small Business Research Initiative (SBRI) programme.
- A new £20 million Innovation for Societal Impact Fund has been proposed as part of the Digital pillar of the Belfast Region City Deal. This will seek to support the most innovative companies in our economy by incentivising them to work on some of the most important problems that our city faces.

### Key partner tasks

1. Work with city leaders to define specific challenge areas aligned to urban policy priorities - particularly in relation to the Bolder Vision and our climate agenda.
2. Work with Belfast Region City Deal partners to design and deliver the £20m mission-orientated Innovation for Societal Impact fund.
3. Build capacity amongst city partners (including the SME sector, public bodies, communities and university research partners) to support participation in challenge-led programmes.

### 3. The Citizen

In the past some cities were 'technology-driven' - investing in the latest technologies with the expectation that they would, by default, generate opportunities and solutions to urban challenges. Most of these experiments have had mixed results - often based on a failure to understand the nature of the urban challenge or the needs of the citizen. The technologies were often unsuited to local need and met opposition from citizens and communities who had not been involved in their design.

The more recent wave of smart cities - including Smart Belfast - have sought to place the needs of the citizen at the heart of the approach to digital innovation. Such an approach needs to align closely with public policy priorities; and engage directly with the citizen in an open and informed way. There are a number of ways to do this.



#### What are other places doing?

- Living Lab methodology has proven particularly successful and has been adopted by over 470 cities and institutions. Living Labs are defined as user-centred, open innovation ecosystems based on a systematic user co-creation approach, integrating research and innovation processes in urban communities and settings.
- Another methodology is Nesta's 'Collective Intelligence' initiative which harnesses the power of people, data and technology to solve urban problems.

#### What is Belfast doing?

- Belfast's proposed 'Citizen Office for Digital Innovation' takes this approach a step further - working with citizens to provide citizens with the tools, skills and technologies to collaborate on solving our city's challenges. At the same time, such an approach can act as an on-ramp to more traditional education and skills programmes.

#### Key partner tasks

1. Deliver an entry level engagement programme to raise awareness of the digital ambition, objectives and projects.
2. Design and deliver a 'first cohort' capacity-building programme to create awareness, build capacity and establish processes to support citizen co-design on a number of early digital innovation projects.
3. Develop a Belfast-focused shared resource to support current and proposed Living Labs in the city to ensure the design and delivery of a portfolio of collaborative innovation projects.

## 4. A vibrant innovation economy

The engine for digital innovation is a successful, growing urban economy. Without a critical density of talent, start-ups, entrepreneurs, innovators and engaged industry partners, Belfast will struggle to harness digital innovation to achieve the city's economic and social goals.

Fortunately, Belfast has enviable strengths to draw upon. We are home to a vibrant tech sector, a workforce with world-class educational attainment and a growing skills pipeline that is responsive to the needs of a modern economy.

We have globally recognised centres of research excellence and strong digital economy clusters in areas such as FinTech, cyber security and bioscience, with emerging clusters in life and health sciences. Belfast needs to consider the specific implications of radical technological change on our economy, on businesses, on jobs and its potential to exacerbate economic exclusion.

### What are other places doing?

- The Finnish government has developed national plans designed around long-term analysis of the impact of automation and AI on jobs and the types of skills needed in the 2020s and beyond.

### What is Belfast doing?

- Northern Ireland's 10X Vision places innovation at the heart of the government's economic priorities and the Belfast Region City Deal plans to invest over £320 million in digital and innovation projects designed to supercharge innovation across the city region. Belfast City Council is developing its new economic strategy to build upon this emphasis on innovation as a driver for success.



### Key partner tasks

1. Deliver the Belfast Smart District, a unique innovation environment to accelerate development and adoption of digital and data-driven technologies to tackle urban challenges
2. Support Innovation City Belfast (ICB) in the development of a place-based approach to digital innovation. This includes the Belfast Innovation District which aims to support business cluster growth built around research excellence.
3. Work with ICB on the design and delivery of an Inclusive Innovation programme to support communities to access and benefit from the success of a growing innovation economy.
4. Work with partners to prepare our citizens, businesses and wider society for the disruption and opportunities associated with digital innovation.
5. Develop a shared platform to better engage with SMEs and entrepreneurs, providing more targeted support.
6. Work with ICB on an insights and impact platform to support the design of interventions, measure their impact, and provide quantitative evidence for investors and funders.
7. Identify and develop models of funding to align societal challenges with cluster growth, research and innovation.

## 5. Data environment

Data is a fundamental asset for global digital transformation and a key element to drive forward Belfast's innovation economy. It fosters new industries and products, supports world-class research and creates significant competitive advantages. It also plays a major role in understanding and addressing societal challenges and designing new and better public services.

There are existing limitations which prevent Belfast from realising the full potential of data. These include insufficient data analytics capability, a lack of understanding of data as an asset, limited data sharing, poor interoperability and data quality as well as a lack of necessary skills and data literacy, and a sluggish data governance environment. There is also an increasing lack of trust from the public in the collection and use of data.

### What are other places doing?

- UK Government, through its National Data strategy, has acknowledged the important role of data to the economy. It has established institutions such as the Centre for Data Ethics and Innovation and the Alan Turing Institute. It has also conducted work on 'data trusts' that seek to create an environment in which the citizen, industry and academia are involved in transparent data sharing environments.
- A number of cities have recognised the centrality of data to the wider urban agenda - and are creating environments where data can be exploited directly for the city's goals. These include London's Smarter London Together Roadmap, Barcelona's DECODE project and Helsinki's My Data.



### What is Belfast doing?

- The Northern Ireland Government's 'Open Data NI' platform recognises that opening public sector data promotes transparency, accountability and efficiency, but also encourages commercial opportunities and drives economic growth and innovation.
- The Administrative Data Research Centre, one of four UK centres, has been developed by Queen's University, Ulster University and the NI Statistics Research Agency to facilitate easier access to administrative data for research projects undertaken by accredited researchers.
- Belfast Region City Deal Partners, working with Fraunhofer FOKUS, have developed proposals for a shared data architecture and platform that aims to encourage collaborative innovation between industry, academia and government in the design of new products and services. The proposals seek to create a transparent and secure environment in which the value of data can be unlocked for the city.

### Key partner tasks

1. Promotion and adoption of the Belfast Data Manifesto to support the city's digital innovation ecosystem.
2. Enhance data leadership particularly amongst public sector bodies.
3. Encourage use of open standards and promote interoperability between urban data systems in the city.
4. Develop public sector workforce data capability.
5. Develop a shared urban data environment for businesses, citizens, academia and the public sector that supports collaborative innovation on urban challenges and delivery of enhanced public services.
6. Work with partners and UK regulators to create a 'data sandbox' environment to support the novel use of data in the public realm.
7. Develop a Citizens Office for Digital Innovation (CODI) programme - to build awareness, capacity and skills with citizens and stakeholder groups to support co-design of urban data projects.

## 6. Financing, procurement and adoption

Investment in innovation and R&D is a defining characteristic of successful economies. It allows companies to adopt new ideas; it provides opportunities for SMEs to take risks and grow; and it supports research in our universities.

While NI business investment in R&D has grown, it's from a low base compared to other UK regions. Nesta's 'The Missing £4 billion' report suggests NI has missed out on hundreds of millions of government investment in innovation.

The lack of access to 'real world' testbed environments also denies companies the opportunity to develop, test and scale solutions, and showcase to potential buyers. This environment is fundamental for de-risking innovation, accelerating adoption and facilitating routes to commercialisation.

### What are other places doing?

- Innovate UK manages funding programmes, including the Knowledge Transfer Network, to drive innovations and grow the UK economy.
- The US Government's Small Business Innovation Research and Small Business Technology Transfer programmes have awarded \$54 billion to American SMEs since 1982 to encourage R&D with the potential for commercialisation..
- CivTech Scotland offers SMEs the opportunity to work with innovation teams to develop products that address public sector challenges.

### Belfast Region City Deal - £120m digital funding

1. A **£54m Challenge Fund** will focus on addressing the regional Grand Challenges of Artificial Intelligence, Health and Wellbeing and Sustainability and Resilience.
2. A **£39.5m Infrastructure Enabling Fund** will invest in world-class digital connectivity and data infrastructure.
3. A network of **Regional Innovation Hubs** will ensure diffusion of innovation and skills throughout the region.

### What is Belfast doing?

- Invest NI provides SME support for innovation including funding, loans and equity investments as well as help to develop R&D proposals and collaborative networks.
- Innovation City Belfast is playing a growing advocacy role in terms of making the case to both government and the private sector for Belfast as a place to invest in innovation.
- The Belfast Region City Deal is investing £320 million in digital innovation including equity, grant and challenge funding to support R&D.
- Working with Fraunhofer IAO, Belfast Region City Deal partners have developed a toolkit to support the financing of smart city projects.
- Belfast City Council is working with Connected Places Catapult and South Korean city Sejong on the challenges of procuring innovation locally and selling innovative products internationally.

### Key partner tasks

1. Develop and deliver the £54 million Belfast Region City Deal Challenge Fund programme.
2. Advocacy programme with ICB to attract greater government investment in innovation.
3. Work with ICB to develop a city level 'red carpet' service to attract private sector innovation investment.
4. Programme to enhance procurement and adoption of innovation solutions in public sector.
5. Development of a vehicle designed to facilitate public and private sector co-investment in significant smart city projects.
6. Develop an 'access to finance' platform to support SMEs, fund designers and public policy managers to reduce administrative burdens and provide clarity of the funding landscape.



## 7. Technology infrastructure

The UK Digital Strategy notes that for *'businesses to thrive and grow, government needs to create the conditions and set the framework for investment in widespread and up-to-date infrastructure.'*

Digital innovation is dependent on the existence of accessible, world-class connectivity and data infrastructure. Collaboration innovation flourishes best in a technological environment that encourages open systems, open interfaces, open data and the use of open source software.

Urban data platforms, and the open data ecosystems in which they exist, are designed to unlock urban data to support city services and understanding urban challenges. Places such as Barcelona, Copenhagen, Warsaw, and Helsinki also use these platforms to encourage SME innovation and support university research.

### What are other places doing?

- The Mayor of London's Smart London Board has developed a set of criteria to guide emerging technology in London. This charter is to ensure these are transparent and designed around the needs of Londoners, including privacy and cyber security.
- There are also major initiatives for common urban technology reference architectures, the most significant being that developed by the EU's Smart Cities Marketplace and Germany's 'Reference Architecture Model Open Urban Platform'. Both architectures encourage open standards for technology adoption by cities, the utilization of open interfaces with the goal of fostering an interoperable Smart City ICT ecosystem.



### What is Belfast doing?

- Working with Fraunhofer FOKUS, Belfast Region City Deal partners have developed a proposed roadmap for the city to encourage an open architecture.
- The Belfast Region City Deal is establishing a £40 million Infrastructure Enabling Fund (IEF) to invest in shared digital infrastructure. IEF is likely to be used initially to support the deployment of advanced wireless networking across the Belfast Smart District.
- A Belfast Urban Data Platform will enable data to be shared by industry, academia and the public sector. It will provide common standards, APIs, an open architecture and shared expertise and technologies to enhance data discovery and facilitate greater collaborative innovation, research and delivery of services within the city region.
- Plans for a digital twin in Belfast - underpinned by City Deal investment in advanced wireless connectivity, shared data infrastructure and the ability to develop ideas within the Smart District environment - will provide researchers, industry, service providers and policy makers with a data-rich, virtualised environment in which to explore and develop innovative approaches.

### Key partner tasks

1. Work with partners to develop a shared open city architecture for technology to guide adoption and procurement.
2. Deliver the £30m advanced wireless investment proposition for the Belfast Smart District, Innovation District and Smart Port.
3. Develop and deliver the £5 million urban data platform enabling industry, academia and the public sector to generate, manage and analyse data in ways that spur collaboration and open innovation.
4. Design the Smart District as a testbed where new, emerging technologies can demonstrate their potential to address societal challenges and inform future policy and interventions.
5. Support the development of digital twins to enhance the planning and management of urban systems including mobility and energy systems.



## 8. Place-making

To fully harness the potential of urban innovation for economic and social goals, Belfast needs to take a whole-place perspective that recognises its unique historical and geographical characteristics and the role they play in supporting our innovation ambitions.

While innovation strategies often focus on elements such as skills, business development and enabling digital infrastructure, there are other place-based elements that are equally important in the innovation mix. We also need to address factors such as quality of urban life, housing, mobility, cultural and retail offerings. A thriving, creative urban environment is the best place to enable urban innovation to spark.

The development of smart and innovation districts is an important focus for much of this work. But success depends on their relationship with the wider city and how the benefits and opportunities that accrue can be shared with and accessed by citizens and communities. There are successful examples of such 'whole place' approaches in cities across the world including Barcelona, Berlin, Stockholm and Toronto.

### What are other places doing?

- Influential work by the Brookings Institute on innovation districts has shown that success does not rely exclusively on traditional economic factors. City leaders need to foster places where people want to live, work and play, fuelling demand for more walkable neighbourhoods where housing, jobs and amenities intermix.
- This relationship between thriving cities and success in innovation is a core rationale of the UK Government's Connected Place Catapult which works to support cities to integrate thinking on the role of the public space and social connectivity.



### What is Belfast doing?

- Innovation City Belfast partners have committed to the development of two complementary districts.

The Smart District will focus on the city centre and will aim to encourage industry, communities, public officials and universities to collaborate on Belfast's key societal challenges, whilst at the same time supporting innovation across our SMEs.

The Innovation District centred on Queen's Island will focus on the growth of a small number of business clusters with potential for significant growth and will seek to build the relationship between industry, innovators and university research.

Belfast has chosen to develop both types of district side-by-side. We believe that they are complementary and will allow Belfast to offer a uniquely rich innovation environment.

### Key partner tasks

1. Lead on the design and implementation of the Belfast Smart District programme to support the future of our city centre and the wider adoption of digital innovation in addressing Belfast's major urban challenges.
2. Work with Innovation City Belfast on the development of the Innovation District to support the growth of key innovation clusters that are important to our future economic success.
3. Support the design and delivery of the Belfast Bolder Vision - ensuring that digital innovation is integrated into the vision's plans for the city.
4. Work with the city's planners to ensure that the longer-term implication and opportunities associated with digital innovation are integrated into future plans for Belfast.

4.

City

Innovation

Office

# City Innovation Office

## The Team

- City Innovation Manager and Head of Smart Belfast Programme
- Innovation Programme lead
- Advanced Wireless Programme Lead
- Smart District Programme Manager
- Grants and Equity Funds Manager
- Innovation for Societal Impact Fund Manager
- City Innovation Broker (x2)
- City Innovation Programme Officer (x2)
- Insights and Impact Project Manager
- Hubs of Innovation Project Manager

## Strategic Advisors

- Belfast Digital Innovation Commissioner
- Connected Places Catapult
- Innovate UK
- Invest NI





# Key partners

A number of organisations have been important in the development of this framework. They include:

- Bable
- Belfast Harbour
- Belfast Region City Deal Executive Board
- Brookings Institute
- Catalyst
- Connected Places Catapult
- Digital Catapult NI
- Eindhoven Brainport
- European Network of Living Labs
- Forum Virium
- Fraunhofer FOKUS
- Fraunhofer IAO
- Global Institute on Innovation Districts
- Innovation City Belfast
- Institute of Innovation and Public Purpose
- Invest NI
- Nesta
- NI Department for the Economy Innovation Team
- Queen's University Belfast
- TM Forum
- Ulster University

# SMART Belfast

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City Council