SMART **Belfast** / **Impact and Outcomes Report**

October 2020
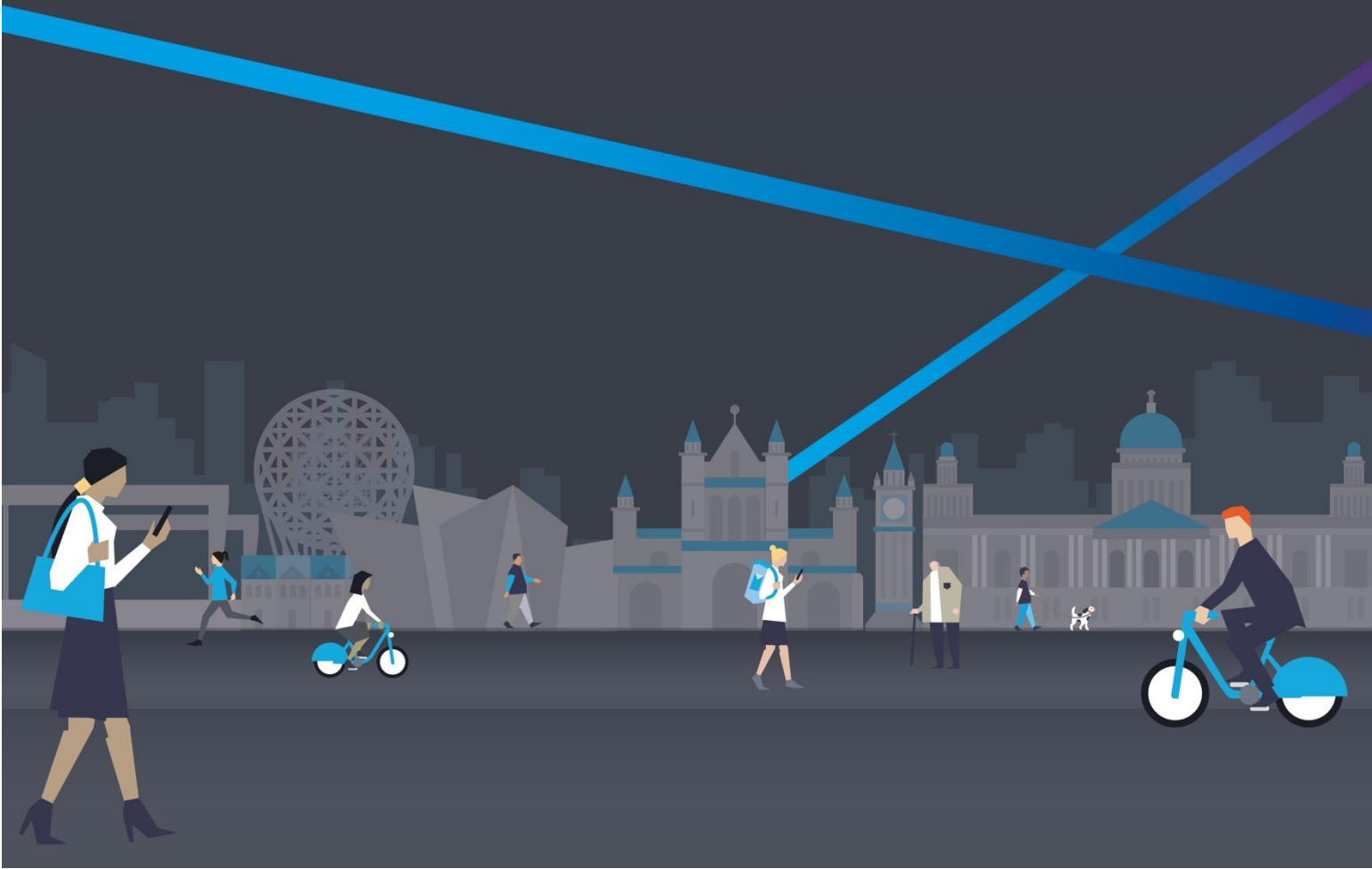
Contents

Building a Smart Belfast

Smart Belfast was set up by Belfast City Council in 2017 with the aim of harnessing digital innovation to solve major city challenges while also helping to grow a twenty-first century economy.

Our challenge-led approach brings together businesses, our universities, government and citizens to co-create innovative solutions that improve city life.

Smart Belfast recognises the immense potential that new technologies have to transform our city and its economy. Building a collaborative approach allows us to understand and harness the opportunities presented by technologies such as AI and the Internet of Things, while making sure our city builds resilience to the associated disruption.

This report sets out the background to Smart Belfast; outlines some of the projects and programmes that the City Innovation team have delivered; and maps out ambitious ideas for the coming post-Covid era.

A world-class framework for urban innovation

The core concepts for Smart Belfast were developed as part of a unique partnership with the UK Government's Future Cities Catapult (now Connected Places Catapult). Supported by generous co-investment from the Catapult and their team of international experts, the Council worked with Belfast's universities and businesses to develop a framework that seeks to support our businesses to innovate in digital technologies such as AI and Internet of Things; whilst encouraging the same businesses to collaborate with researchers and public agencies to address major urban challenges.

The approach directly led to a series of successful projects and Smart Belfast has been showcased in the UK Industrial Strategy as well as highlighted internationally as part of the Department of International Trade's missions to Asia. Elements of the framework have been subsequently adopted by other UK cities.

More recently, Smart Belfast has influenced the development of the Digital Pillar of the Belfast Region City Deal. Planned investments in wireless networks, mission-led funding and the concept of a world-class Smart District will together enable Belfast to drive its smart cities agenda to the next level.

Our approach

Our framework identifies four foundations that Belfast needs to have in place for collaborative digital innovation to flourish. Our work is about strengthening these foundations through a portfolio of standalone projects while learning and adapting as our approach matures.

1. **Shared city challenges:** Building common agreement and understanding amongst partners on what the city needs to address. This is established through a 'mission-led' approach, innovative co-design, better data gathering, and measurement of impact. Many of the best techniques can be adapted from industry embracing user-centred, agile design.

2. **Encouraging our innovators:** Belfast has a lively and growing innovator community. We aim to leverage this fantastic asset through capacity building, networking, prizes, funding, marketing and much more. Smart Belfast supports investment, skills and jobs creation in growth areas of the economy.

3. **Unlocking data:** Digital innovation is hugely dependent on access to data. The city needs to invest in the ethnical frameworks, processes, infrastructure and relationships for generating, sharing and analysing data for good.

4. **Robust delivery:** Putting in place the right governance and accountability mechanisms that allow fast-moving, goal-orientated collaboration across sectors.

The learning from this work has laid the foundations for the Digital Pillar of the Belfast Region City Deal.

Key deliverables

Leveraged **£10.2m** into the city

Worked with over **200** SMEs and stakeholders

Delivered 47 **digital projects**

€1.2m **Successfully bid for two major Horizon 2020 projects** with a combined value of €1.2 million

Hosted over **30 events** with **4,100 participants**

Built Northern Ireland's first **free-to-use Internet of Things network**

IOT

$1m Won $1 million to establish the **Belfast Office for Resilience**

Contributed to £120 million digital bid to the **Belfast Region City Deal**

Supported four collaborative growth networks involving **16 companies**

Showcased the best of Belfast at **four international tech events**

Delivery of digital innovation projects

A seven-person City Innovation Team manages the Smart Belfast programme and has delivered a diverse portfolio of 47 projects over the past three years, leveraging funding worth over £10 million from the NI and UK Government, European Union, private sector and other funding bodies.

Engagement with the innovator community

Through projects, networking, workshops and funding competitions, the team has engaged with over 200 companies and stakeholders to maximise digital innovation opportunities in Belfast.

The team regularly hosts events for the digital innovation community, attracting over 4,000 participants.

Representing Belfast on a global stage

The team represents Belfast on a number of national and international networks including the All Ireland Smart Cities Forum, G20 Global Smart Cities Alliance, Harvard TECH Smart Cities Accelerator, TM Forum and Mastercard's City Possible. They also influence UK Government strategy through membership of the BSI and the UKGOV Expert Advisory Group on Smart Cities and Connected Places.

Belfast's digital innovation strengths and opportunities have been showcased at a number of world-renowned conferences including the Smart City Expo World Congress, MIPIM and SXSW, as well as at local events including Digital DNA, AICON and BelTech.

PhD Student Programme

Smart Belfast's relationship with our two local universities is an important part of our model of working. It allows PhD candidates and post-doctoral researchers to explore ideas in a real-world urban setting while giving the Council access to new ideas and insights.

We currently have a PhD candidate from Ulster University's School of Built Environment working on governance models and evaluation frameworks for the Smart District. She is also exploring the relationship between smart cities and wider spatial planning policy.

We are also working with an Ulster University PhD candidate from the School of Computing who is continuing research that was initiated during our 2017 Urban Healthy Living project that modelled traffic related air pollution. The work will explore the relationship between respiratory conditions and exposure to traffic related air pollution, and build models that will support an individual's ability to better manage their exposure to air quality risk. The work has significant commercial potential.

Our new Queen's University PhD candidate from the School of Law will be exploring the legal and ethical implications of the smart cities paradigm – a subject that is of growing importance worldwide. The work will help to shape our city's ethical approach to utilising AI and data science for public good.

Projects

The following is just a sample of the projects delivered since 2017. Smart Belfast projects are selected based on their potential to contribute to our four foundations; to address city challenges; and to support companies on their R&D path towards commercialisation.

Urban mobility

New technologies such as AI, IoT and connected vehicles provide an opportunity to transform city travel with new sustainable modes of transport, improved road safety, better traffic management and mobility flows, and reduced air pollution.

Last Mile Delivery

We worked with Smart Dublin on the first ever cross-border Small Business Research Initiative project to support logistics companies to find new sustainable solutions to city centre van deliveries. Proofs of concepts included micro-distribution centres, managed virtual loading bays, and electric delivery carts. The team also worked with Musgrave Park Hospital to adapt one of the solutions to better manage car parking spaces at EV charging stations in the hospital car park, and the flow of delivery vehicles using their loading bays.

Post-Covid E-scooter pilot

We are working with Belfast Harbour and DCU Alpha (Dublin City University Innovation Campus) to run an e-scooter pilot on Queen's Island with the aim of reducing dependency on the private car for last mile commuting. The project will utilise high precision geo-location and data analytics to monitor and strictly control usage. Learning from the pilot will be useful in considering wider adoption across the city. Similar trials are running elsewhere in the UK but the Belfast trial is unique in its use of geo-location and AI.

iPedal

The team established one of Northern Ireland's first collaborative innovation agreements which brought together the Council with local cycling company See.Sense, BT, the Department for Infrastructure, Queen's University and bike operator, NSL.

The project used innovative new wireless technology, developed by See.Sense, to generate insights into cycling behaviour to inform cycling infrastructure decisions such as where to site new bike lanes and stations.

The experimental devices, deployed on 100 Belfast Bikes, used advanced sensor and geolocation technology to gather anonymous data through a network provided by BT. Data scientists at Bristol University and Queen's University applied AI and GIS techniques to build a picture of the daily habits of the city's growing cycling community. The pilot transformed the humble cyclist into a citizen scientist!

See.Sense has since won multiple awards and gone on to work with other cities, including Manchester and Dublin, on similar data projects. The team used the knowledge acquired through the project to successfully bid to Digital Catapult UK for a £200,000 IoT network for Northern Ireland.

Sustainability and resilience

Resilience, smart cities and sustainable development are inextricably linked in most urban agendas. Digital technologies have a role to play in building physical and economic resilience and supporting adaptations and mitigations.

Upsurge – Nature-based solutions

We are now in Phase Two of a €9 million Horizon 2020 programme to develop nature-based solutions for tackling greenhouse gases across several European cities. Belfast will seek to test cutting-edge techniques in urban farming first developed in Slovenia. We will work with local communities on soil enhancement, food production and testing. An initial site has been identified near the River Lagan, with a number of satellite locations also playing a role.

Belfast Resilience Commissioner

When the Smart Belfast Framework was established, Belfast was approached by the Rockefeller Foundation to consider bidding to join their 100 Resilient Cities network. The team worked with a range of local stakeholders from across industry, academia and civic society to shape a bid that successfully led to the development of the Belfast Resilience Office and the appointment of the city's first resilience commissioner. The team subsequently developed Belfast's bid to Rockefeller's CityXhange brokerage conference in 2018 which attracted digital investment from a number of leading-edge SMEs. Smart Belfast continues to work closely with the Resilience Team on projects such as Upsurge.

Covid Connect NI

In response to offers of help from the innovation community at the beginning of the Covid-19 crisis, we worked with local SME, Xpand to create an online brokerage platform that matches the technical expertise of digital industry with the Covid-related needs of public and community sectors.

The CovidConnectNI.com platform was developed in less than a month and went live in April 2020, with a focus on the provision pro bono support. Since launching, around 2,000 individuals and organisations have engaged with the platform. Nearly 100 organisations either offered or requested support to help tackle the Covid crisis. Around 40 potential projects were initiated as a result of connections that were made.

Citizen focus

Technology has already transformed our lives but effective smart cities collaborate with citizens and communities to address city challenges, adopting a people-centred design approach to solutions with the aim of improving quality of life.

Transformation of Historic Urban Areas

Belfast is one of eight European cities to receive a share of €7.9 million Horizon 2020 funding aimed at harnessing the regeneration potential of historic urban areas to support wider community entrepreneurship and innovation. Belfast will receive €680,000 and staffing costs for a four-year project focused on the community impact of the Maritime Mile in the Titanic Quarter. We are working with Titanic Foundation and other partners to support local communities to develop innovative projects in the digital and creative sectors.

Hello Maritime Mile!

This low-cost project encouraged visitors to explore and engage with historic landmarks and attractions along the Maritime Mile including the Big Fish and HMS Caroline. We worked with a start-up SME to develop a text-message AI 'chatbot' that responded to questions and gathered attitudinal information from visitors. The project won a NI Tourism Award for digital innovation, and the SME, Hello Lamp Post, has since developed the prototype into a successful commercial product.

Amazing Spaces, Smart Places

The team bid to the Northern Ireland SBRI programme (with the Department of Justice as co-sponsor) for this £320,000 project. The aim was to enable local SMEs to develop ideas that could support the Council's Parks and Community Safety teams in the innovative management of safe, open spaces. The project also drew the attention of Smart Dublin who sought to gain insight for their own city's open space strategy.

Following close engagement with elected Members and local parks groups, five companies received funding for initial proof of concepts that included the use of IoT sensors; WiFi data; machine vision cameras; and a community currency rewards app.

For phase two, two companies won further funding through to March 2021, to develop their ideas to the prototype stage. CivicDollars is developing their community currency app to reward people to actively use their local parks, while SparroWatch's intelligent machine vision camera is being trialled in various Belfast parks. Usage of our open space has increased dramatically during the Covid crisis – and new tech has an important role to play.

Future of the urban economy

Digital innovation is a key driver of the economy, and sectors such as manufacturing, tourism and financial services are adopting new technology such as augmented and virtual reality, Internet of Things and Artificial Intelligence to become more competitive, improve efficiencies and enhance services.

Smart Belfast Collaborative Growth

Working with Invest NI, we developed a unique variant on their existing collaborative growth programme that provides funding to groups of SMEs seeking to jointly explore new market opportunities. The team developed a programme that had the potential to draw down £1 million for successful companies.

We worked with industry and city partners to develop five city challenges under the themes of urban transport, the visitor experience, circular economy, active living and the management of the public estate. 16 companies received funding to work together to scope potential solutions in these areas.

Measuring the impact of digital on SMEs

We worked with local company, Xpand, to bid to EIT Digital for a €1 million R&D project to develop a software platform that enables economic development managers to engage and gather data from their SME clients while at the same time providing client companies with better insights into potential new markets.

The project onboarded over 100 SMEs who engaged with the platform on the economic potential of a Belfast Smart District. Xpand have since developed the solution into a commercially available product that has attracted funding and interest from across Europe.

NI Things Connected

Working with Ulster University and Invest NI, we bid to Digital Catapult UK to establish a £200,000 Internet of Things (IoT) network across Northern Ireland. The network aims to encourage NI companies to develop or exploit IoT technologies in what is a multi-million pound market that will have an impact on agriculture, tourism, manufacturing and other sectors.

The team established an £80,000 competition across NI councils to encourage companies to learn about the potential of IoT and leveraged a further £100,000 of cloud-based IoT training for businesses from an international cloud computing vendor.

The Digital Catapult recognised the project as their most successful regional Things Connected programme.

Virtual reality

Immersive technologies, such as Virtual Reality and Augmented Reality, have been maturing rapidly over the past few years. While the technology has huge potential in gaming, it also has transformative applications more broadly in tourism, advanced manufacturing, health and education.

Belfast remains well placed in this sector with a large number of digital and creative companies developing immersive content. To support this growth, the Smart Belfast team worked with Invest NI, the Department for the Economy and Digital Catapult UK to establish the city's first Immersive Lab for start-ups and industry to which Digital Catapult provided over £50,000 worth of immersive technologies.

To encourage companies to engage in the sector, Smart Belfast worked with our Economic Development team, Tourism NI and Future Screens to establish a £25,000 competition for local SMEs. One of the participating companies, Enter Yes, developed an immersive VR app based on the experience of the Blitz at Belfast City Hall.

Understanding our Rates

Working with Land and Property Services and the NI Department of Finance, we bid to the Northern Ireland Small Business Research Initiative (SBRI) programme to deliver a £150,000 project that sought to apply digital innovation to enhancing the city's business rates register.

Four companies were awarded proof of concept funding to develop proposals that included utilising behavioural economics, Internet of Things networks, rule-based analytics and machine learning models. Two companies, Analytics Engines and NQuiring Minds, were awarded further funding to develop prototypes that used a range of data sources and AI to enhance the process for identifying rates income from businesses. During pilot trial period, £500,000 of business rates income was identified.

Both companies subsequently developed these prototypes into commercially available products, with the Council procuring a solution from NQuiring Minds. This SBRI project has since been cited nationally as an exemplar of the SBRI approach, with the NQuiring Minds solution used as case study in the UK Industrial strategy. Through the SBRI project, Analytics Engines advanced their product development which led to winning a substantial contract with broadcaster RTE.

AI and Data

Through Big Data and Artificial Intelligence, cities can obtain valuable insights from large amounts of data collected through various sources, and develop efficiencies, improve sustainability, create economic development and enhance quality of life of people living and working in the city.

Open Data Mobility

Following a successful funding bid to the NI Open Data Fund, we are working with local SME, Xpand and Belfast Harbour to explore how we can use open data and other data sets to map mobility across the Titanic Quarter and demonstrate how data connectors can link various data sources to provide insights through a single dashboard.

Belfast City Council as a data organisation

The Council collects, manages and uses huge volumes of data every day. Our Data Specialist is working with colleagues across departments to explore how we can use, manage and apply data more effectively to inform business decisions and improve services. We are also exploring the capabilities the organisation must have in place to play a civic leadership role in a data-enabled city.

Project Lintol

We are working with local collaboration network, Lintol.io on a project funded by the Open Data Institute to test an open data validating tool to improve the quality, speed and cost effectiveness of publishing open data. The project enables the Council to quality check its own data and ensure open data is provided to innovators in a usable format.

Litter Analytics

Using historical waste data, IoT sensors in bins and GPS on waste vehicles, we are working with a local SME to develop a predictive algorithm for the emptying of bins in the public realm and the optimisation of bin lorry routes.

Tourism and public WiFi data

We worked with local SME Velocity Worldwide and local tourism partners including Tourism NI and Visit Belfast to explore how we could use Belfast's public WiFi data to better understand visitor behaviour and map visitor movements in Belfast. The project enabled the team to explore data privacy processes and data sharing, and learnings and insights have been applied to other Smart Belfast projects.

Urban Healthy Living Space SBRI

Urban air quality is a global concern and remains an issue in Belfast, particularly where our continued dependency on the private car can adversely affect air quality at the neighbourhood level. Monitoring local air quality is technically challenging, but new technologies such as IoT, AI, and satellite imagery have provided new methods.

With UK Space Agency funding, and the active involvement of the Council's air quality team, we collaborated with local SME 3DEO, Redshift Associates and Geospatial Insights, along with public health officials and clinicians to explore the relationship between traffic and air quality.

The project used satellite data, IoT sensors and machine vision cameras to model air pollution in granular detail and in near real time. Innovators then created a mobile app for tracking pollutant exposure for different routes, times of day and modes of transport. The results were presented at a Member workshop in 2018 hosted by the Lord Mayor.

Belfast Health and Social Care Trust created a further Small Business Research Initiative competition to better explore the impact of air pollutant exposure in relation to respiratory and circulatory conditions, diabetes, stroke, and cognitive function amongst Belfast citizens. The results have contributed to the ongoing debate on the future of travel in the city.

Who we've worked with

The success of Smart Belfast is built on collaborative innovation between a diverse range of stakeholders. The following organisations represent some of the main partners who have been directly involved in our project portfolio.

Belfast Metropolitan College

Bristol University

Catalyst

Connected Places Catapult

Department of Digital, Culture, Media and Sport

Digital Catapult UK and NI

Dublin City Council

Dublin City University's Alpha Innovation Unit

Energy Systems Catapult

European Space Agency

Future Screens NI

Health and Social Care Trust

Institute of Electronics, Communications and Information Technology

InterTrade Ireland

Invest NI

Innovate UK

Land and Property Services

Matrix NI

Maynooth University

Musgrave Park Hospital

Nanotechnology and Integrated Bioengineering Centre

Nesta

NICVA

Nordic Irish Partnership

Northern Ireland Government departments

Open Data Institute

Public Health Agency

Queen's University of Belfast

Satellite Applications Catapult

Sustrans NI

Titanic Foundation

Tourism NI

Translink

UK Space Agency

Ulster University

Visit Belfast

Companies

We've engaged and worked with a range of companies over the last three years, from start-ups through to large international corporates.

3DEO	Kraydel
7th Venture	Lagan Construction
ActionSense Ltd	Laganside DSD
Aepona	Lecky
Allsop Consulting Ltd	Lindsay advisory
Allstate	Lintol.io
Anaeko	Litter Analytics
Analytics Engines	Live It Up Ventures Ltd.
Arity	Loyalbe Ltd
Arris	Luna
Artemis Technologies	MacBlair
Arup	Made to Engage
Aurora Prime Real Estate	Mags Byrne Marketing
Axial3D	Mash Direct
Azimap	Mastodon C
B4B Technology	McAdam Design
B9 Energy	McAleer Rushe
Bann Technology	McFarland Associates Ltd
Bazaarvoice	Microsoft
BehaviourWise Limited	MJM Group
Belfast Coin	MnTech Ltd
Big Motive	Montupet
Blue Clarity Design Services Ltd	Mott McDonald (Belfast)
Bluesona	Moy Park
Bombardier	Mtech academy
Bondelivery NI Limited	NEC
Bouygues	NQuiring Minds
Britemobility	Odyssey Trust
BT	Ogilvie
Cambium LLP	OLI
Causeway Coding	On-Music TV
CDS Consulting	Options Technology
Ciga	Oracle

CILT

Cisco

Civia

CivicDollars

Civica

Close Focus Limited

CMASS

Connected Care Solutions

Cornerstone

Cresent Capital

CUBIS Systems

CV6 Therapeutics

Dale Farm

Danskebank

DELL EMC

Deloitte

Denroy

Derry Creatives Collective

DeskHoppa

Digital DNA

Digital Leaders

Digital Solutions:2020

DM Innovations Ltd

DMC Digital

Donard Electronics

Double Jump Studios

Dunbia

Earthsense

E-Breathe Ltd.

Elucidate

Emeritus Communications Ltd

Energy Elephant

Enter Yes

ESRI NI

ESS

Evermore Energy

P2V Systems

ParkUnload

Passel Innovation

Perform Green

Philips

Pinnacle NI

PitchBooking

PricewaterhouseCoopers

Procul-iot

Pulse Smart Hub

Puppet

Randox

Real-iot

Realtime

Real Wireless

Red Branch

Redshift Associates

Resolute Public Affairs

Rex Systems Ltd

RF Proximity

Scannervision Vi-technologies Ltd

Seagate

See.Sense

Sensata Technologies

Sensor Healthcare

Sensoteq

Siemens

Silverink

Sirocco

Sixteen South

Smart-Ventilation Ltd

Solaris Environmental

SparroWatch

Straylight Consulting

Street Monkey

StreetDock

Excelledia N.I. Limited

Expleo

EY

Farrans

Farset Labs

Fernhay with UPS

First Derivatives

Flax and Teal

Friends of the Earth

Fujitsu

GCD Technologies

Greenans Products Ltd

Grid Smarter Cities

The Smart Bunker

Greenlight NI

GSG Projects Ltd

Hello Lamp Post

High Summits Consulting

Huawei

Intel

Intelligent Ventilation

iSensing

Island Sky

JMG Systems Ltd

John Hogg Operational

Kainos

Kinsetsu

KPMG

Synetecs

SysAda Limited

Tascomi Ltd

Taylor Patterson Surveyors

Telefonica

Thales

The Convex Lens

Thrive

Titanic Belfast

Topolytics

Total Mobile

Travel & TourismCo

TriMedika Ltd

Tughans

Unosquare

Velocheese

Velocity WW

Virgin Media

VuCity

WeDispatch

Whale

Wheel works

Whitepot Studios

WrightBus

Xpand Group Ltd.

Yellow Design

Yelo

Future plans

Drawing from the Smart Belfast experience, the Council and its city partners are now developing ambitious plans focused on the potential of digital innovation to build an economy capable of competing in the twenty-first century.

The Covid-19 crisis has amplified these challenges and accelerated the time scales against which they need to be addressed.

The new Belfast Digital Innovation Partnership (BDIP), which includes the Council, the universities, Belfast Harbour, Invest NI and Catalyst, has acknowledged that without a coherent city level approach that directly addresses the impact of digital on our economy, Belfast could be impacted in terms of lost jobs, stagnant business growth and low productivity. Conversely, the city is also at risk of missing the substantial opportunities that digital innovation represents for our economy and future city services.

As the new BDIP partnership develops its approaches, there are a number of Smart Belfast project proposals that will make significant contributions to achieving this ambition. We have set out some of these below.

Belfast Smart District

Centred on an area of the city centre, where there are already plans for major R&D and private sector investments, the Smart District will be a place-based multiplier for wider investment and transformation in the city. During the city's recovery, it will be a statement of global intent - a place where we can quickly come to grips with immediate challenges. In other cities, their smart districts have proven important in quickly developing ideas to address the immediate impact of Covid-19.

The District will foster an environment in which innovators, technologists and investors can work together to encourage the exchange of knowledge, ideas, and investments. The District also brings the complexity of whole-city urban challenges down to a more viable neighbourhood level. At this scale, city stakeholders can plan, pilot and prove approaches that overcome challenges to systemic change – to then be scaled back to citywide implementation.

Advanced wireless network

Advanced wireless connectivity underpins many aspects of the modern economy, whether it's in logistics, manufacturing, connected health care, or public service delivery. It will be the backbone for our economy in the coming decade. Belfast's universities have world-class research capabilities in this field, and we have many companies seeking to build products and services that rely on modern wireless networks.

We are exploring how we can best support the rollout of advanced digital connectivity to maximise benefits for the city, our citizens and the economy. We want Belfast to be the go-to location for investment and research in wireless innovation.

Smart healthy neighbourhood

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

Overall, the project would seek to maximise the opportunity that technology and data analytics is providing to rethink how neighbourhoods are planned and designed to help people remain active and productive as they age. It would also enable solution providers to experiment at scale and target solutions directly to the self-identified needs of the community.

Reskilling for the AI economy

Working with communities, our universities, colleges, schools and industry to deliver programmes to prepare our citizens for the challenges and opportunities of an AI economy. The recovery, including the leap to remote learning, presents an opportunity to rethink how we design and deliver vehicles for education and training. AI is expected to impact on 70,000 jobs across the region. The Smart District, home to Belfast Met - the regional college for digital skills and W5's new DreamSpace - offers an opportunity to work hand in glove with communities and partners to design, test and deliver courses that ensure recovery is felt across communities.

Citizen-Driven Centre for Data Analytics

Working directly with citizens to use data and innovative technologies to address societal challenges across the city. It will support organisations to collaborate, share, analyse and act upon data from multiple sources. The centre will drive the use of data to address local challenges via improving services, enabling better decisions making, and driving innovation. The Belfast centre will place a specific emphasis on citizen co-creation. Therefore, upskilling and enabling the active participation of citizens in defining the challenges to be addressed is an essential element.

Sustainable energy transition

The local energy system in Belfast needs to undergo a profound transition. The availability of secure, renewable energy is increasingly a prerequisite for digital companies. The digital sector is energy hungry, and a city with pretensions 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 facilitate the integration of high levels of the variable renewable energy system. This project aims to maximise the installed wind energy capacity, by converting potentially curtailed night-time wind electricity into hydrogen and oxygen. The hydrogen will be used to power the gliders and buses in the Smart District, the oxygen to improve wastewater treatment efficiency and the resultant waste heat to warm homes in the district.

Multi-modal travel

Belfast partners have ambitious plans to transform mobility in the city by encouraging people to switch to public and active transport options. This is particularly important over the coming months and years in response to Covid with challenges around social distancing, public transport and the likely uptick in private car use. To affect such a significant large-scale switch in behaviours will require a variety of infrastructure investments, incentives, and programmes.

This lighthouse project aims to support the mobility transition by providing the city's managers and planners with an Urban Mobility Platform that integrates new and existing datasets into a coherent set of decision-making tools. In the first instance, the project will focus on supporting transport interventions that ease the mobility challenges within the Smart District. As the platform grows in sophistication, its focus would expand to include other parts of the city. The Smart District encapsulates many of the wider mobility challenges in the city, whilst offering a living laboratory to test the effectiveness of different interventions.

Urban Data Platform

The platform will serve as the basic infrastructure for a multitude of data-driven projects. The platform - implemented as one central system or as a system of systems - is crucial for optimal data processing and analytics thereby giving stakeholders the opportunity to generate new knowledge based on existing data.

During the current crisis, the availability of relevant, timely data at a city, regional or national level have proven critical for decision-making and joint planning.

The availability and accessibility of data is an enabler of different applications, services and digital business development opportunities.

SMART
Belfast

If you want to hear more about
Belfast's digital innovation ambition,
we would like to talk to you.

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🐦 **#smartbelfast**

Belfast
City Council