

Belfast

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Belfast Healthy Cities
Technology & Health Seminar
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Belfast
City Council

What makes a Smart City

- Bristol - Smart City of the Future.....turn the city into a high-tech testbed for innovation. Currently testing driverless technology.
- London - The Mayor has created a ['Smart London' board](#) to put technology at the heart of the capital's future. Wright bus.. London Data Store...
- Barcelona – one of the top 4 Smart cities in the worldMayor says economic future will increasingly depend on **digitizing its public services**. Connecting lighting with traffic with water..... burgeoning tech SME sector has attracted large investors.



A Smart City is.....

- One where there is effective integration of **physical**, **digital** and **human** systems in the built environment to deliver sustainable and prosperous and inclusive future for tis citizens.

BSI PAS 180



What makes a Smart City?

- Having a city vision - Blueprint
- Created by the City
- Citizens and customers at the heart of design
- What is the vision for Belfast?





Belfast Agenda

through the Belfast Conversation



Business and economy

- Attract investment into Belfast
- Foster business growth in Belfast
- Strengthen business relationships
- Make it easy to do business with

Living here

- Improve the city living experience
- Improve neighbourhoods
- Improve community relations
- Reduce health inequalities
- Active and empowered citizens

Working and learning

- Address the educational inequalities
- Attract and retain skilled people
- Improve skills and employability

City development

- Attract tourists to Belfast
- Promote and position the city
- Key strategic projects and policies



Some of our Challenges.....

- **Life expectancy** males 2010-2012 was **75.4** years, and for females is **80.7** years.
- **Smoking during pregnancy** - in 2013, **22.5%** of expectant mothers in **Belfast**
- **Alcohol** - in 2010/11-2012/13, the rate for alcohol-related admissions was 1,084.5 per 100,000 population (**Northern Ireland** - 682.7 per 100,000 population).
- **Suicide** – in 2010-2012, **suicide** rate in **Belfast** was **24.9 per 100k population** (NI 6.2 suicides per 100k population).
- **Respiratory Diseases** - The death rate from respiratory problems in is among the worst in Europe
- **Heart Conditions** – in 2014 British Heart Foundation reported Belfast worst affected council area in NI with **107 premature deaths** out of 100k
- Infrastructure – Waste, Water, Sewerage, Energy



#75400370



Traffic Congestion/ Air Quality



Paris emergency measures to combat smog hailed as a success

Traffic jams in the French capital reduced by up to 40% as result of attempt to reduce level of fine PM10 particles from diesel vehicles



📷 Police officers stop a motorbike rider in front of the Eiffel Tower in Paris, as the city resorted to drastic measures to curb soaring pollution levels. Photograph: Francois Guillot/AFP/Getty Images



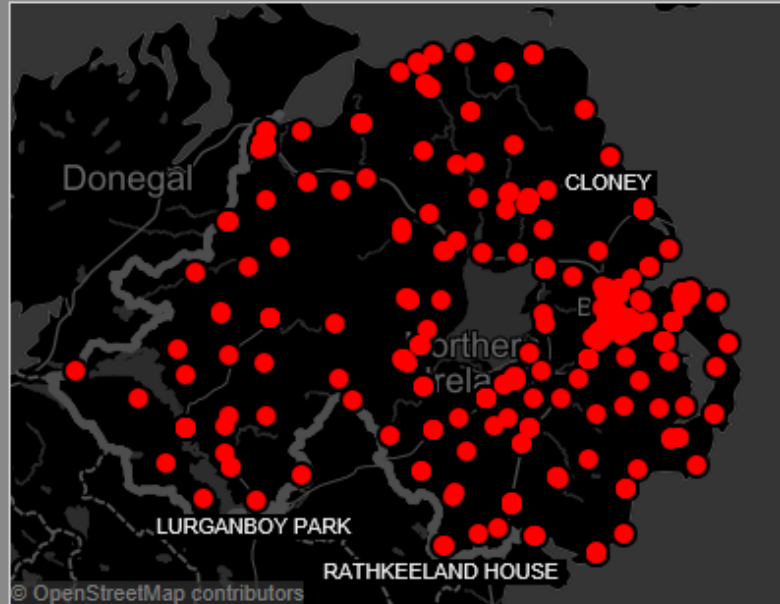
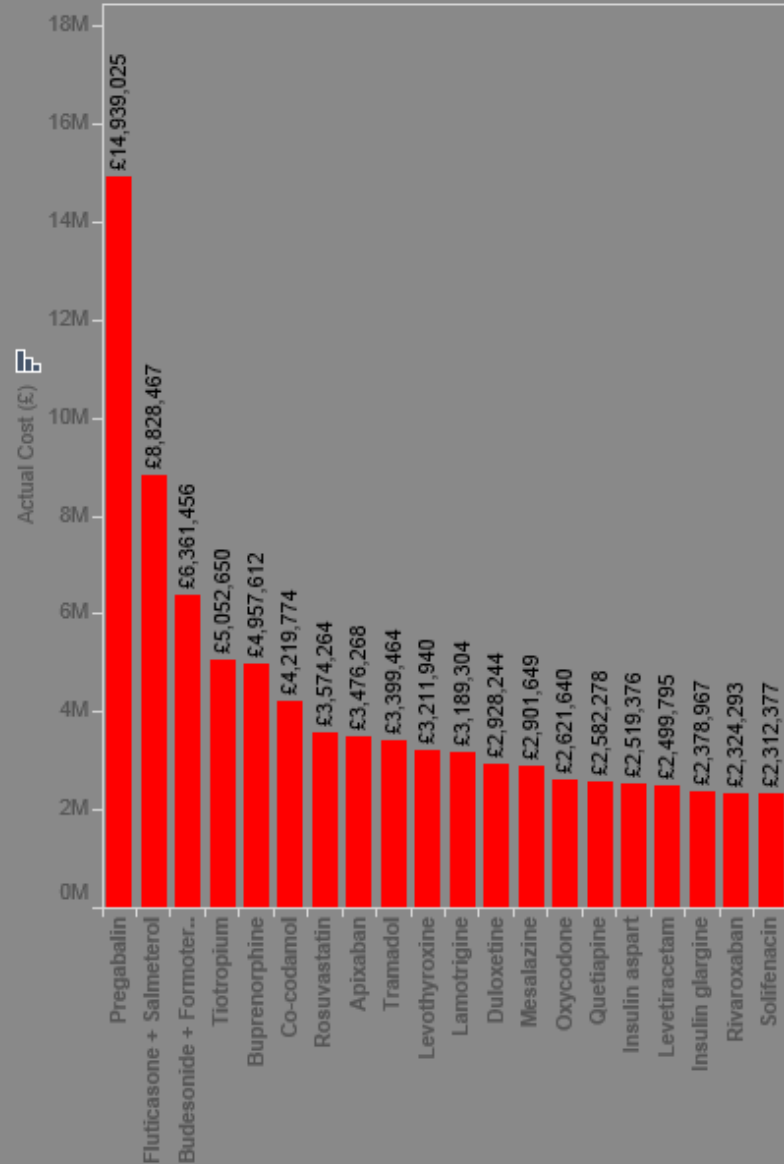
Intelligent Transport

<http://www.intel.com/content/www/us/en/automotive/experiencing-future-intelligent-transportation-video.html>



NI GP Prescribing Data November-December 2015

Actual Cost [Top 20]



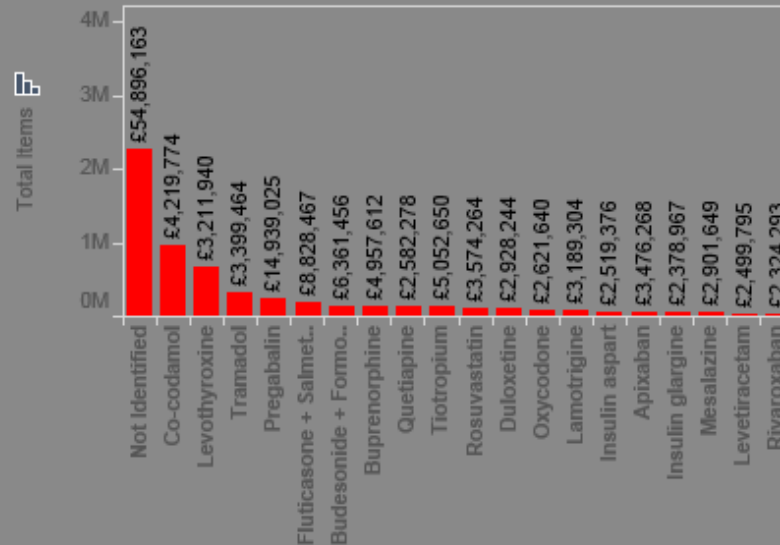
Month

- (All)
- November 2015
- December 2015

Practice

- (All)
- Null
- 1 GLENNAVY ROAD
- 2 MALLUSK ROAD
- 2 SYDNEY LANE
- 2 THAMES STREET
- 2H MAIN STREET
- 4 MOUNTSANDEL R...
- 6 DRUMINTEE ROAD
- 6 NORTH PARADE
- 6 PRIESTLAND ROAD
- 8a LURGAN ROAD
- 10/12 LISBURN ROAD
- 14 CHURCH VIEW
- 14 KILKEEL ROAD
- 15 DARTAN REE
- 15/17 CLIFTON STR...
- 15A DONEGALL RO...
- 16 A THE SQUARE
- 16 MCCANDLESS S...
- 17 BALLYGOMARTI...
- 20 UPPER MAIN ST
- 22 BARRACK STREET
- 23 OMAGH ROAD
- 24 LISBARNETT RO...
- 28 CHURCH WALK
- 29 GARDEN STREET
- 32 MAIN STREET
- 33 STEWARTSTOW...

Total Items [Top 20]





Electronic Health Care Records

- Local company Kainos
- Develop system collaboratively with clinicians,
- easy access to patient information,
- **enabling clinicians to capture data efficiently wherever care is taking place; in a hospital, patient's home or at an emergency scene.**





Wearable Sensors....

Smart Watches /Fitbits etc

Activity tracking

Sleep tracking

Coaching and feedback

Skin sensors such as heart rate, breathing,
blood oxygen, and temperature

Augmenting reality by presenting additional
information and guidance.



Dundalk – Assisted living project

- IoT project aimed at preventing falls among elderly people.
- 1 in every 3 people over 65 falls each year. A quarter of those who do fall, end up requiring hospitalisation.
- Three-year long €3m 'Kiduku' study was a collaboration between Fujitsu, Centre for Affective Solutions for Ambient Living Awareness (CASALA) and others
- Participants wore small sensors that monitor biological, physical and social aspects of their environment.
- Sensors were also being placed in the homes to track their movement, sleeping patterns and other metrics.
- Low cost remote monitoring can then detect when older people faced increased risk of experiencing falls.
- Medical experts then intervene and prescribe appropriate treatments.



Smart City ... Connected City...



Belfast City Council

Our emerging role in supporting a smart Belfast?

- Setting and championing the city's strategic priorities
- As a convenor of smart city partners
- As a facilitator between public and private partners
- Levering investment and funding into the city
- Commissioner, data user and service deliverer

Research and Development

Northern Ireland has 13 university ICT-related research centres

Queen's University

One of the top UK universities for research intensity with a knowledge and data engineering research cluster specialising in:

- Machine learning, sensor networks, data-driven intelligence systems, deep-web big data extraction, data mining, etc.
- Spin out of Centre for Secure IT - world class centre with over 100 companies
- Centre for Statistical Science including Bayesian networks, traffic flow modelling, etc.

Ulster University

Strong research and development work with industry including:

Knowledge engineering, big data analysis, mathematical modelling, machine learning

Smart Environments Research Group - deployment of IoT sensors

Digital Innovation Infrastructure for Next Generation Internet

Information and Communications Engineering Research Group

Funding & networks

- MATRIX - Science and Industry panel
- Invest NI support for innovation, research and development, FDI
- City building links with Innovate UK's Future Cities Catapult
- Horizon 2020 - NI Contact Point
- InterTrade Ireland
- Application to Rockefeller Foundation's 100 Resilient Cities
- Exploring potential of SBRI for public sector innovative procurement
- Eurocities, Knowledge Society Forum
- Nesta UK Innovation funding organisation

Smart Belfast

Our framework will seek to harness a smart city approach to contribute to the wider city's 'Belfast Agenda' priorities such as:

- Attracting investment
- Supporting innovation and growth sectors
- Enhancing skills and employability
- Renewing city infrastructure - water, energy, transport
- Reducing health inequalities

Life Science and Connected health

Connected Health Innovation Centre focus on e-Health, digital health, tele-health, tele-monitoring, sensing development, integrated care, assisted living and diagnostics.
Precision Medicine Catapult

Cybersecurity

World class centre in cyber security with over 100 international companies and local SMEs
CSIT aims to be global hub for cyber security and internet of things
Developing novel technologies for key areas: device authentication, secure ubiquitous networking, security analytics and informatics

Strong commercial digital sector

Digital Media

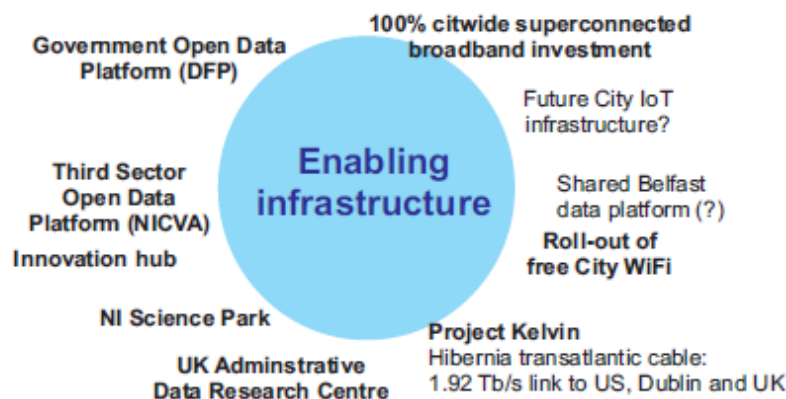
Belfast ranked No2 in Top 5 Clusters
Creative Industries one in the UK with over 1,300 businesses employing over 32,000 people.
City wants to develop a CDI district to build on this
Established TV and film production including Games of Thrones and The Fall
Creative sector - 17,000 employees, 1,000 companies

Data analytics

Growing local expertise in analytics with a growing cluster of local SMEs in the sector
Analysis, Predictive modelling, Business Intelligence, Visualisation of data, Big Data, Statistics, Operational Research, Economic Analysis, Financial Modelling

Building skills and capacity

- Msc Computing conversion courses
- Msc in Professional software development
- Msc in Cyber security
- Assured skills program for companies
- Skills Academy model for conversion
- All computing degrees have industry placements
- Higher level apprenticeships in Computing Infrastructure and Software Engineering
- Data & Analytics Academy
- Data Analytics for policy makers and decision-makers
- Non-traditional course: Appcamp, Women who Code, CoderDojo, ICT apprenticeships, Software testers academy



FDI and local SMEs – A Critical Mass in our City Centre





Our role in a Smart City



- Articulate the vision
- Develop Framework
 - Enable collaboration across Academia, business, public sector
 - Build capacity data, decision making
 - Identify funding/investment sources aligned to the vision
 - Deliver 4 key projects
- Build trust with citizens and businesses – use of data
- Encourage our SMEs to provide solutions for our city problems – eg SBRI
- Be a testbed for research and technology
- Put the citizen at the heart of service design to deliver better outcomes for the future



“There are more grounds for optimism here than in most other capital cities in the world today. Make sure you don’t forget that. Set yourself some stretch goals that really extend expectations about what you can achieve so that everyone reaches for those goals together.”

Declan Kelly
Former US Economic Envoy

Brand New Day – it is on YouTube
<https://www.youtube.com/watch?v=OEgdwoW5L2Q>

