

Shared Digital

Smart Cities Advisory Board

Smart Audit: Baseline of initiatives

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Revision History

The following versions of this document have been created and released:

Date	Version	Reason for change	Author
11/07/2017	0.1	Initial draft for initial review	Lynn Spendilow

1 Introduction

1.1 Background

This audit of smart cities initiatives is in response to a recommendation made by the Smart Cities Scrutiny undertaken by Islington Environment and Regeneration Scrutiny Committee in March 2017.

The audit has been specifically developed to ascertain what services could already be described as 'smart' and to look at what services could be delivered. The initiatives have been categorised into three groups:

- Fully developed initiatives or ongoing initiatives
- In-flight or being developed
- Potential projects and/or initiatives

1.2 Executive Response

It is intended that this will be aligned with prioritisation of the Council's digital activities and 'Smart City' developments. Our initial review has highlighted a number of Smart City initiatives across different parts of the Council, for example:

- Delivering services more efficiently and improving the environment through monitoring and reducing emissions
- Collecting and sharing better information, and enabling better access to information
- Using data to inform more proactive resource deployment, maintain a cleaner environment and better focus enforcement activity

1.3 Smart Cities Definition

The following definition was defined by Councillor Claudia Webbe, Executive Member of Environment and Transport.

Places where we use modern technology to improve urban environments, interacting with citizens to increase quality of life. They rely upon both internet access and data to improve outcomes for citizens and communities, and redesign the way that services are delivered.

Smart Cities are where the management of urban environments is assisted by information technology, enabling cities to become more liveable, engaging and resilient. A Smart City should try to enable all of its citizens to effortless engage, whilst providing an attractive environment.

1.4 Terms & Definitions

The following terms are used throughout this document and these have the following definitions:

Term/Abbreviation	Definition
CE	Chief Executives Directorate
LBI	London Borough of Islington
IOT	Internet of Things
SRO	Senior Risk Officer

2 Business Context

An investigation took place to review completed smart cities initiatives that are up and running already within the council and see what we are in the process of implementing as well as covering idea's and suggestions that are not yet in the pipe-line.

2.1 Fully developed initiatives or on-going smart services being provided

Initiative/Project	Description (Include what the initiative aims to achieve – what are the benefits/ outcomes – how will it make things better for citizens)
Bulky Waste Charging	<p>The council has implemented a chargeable collection services allowing up to 10 items to be collected, with a discount offered to specific residents.</p> <p>The benefits of this service are; a cost affective service for residents that helps keep the streets of Islington clean, whilst generating income for the council.</p>
New Website – mobile by default	<p>Improvements to e-forms with some of the high volume transactions now end-to-end. The website has been designed with users in mind and is mobile by default.</p> <p>Examples of new e-forms includes the Introduction of all registrar's services online.</p> <p>The benefits of this move are administration cost savings for the council and a more efficient service available to service users 24 hours a day</p>
Delivering services more efficiently and improving the environment through monitoring and reducing emissions	<p>Five Smart benches have been installed across the borough under a trial. These benches have built-in sensors to monitor the air quality, weather forecasts, solar panels to allow phones charging and free WIFI</p> <p>Islington has introduced the first smart benches (http://timeout.com/) in London.</p> <p>The trial was implemented this year, however since then Planning / Advertising applications for the five benches has been submitted and awaiting outcome.</p>
Clean Islington App	<p>Islington Clean App is a tool available for free on Androids, Windows and iPhones, which enables issues of dog fouling, fly-tipping, graffiti and overflowing bins to be reported.</p> <p>It allows residents to report highway related issues, a photo and location is sent to the Reactive maintenance team who respond with a before and after image or referral to the Planned maintenance team for further repair.</p>

	The information provided by the public helps us to keep the streets of Islington clean and identify and monitor hotspots.
Mobile Workforce	<p>Housing Repairs – to improve mobile working for repairs operatives, reducing administration costs and improving customer service</p> <p>Adult Social Care – a month long pilot involving 22 employees from across Adult Social Care in teams such as Enablement, Islington Learning and Disabilities Partnership and the Direct Payments team. We’re trialling tablets, phones and dongles to build a business case around which devices are best for staff</p>
Highways Operations	<p>1. Highways Operations staff using smartphones to record work and send pictures whilst on site, using messaging as well as use of hangouts (similar to Skype)</p> <p>Fitters use tablets to record and complete all works in Parks and Playgrounds this connects into PSS Live (Greenspace System).</p> <p>2. Future plans include: Fully Mobile solution for Highways management system (inspection and works management) Mobile works unit – incorporating storage of materials as well as a mobile Wi-Fi hub/ messaging displays; information hub (works programme etc.)</p>
Zero Emissions Network	<p>Islington’s Zero Emissions Networks (ZENs) are working to make the borough a cleaner, healthier place to work and do business by improving local air quality, supporting active travel and reducing business energy and transport costs.</p> <p>The ‘ZEN City Fringe’ (https://zeroemissionsnetwork.com) is a joint initiative between the London boroughs of Islington (Bunhill ward), Hackney and Tower Hamlets. In the north of the borough Islington’s ‘Archway ZEN’ (www.archwaylondon.com/ZEN) is working with businesses across Junction ward.</p> <p>The ZEN approach is to provide access to free advice and services like free trials of electric vehicles and cycling training, designed to improve local business efficiency whilst also reducing the air pollution that causes 9,500 premature deaths in London each year. Over 300 Islington businesses and organisations have signed up so far.</p>
Islington Sustainable Energy Partnership (www.isep.org.uk)	<p>The Islington Sustainable Energy Partnership is a network for organisations in the borough who want to reduce energy costs, cut carbon emissions and manage their environmental impacts.</p> <p>ISEP promotes sharing and learning between energy and sustainability professionals, provides advice, events and resources, helps members get involved in local community projects and operates a free certification scheme for members that recognises environmental achievement.</p>

	ISEP's diverse membership of over 60 organisations spans the private, public and third sector in Islington including some of the largest businesses and employers in the borough. The Partnership is led by a Steering Committee of 12 member representatives and secretariat services are provided in-kind by Islington Council.
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2.2 In-flight or being developed

Initiative/Project	Description (Include what the initiative aims to achieve – what are the benefits/ outcomes – how will it make things better for citizens)
Free WIFI (Arquiva)	working to provide free WIFI elsewhere in the borough (including Libraries and Council offices) and in some of our parks, partnering with Arquiva Using data to inform more proactive resource deployment, maintain a cleaner environment and better focus enforcement activity
Online Visitors Parking Vouchers	Integration of RingoGo (voucher system supplier) with the councils website to allow visitors parking vouchers to be purchased online.
Internet of Everything – Telecare	<p>There is an increasing social demand upon Adult Social Care (ASC) services to improve the quality of care provided to elderly and vulnerable residents, while reducing operating costs. As a consequence, technology can play a significant role in prevention and early help in order to delay entry into care. Once in care technology will also play an ever increasing role in informing and assisting staff to provide flexible and enhanced safeguarding essential services to an ever increasing population, whilst also improving the quality of life of residents and service users. This technology is known as assistive technology (AT), assisting both service users and service providers in the provision of care.</p> <p>Collectively we are keen to explore the feasibility of utilising AT to keep residents, at the edge of social care, safe in their homes and ultimately reduce the support they need from council staff. The desire is to move away from the traditional “red button or cord” reactive model to a proactive internet of things (IOT) monitoring technology model to ensure people in need of care are connected with council services, carers, medical professionals and family and friends, while yet still maintaining their independence.</p> <p>Telecare workers within our three councils already use technology to inform; however, there is a greater need to reduce costs, while providing more effective services through preventative rather than reactive services. Adopting an intelligent software-based IOT monitoring approach will ensure effective intelligence gathering and monitoring which in turn will allow the council to reach more people and ensure more targeted social care manpower deployment. This should ultimately enhance the safeguarding service provided to residents.</p>
Caremyway (Integrated Records)	<p>We're working with GPs and hospitals to create an 'integrated record' where individuals can review their personal data, as well as sharing it with health and social care.</p> <p>The project will result in a downloadable app that will allow residents to control their data and share/interact with GP's.</p>

<p>Time-boxed Experiments</p>	<p>Experiment One – Adult Social Care: improve basic performance reporting across Camden, Haringey & Islington, to reduce cost/effort in reporting and increase accuracy. Activities underway:</p> <ul style="list-style-type: none"> • Data extract capability • Automation of performance reporting (Qlik View/Power BI) • Investigate ability to pass/pool data with NHS – providing greater insight through a merged repository <p>Experiment Two – Open data/Data lake/GIS: Create an open standards accessible data lake with added open standard GIS capabilities. This will lower data cost's, lower TOC for GIS and enable Experiment 3 (below). Activities underway:</p> <ul style="list-style-type: none"> • Spin up a private Socrata and/or Geoserver data lake • Combine out of the box open GIS capability • Socrata mapping / data visualisation interface • Qlik or Power BI presentation tier <p>Experiment Three – Planning Service Data: Move toward similar capabilities as Camden to increase accessibility of planning data, lower cost/less manual reporting, remove paper based planning notifications, reduce maintenance overhead for infrastructure. Activities required:</p> <ul style="list-style-type: none"> • Deploy data model and extract approach from Camden into Islington and Haringey • Publish into Socrata Experiment 2 and/or open data where possible • Performance reporting as per Camden • Planning alerts feed for Islington and Haringey • Test Power BI dashboard capabilities <p>Experiment 4 – Customer Data: Add scale, robustness, access and re-usability to Islington customer data aggregation capability, to enable lower operational risk for data management mechanism, lower TCO for data aggregation capability, re-use for other Islington services and other councils. Activities required:</p> <ul style="list-style-type: none"> • Rapid analysis of data aggregation rules • Prototype ruleset in low cost commodity tooling • Reporting/analytics layer in Power BI or QlikView • Web “People finder” interface (possibly via Socrata)
<p>Highways Operations</p>	<p>E&R are in the process of purchasing equipment to equip all municipal vehicles with the ability to record street conditions and report back.</p>

	<p>This will allow a fuller picture of the road conditions within Islington and improve the conditions with a proactive approach.</p>
<p>Accessible Community Transport</p>	<p>Implement a mobile solution with an electronic backend to replace a paper based system, that tracks vehicles (time waiting/arrivals etc.) and links to CRM to allow drivers to access and update user profiles.</p> <p>This would improve the community transport service by allowing access to council systems, improve the driver's interaction with council information and reduce the risk of a data breach due to paper held with confidential information and drivers using their personal devices as contacts for parents and taking photos.</p> <p>New vehicles have been purchased along with tablet for the drivers, the pilot has now been completed, however no solution has been formally agreed and the project is currently on-hold.</p>
<p>Digital Champions</p>	<p>Islington's Digital Inclusion Strategy (Feb 2016) sets out a strategy and plan to provide digital access and support to residents who would otherwise experience difficulties getting online.</p> <p>Government Digital Services suggest that the barriers to getting online are:</p> <ul style="list-style-type: none"> • Access, Skills, Motivation, Trust <p>Research suggests that the groups most likely to be impacted by these barriers are people who are:</p> <ul style="list-style-type: none"> • Elderly, on low income, who have learning disabilities and / or mental health needs; and have English as a second language <p>Exacerbating existing vulnerabilities. These barriers and the cohorts they are most likely to impact have informed planning of Islington's digital inclusion activity which includes:</p> <ol style="list-style-type: none"> 1. Partnership arrangements with Age UK Islington, North London Cares, Hillside Clubhouse, Single Homeless Project, Three (the mobile device company), Expedia 2. Updating Islington's service directory with information about where residents can get either access to digital and / or support with basic digital skills 3. Delivery of a Digital Champions programme, trained during 2016, and are a combination of staff who are champions by virtue of their role (e.g. CI front-line staff, library staff, Area Housing Officers) and staff who volunteer their time in the community 4. Working in partnership with internal services and external organisations including Adult Community Services and North London Cares to deliver a series of gadget workshops, providing an opportunity for champions to be deployed to support elderly residents with basic digital skills 5. Delivery of weekly drop in sessions at 222 Upper St. where residents can get basic digital skill support from CI staff

	<p>6. A series of 'tablet sessions' run in Libraries</p> <p>7. A mobile device trial –</p> <ul style="list-style-type: none"> ○ Working in partnership with: Hillside Clubhouse, iWork, Age UK Islington and Single Homeless Project (delivery partners), we have allocated 45 mobile devices (tablets) with 12months worth of 4G connectivity to residents engaged with one of these services. ○ In addition, they have received training sessions from ACL and offered support through mentors from the delivery partner and / or support that is freely available in the community including the weekly sessions at 222 Upper St. and support offered by Three ○ The purpose of the trial is to test whether there is a correlation between access to the internet and support and increased digital participation / take up of online services <p>8. Plans to enhance the library digital offer</p> <p>In relation to 8 – this has led to broadening the scope of the digital inclusion programme to include children and young people and small businesses. The resulting activity includes:</p> <ol style="list-style-type: none"> 1. Libraries securing an additional Coding Club at Central Library for children aged 8 – 12 – in addition to two existing Coding Clubs at North and West Libraries that were oversubscribed 2. Three providing ad hoc Coding Clubs and Movie Making sessions during school half – terms 3. Plans in place to trial a Coding Club at Lewis Carroll Library in the Autumn /Winter of 2017 <p>A tentative proposal to trial a pop-up lab (providing access to 3D technology) at the new Cat & Mouse Library (previously John Barnes) is also under consideration.</p>
Smart Bins	<p>To pilot 'Smart Bins' and improve the service by efficiently collecting food waste</p> <p>To pilot Big Belly Compaction Bins with sensors that detect when the bins are full, compacts the rubbish and organise dynamic scheduling meaning utilising the quickest site to site routes.</p>
Electric Car Charging	<ol style="list-style-type: none"> 1. Under the council's emission-based permit charging, owners of electric vehicles receive a free resident parking permit. 2. As many Islington residents do not have access to off-street parking where they can charge an electric vehicle, we have installed some on-street electric vehicle charging points. This means residents who own an electric vehicle can now charge their vehicles in a growing number of locations around the borough. Residents who wish to use the on-street points can purchase an electric vehicle charging point (EVCP) permit (1 rapid charger, 8 fast chargers (7KW) and 1 trickle charge (3KW)). For this year we plan to implement 100 more charging points.

Car Club(s) provision in the borough	<p>3. Electric vehicle owners will also be consulted on the possibility of setting up a pay-as-you-go system to pay for the electricity used.</p> <ol style="list-style-type: none"> 1. Car Clubs noted in Sustainable Transport Strategy in relation to improving air quality and making more efficient use of the available space on the road network, and will relieve some of the crowding on the public transport network. 2. 169 car club parking bays in the borough + DriveNow operate a floating car club in the borough - at the current density most residents are not more than a 5 minute walk from a car club car.
Parking Bay Sensors	<p>All parking bays to be fitted with sensors and a 'Parking App' to be developed that can detect which spaces are free and report these back as 'free' parking spaces.</p> <p>This initiative seeks to provide its users with data on real-time parking availability, thus reducing driving time and promoting environmental benefit.</p> <p>Collaterally, users will be able to receive other data including information from local businesses. A trial is underway around Finsbury Square, with 30 sensors. AppyParking provide the sensors and collect and present data analytics. Further benefit could be had through a wider partnership with AppyParking, who use our TMO and street scene Mapping to inform and update their use database.</p>
Energy Services	<ol style="list-style-type: none"> 1. Bunhill district heating network which provides cheaper and greener heat for our residents. We are currently in the process of expanding the network to the King square estate and integrating an innovative heat recovery solution. 2. By recovering heat from the London underground ventilation shaft via a 1MW heat pump and converting the warm air to useful heat for district heating or chilled water for cooling the underground railway. 3. A feasibility study is currently underway which is looking at the possibility of recovering heat from the Regence canal. 4. Over the last 2 years the energy team has also delivered a couple of small scale innovative projects: <ul style="list-style-type: none"> • Installation of 500kW of photovoltaic panels at the waste recycling centre • Installation of cold isle containment in the main council server room • Low energy LED lighting across a number of corporate buildings
Street Lighting	<ol style="list-style-type: none"> 1. Lamp columns are also being used to support Wi-Fi and mobile networks to provide a more consistent internet connectivity to our residents and visitors across the Borough. 2. Working within the GULCS (Go Ultra Low Cities Scheme) framework to progress charging of electric vehicles from lamp columns on residential streets. The charging points will be installed in existing lamp columns without the need for dedicated car charging bays therefore providing flexibility for residents. 3. We have embarked on a programme to replace all street lights on the public highway and green/open space areas with LED lights and CMS control. 4. The Central Management Systems (CMS) that will enable lighting to be monitored remotely reducing the level of night time inspections and maintenance visits, thereby reducing vehicle emissions, pollution and congestion. Giving Islington the ability to adapt quickly to assist with changing situations such as traffic accidents and public disturbances. <p>In accordance with the Smart Cities Agenda, once established as a network across the Borough the system will also support non-</p>

	lighting based applications such as environmental monitoring (noise/dust/vibration), parking management, refuse collection monitoring, winter gritting, traffic management/crowd control. It can also be used for customer focused and commercial purposes such as Mobile Proximity Marketing.
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2.3 Smart Cities Initiative and Ideas

Initiative/Project	Description (Include what the initiative aims to achieve – what are the benefits/ outcomes – how will it make things better for citizens)
Street Cleansing – track and schedule the street cleansing service	To be able to confirm street cleansing status for every route, as per the cleansing schedule. This would provide real-time information to proactively manage operational issues, complaints etc.
Winter Maintenance	<ol style="list-style-type: none"> 1. To be able to identify when grit bins would need refilling during the winter maintenance period. 2. To provide information on web site of grit bins location and fill levels
Areas the LBI are keen to explore	<p>Providing better information to service users (residents, visitors and local businesses) in order to enable them to make better choices for example:</p> <ul style="list-style-type: none"> • Air quality information to enable (e.g.) citizens to plan their route to avoid the worst air quality • Making better use of information to support the development of our service staff and service development planning, including involving the right stakeholders from across the community • Enabling citizens to make choices around ‘sharing’ with one another, e.g. the casserole club (https://www.casseroleclub.com) or other similar initiatives, e.g. around transport

3 Appendices