

ABERDEEN CITY COUNCIL

COMMITTEE EP&I

DATE 11th September 2012

DIRECTOR Gordon McIntosh

TITLE OF REPORT Aberdeen the Smarter City: A Strategy for 2020

REPORT NUMBER: EPI/12/164

1. PURPOSE OF REPORT

The purpose of this report is to provide information on the Smart Cities concept; to outline the benefits of becoming a Smarter City and to ask approval to develop a Smarter City Strategy for Aberdeen which has sustainable development at its core, in line with the administrations vision Aberdeen – the Smarter City.

2. RECOMMENDATION(S)

It is recommended that the Committee

1. Agree to develop a citywide Smarter Aberdeen strategy and implementation plan which has sustainable development at its core, in line with the administrations' vision Aberdeen - the Smarter City;
2. Instruct Officers to report back to EP&I Committee in August 2013 with the strategy and implementation plan for approval.

3. FINANCIAL IMPLICATIONS

The strategy will be developed within existing budgets. However the actions within the implementation plan may require funding which will be referred to committee on a project by project basis. There are several funding opportunities linked to the Smart Cities agenda which we would aim to make full use of. Some of these funding streams include:

- Cities Investment Fund which supports the Scottish Cities Alliance (£5million);
- FP7 Smart Cities European funding stream (EUR 209 million);
- Energy Technologies Institute – A Smart Energy System demonstration project.

4. OTHER IMPLICATIONS

There are no known legal, equipment or health and safety implications arising from this report however it is important to note the key policies and drivers connecting Aberdeen to the Smart Cities concept as detailed in Appendix A.

In particular, the administrations programme for Aberdeen City Council 2012-2017, Aberdeen – the Smarter City focuses on the key components which make up a Smart City with the concept of 21st century sustainable living at the heart of the vision.

Also, the Climate Change (Scotland) Act 2009 has set targets to reduce carbon emissions by 42% by 2020 and 80% by 2050. Guidance on Part 4 of this act, the Public Bodies Climate Change Duties, came into effect in 2011. This recognises the important role that public bodies play in planning and delivering climate change actions and mainstreaming it alongside corporate priorities.

5. BACKGROUND/MAIN ISSUES

5.1 What is a Smart City?

The word Smart can be used in many ways to mean different things (see figure 1). In general the concept of a Smart City is a City that embraces a new way of ‘thinking and doing’ that puts citizens, visitors and businesses first. Cities must be dedicated to meeting their demands and needs, and continuously improving the services they deliver.

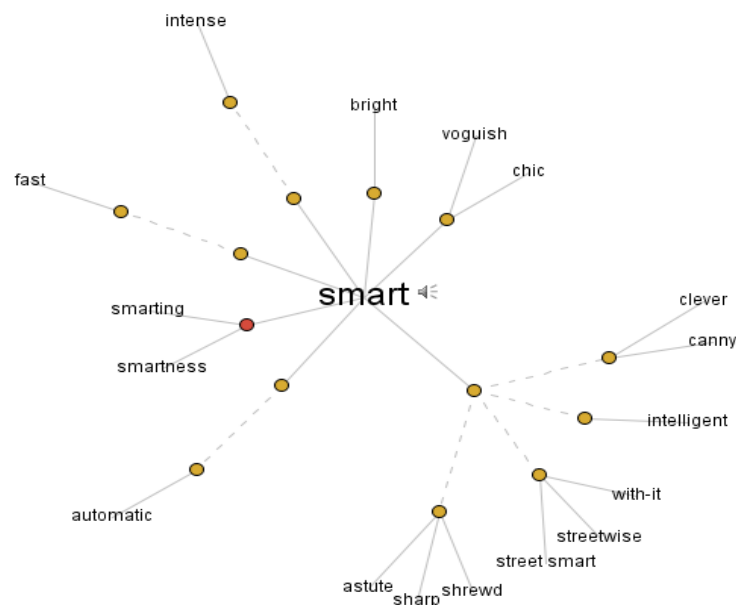


Figure 1: Smart Visual Thesaurus (source: <http://www.visualthesaurus.com/>)

The concept of a Smart City originally focussed solely on the use of information technology to transform life and work. However in recent years the concept has evolved from focusing purely on the role of ICT infrastructure, to focus more on the role of human capital/education, social and relational capital and environmental interest as important drivers of urban growth. In that respect a Smart City is now often described as a holistic ecosystem of people and business and can be identified by the presence of six main components (see figure 2). Effective ICT is one facilitator of a “smart

community” but to be truly smart, a city needs strength in all of the components.

A smart City is a City where investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure stimulate sustainable economic development and a high quality of life, with a wise management of natural resources, through participatory governance.

If we consider a city at its most basic level it is comprised of a government, people, industry, infrastructure, education, culture and social services. A Smart City pursues sustainable development with all of these components in mind with the additional foresight of the future needs of the city. This approach allows cities to provide for its citizens through services and infrastructure that address both the current needs of the population as well as for projected growth.

It is important to note that a City’s performance depends not only on the hard infrastructure ('physical capital'), but also, and increasingly so, on the availability and quality of knowledge communication and social infrastructure ('intellectual and social capital'). The intellectual and social form of capital is critical for a City’s competitiveness.

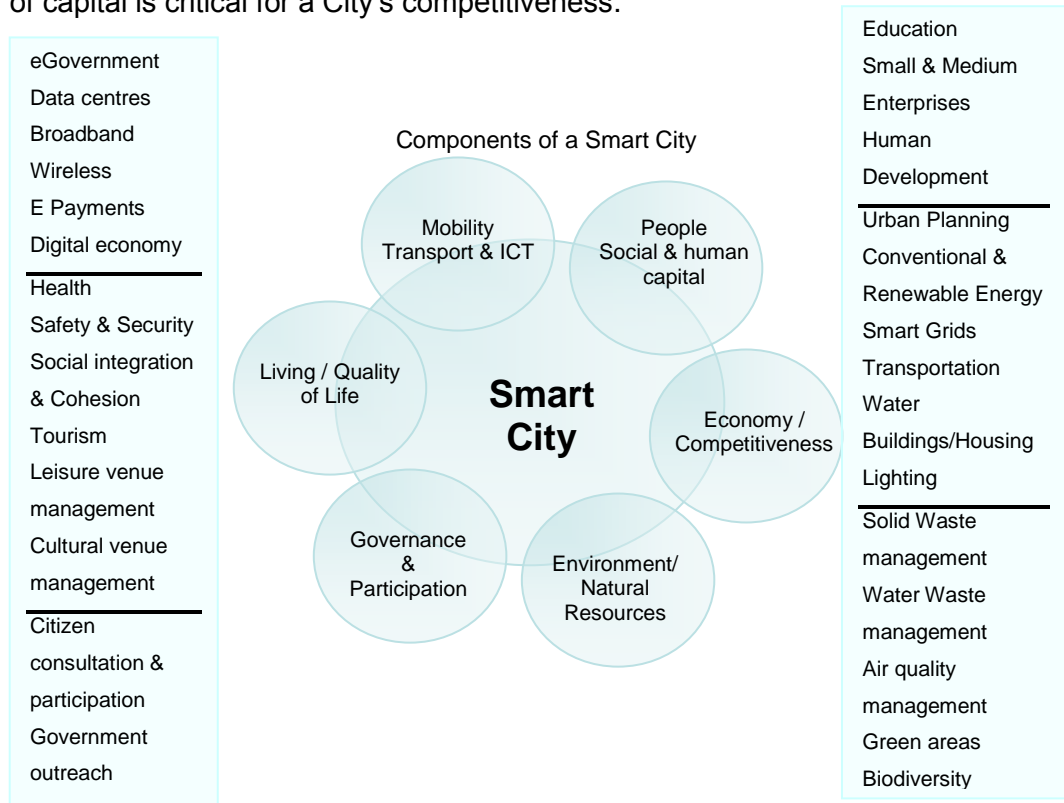


Figure 2: The key components of a Smart City

5.2 **Why do we need a Smart City Strategy?**

The development of a Smart City Strategy & Implementation Plan will facilitate collaboration between organisations within the City to deliver Scotland's Agenda for Cities & the obligations under the Europe 2020 Strategy without compromising Scotland's Climate Change targets.

A Smart City Strategy will not only set out the City's high level aspirations under the themes economy, people, governance, mobility, environment and living but will also outline the actions required to make the aspirations a reality. It will also ensure we are all working together towards the same City vision.

The strategy will be developed and implemented with the support of key city stakeholders. It will bring together public and private organisations throughout the City to share ideas and pilot initiatives to make our City more efficient, resilient & resourceful. We will collaborate to develop and deliver better, more resource efficient projects in terms of buildings, services, energy supply & security.

5.3 **Who is the Strategy for?**

The focus of a Smart City Strategy is to develop the City for the citizens of Aberdeen in the most environmentally sustainable and efficient way. This will ensure the City provides for its citizens through services and infrastructure that address both the current needs of the population as well as for projected growth.

The Strategy focuses on the citizens of Aberdeen so that they can have the opportunities to actively take part in the development of their City, to enhance their City and make it a more efficient place to live, visit and do business.

The Strategy will consider all groups including individuals, community groups, voluntary groups, partnerships, developers and businesses.

5.4 **Why become a Smarter City?**

Whilst the concept of a "Smart City" has been introduced, Aberdeen aspires to be a "Smarter" City; a City which thinks differently about how it works. A Smarter City is one which looks at the strategic benefits of investment from attracting inhabitants and industry – one where a process of sustainable transformation is taking place.

Aberdeen City Council faces a number of competing demands. On the one hand the City is committed to delivering carbon neutral investment, while at the same time faced with the pressing need to attract people to the area to support the local economy. Meeting the imperatives of our economy and delivering on our commitments to carbon reduction and climate change is a major strategic challenge; nonetheless this is a strategic challenge which could be addressed through a Smarter City Strategy for Aberdeen.

For example a Smarter City will:

- develop an economy based on knowledge and innovation;
- encourage a more resource efficient, greener and more competitive economy;
- use technology and data to enable government leaders to make more informed decisions;
- equip the City with the tools for intelligent growth;
- increase efficiency and through this enable citizens and places to interact in a “living city” environment.

The use of smart technologies could help Aberdeen to:

- monitor, measure and manage city services like water systems, public safety, transportation, hospitals, electricity grids and buildings
- cut emergency response times;
- reduce pollution;
- eliminate traffic congestion;
- increase student learning opportunities;
- support clinical care through Telehealth¹;
- optimise health, safety, wellbeing and social connectedness for older citizens living in their own homes².

5.5 **How will we develop the strategy and implementation plan?**

It is intended to develop the strategy using a transition management approach which is an approach we have had experience in through the European funded MUSIC (Mitigation in Urban Areas) project.

This approach brings together City stakeholders over a number of meetings (usually around 6 meetings) to define how Aberdeen will make the transition to a Smarter City. During the 6 meetings we will aim to -

1. Define key priorities;
2. Develop a shared vision for the City;
3. Build upon the shared vision to develop actions and targets; and
4. Define a common action agenda / implementation plan.

Following a transition management approach should result in the development of a City wide strategy and implementation plan which key City stakeholders have been involved with from the start, resulting in stakeholder buy in and willingness to take forward the identified actions. Figure 3 sets out the process in more detail.

¹ Telehealth is the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration.

² Smart Technologies could help to create smart homes, systems to promote physical activity and exercise, technologies for falls prevention and detection, aids to self care management and technologies to reduce social isolation and keep older people connected to society.

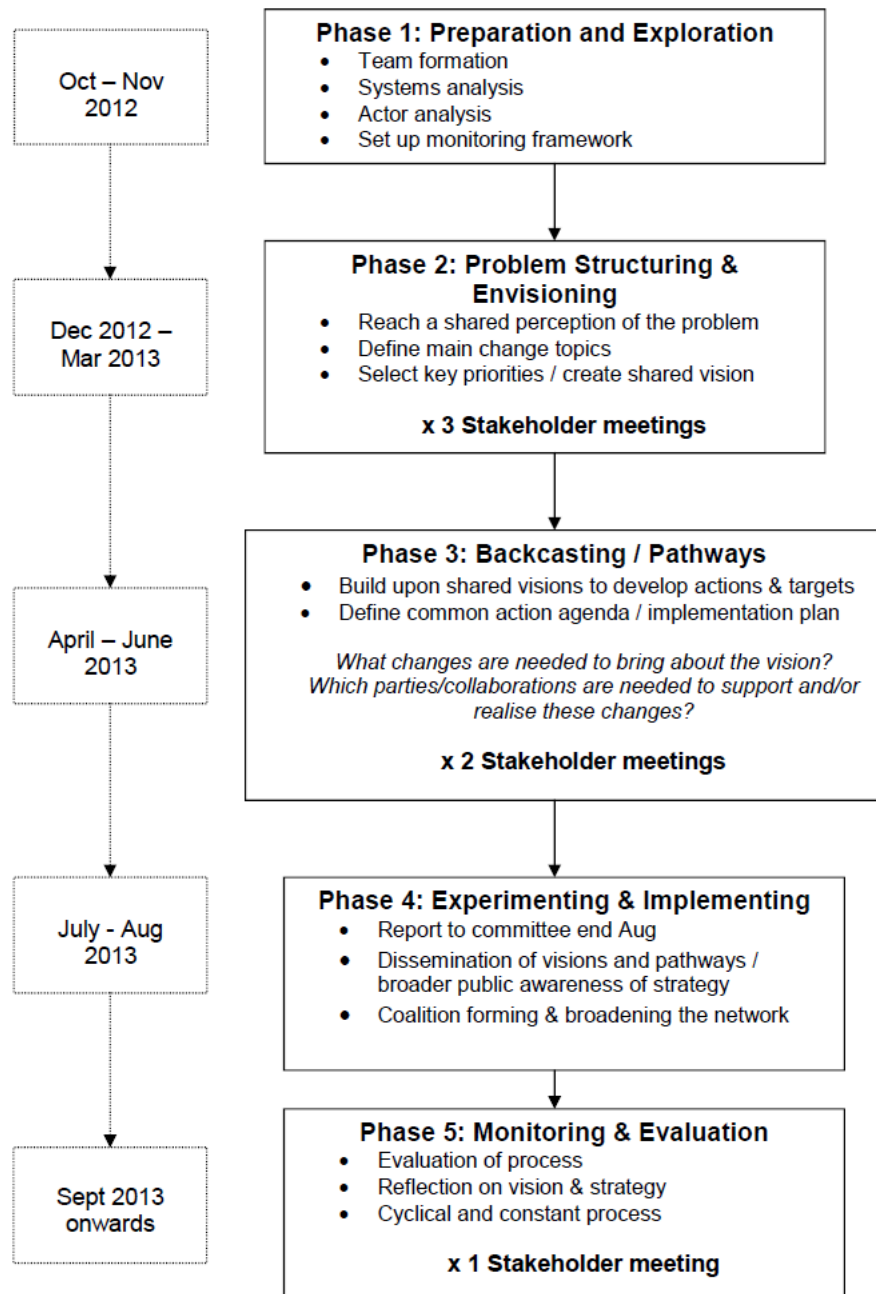


Figure 3: The Smarter City Strategy Development Process

5.6 History of being a Smart City

Aberdeen has a rich history characterised by its creativity, intelligence and resourcefulness, in other words its Smartness. Please refer to Appendix B for further information on Aberdeen's smart history.

5.7 Case Studies - Aberdeen a Smarter City

Aberdeen City already addresses some of the components of the Smart Cities agenda. Case studies of projects within the City which encourage a resource efficient, greener and more competitive City are provided in Appendix C.

6. IMPACT

Developing a Smart City strategy will enable the organisations within Aberdeen to develop a single vision for the City in a collaborative and considered way. This means the City will be well positioned to take advantage of future funding opportunities, as well as developing innovative ways of accessing finance and project delivery, which might not otherwise be available.

The impact of not developing a Smart City strategy is that City stakeholders will continue to deliver projects on a piecemeal basis without cooperation, risking duplication. This could mean the City does not fully exploit the benefits and competitive advantage that a transition to a low carbon economy brings.

This project supports the City's Community Plan and the national priority Outcomes within the City's Single Outcome agreement. In particular Outcome 12 "We value and enjoy our built and natural environment and enhance it for future generations" and 14 "We reduce the local and global environmental impact of our consumption and production".

7. BACKGROUND PAPERS

Vibrant Aberdeen, A Cultural Strategy for Aberdeen, 2010/15
DECC Local Authority Estimates 2009
Smart Aberdeen 2020 (draft)
Behind the Granite, Aberdeen Key Facts 2012

Appendix A: Aberdeen's Policy Context and Drivers

Appendix B: History of being a Smart City

Aberdeen C: Smarter City – Case Studies

8. REPORT AUTHOR DETAILS

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Appendix A: Aberdeen's Policy Context and Drivers

Aberdeen is Scotland's third largest city and the regional centre for the North East of Scotland. It is also one of the world's major energy cities; the challenge for us extends beyond the 2020 timeframe and over the next 30 - 40 years. As a Local Authority, Aberdeen City Council seeks to ensure that that the city remains a global energy hub. Within the Council's 5 year Business Plan 2011-2016 the Council has focussed this commitment to ensure sustainable future for the City and its citizens which links to the Smarter City concept.

Some of the key policies and drivers connecting Aberdeen and the Smarter City concept are detailed below:

European

Europe 2020 – 10 year strategy for growth

Europe 2020 is an EU strategy for smart, sustainable and inclusive growth. The strategy proposes five measurable EU targets for 2020 that will steer the process and be translated into national targets: for employment; for research and innovation; for climate change and energy; for education; and for combating poverty. These targets are as follows:

- 75 % of the population aged 20-64 should be employed;
- 3% of the EU's GDP should be invested in R&D;
- The "20/20/20" climate/energy targets should be met (including an increase to 30% of emissions reduction if the conditions are right);
- The share of early school leavers should be under 10% and at least 40% of the younger generation should have a tertiary degree; and
- 20 million less people should be at risk of poverty.

EU Climate & Energy Package – 20-20-20 targets

The EU Heads of State and Government set a series of demanding climate and energy targets to be met by 2020, known as the "20-20-20" targets. These are:

- A reduction in EU greenhouse gas emissions of at least 20% below 1990 levels
- 20% of EU energy consumption to come from renewable resources
- A 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.

The EU leaders also offered to increase the EU's emissions reduction to 30%, on condition that other major emitting countries in the developed and developing worlds commit to do their fair share under a global climate agreement. United Nations negotiations on such an agreement are ongoing.

National

Scotland's Cities: Delivering for Scotland

This Agenda for Cities sets out the contribution that Scotland's major population centres can make in delivering the aspirations of the Government Economic Strategy. This shared agenda focuses on growth and opportunity - concentrating on developing and promoting the key assets of Scotland's cities and their regions to attract investment, stimulate economic activity and create jobs. The Agenda for Cities will help create the momentum required to make sure that our cities and their regions are able to make the fullest possible contribution to sustained economic recovery - stimulating economic activity and job creation. As part of the agenda for Cities a £5 million Cities Investment Fund has been created to support a Scottish Cities Alliance. The Cities Investment Fund has been designed to accelerate the pace of investment in Scotland's cities by:

- Developing programmes which lever in other funding - either private finance or European funding
- Supporting collaborative programmes between cities which will develop large-scale projects
- Developing programmes which allow for wider city region investment

Scottish Government – Strategic Objectives

The Government has five objectives that underpin its core purpose - to create a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth. These objectives are:

- Wealthier and fairer;
- Healthier;
- Safer and Stronger;
- Smarter;
- Greener.

Climate Change (Scotland) Act 2009

The Climate Change (Scotland) Act 2009 introduced ambitious, world-leading legislation to Scotland to reduce green house gas emissions by at least 80 per cent by 2050. At a time of economic downturn, the Scottish Government has recognised the important role that renewable energy can play and has set ambitious targets to generate 80 per cent of Scotland's electricity from renewable sources by 2020 and 20 per cent of Scotland's total energy use to come from renewables by 2020.

Aberdeen has the capacity to take a lead in renewable energy development by translating established expertise in the oil and gas sector to renewable energy.

Regional & Local **Single Outcome Agreement**

The Single Outcome Agreement 2009-10 lays down a series of local priorities for action in the context of the Scottish Government's strategic objectives – and details how the city council and its community planning partners will work together to meet agreed targets.

The commitments made in the SOA represent a shared direction for all the partner organisations, based on the Concordat between the Scottish Government and community planning partners. The document aims to stimulate even closer co-operation to make services more effective and deliver ever-improving results for the citizens of Aberdeen.

Strategic Planning Development Authority (SPDA)

The SPDA is a partnership between Aberdeen City and Aberdeenshire Councils and has a key role in guiding development over the next 25 years. Their vision is to create an even more exciting, modern and sustainable European city region - an excellent place to live, visit and do business. The Aberdeen City & Shire Structure Plan (2009) includes objectives based on economic growth; sustainable development and climate change; population growth; quality of the environment and sustainable mixed communities.

Aberdeen Local Development Plan (LDP)

The Local Development Plan was adopted on 29 February 2012. The Plan identifies proposals for the development and use of land for a period of 10 years from adoption and contains the policies that planning applications will be assessed against.

Five Year Business Plan 2011-2016

The Council's 5 year Business Plan 2011-2016 sets out the council's key priorities and gives details of the main actions within each of the council's five services. The plan outlines the activities and initiatives which the Council will undertake to achieve the strategic objectives which, in turn, reflect the national priorities set by the Scottish Government, Concordat and the Single Outcome Agreement.

Aberdeen City and Shire Economic Future (ACSEF)

ACSEF is a public-private partnership that drives economic development in the region. Their vision for the North East of Scotland is set out in the "Building on Energy" manifesto:

*"We aim by 2025, for Aberdeen City and Shire to be recognised as one of the most robust and resilient economies in Europe with a reputation for opportunity, enterprise and inventiveness that will attract and retain world-class talent of all ages. Our environment, our accessibility and our hospitality will make Aberdeen City and Shire one of the most interesting and enjoyable locations in the UK in which to visit, live, work and grow up."*³

³ <http://www.acsef.co.uk/infoPage.cfm?pageID=2>

Appendix B: History of being a Smart City

Aberdeen has a rich history characterised by its creativity, intelligence and resourcefulness, in other words its Smartness. Figure 2 depicts the way in which the City has developed. By 1901 Aberdeen had a population of 153,000 and covered more than 6,000 acres, with corresponding growth in every field of Council activity. The 20th century brought new responsibilities for local government. During this time many problems were tackled; not least the slum clearances of the 1930s and the growth of municipal housing and new roads, schools, libraries and community centres were built.

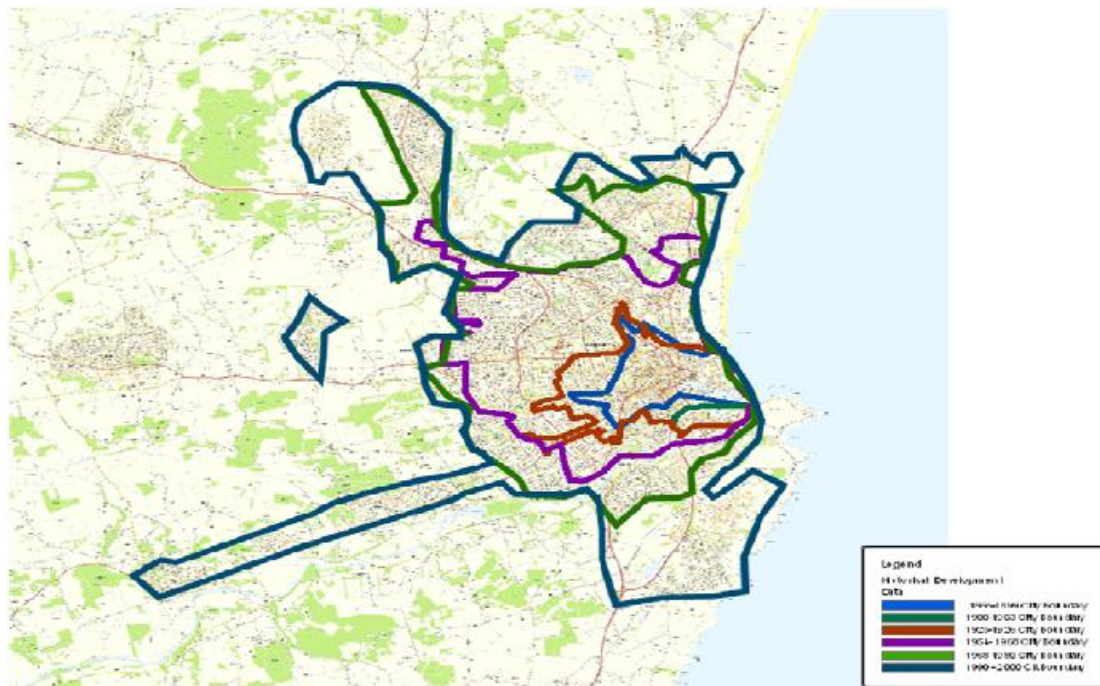


Figure 2: Historical Development of Aberdeen City (1866-2000).

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Smart Economy

- Thomas Blake Glover was a key figure in the industrialisation of Japan, helping to found the shipbuilding company, which was later to become the Mitsubishi Corporation of Japan. One of the founders of Japan's industrial revolution, which has led to the country's present-day prosperity, he is a national hero in Japan. He also helped found the Japan Brewery Company, which later became the major Kirin Brewery Company, Ltd;
- Sir Thomas Sutherland (1834 – 1 January 1922) was a Scottish banker and Liberal Party politician. He founded The Hong Kong and Shanghai Banking Corporation which was the founder member of HSBC Group and directed the P&O Company. He was educated at Aberdeen University. In 1865 he established The Hong Kong and Shanghai Banking Corporation in Hong Kong and became its first vice-chairman;
- The Chivas Brothers traces its roots to the opening of a grocery store at 13 King Street, Aberdeen in 1801. The Chivas Regal brand is a market leader and exported worldwide. Sales grew by 61% between 2002 and 2008;
- The Aberdeen Journal, one of the Press and Journal's ancestors, is one of the oldest newspapers in Britain, first printed in 1748.

Smart People

- Aberdeen scientists and clinicians (Professor John Mallard) became the first in the world to scan the body of a patient using Magnetic Resonance Imaging (MRI) in 1980;
- Hans Walter Kosterlitz (27 April 1903 – 26 October 1996) was a famous German-born British biologist who is best known for his work on endorphins at the University of Aberdeen.

Smart Governance

- The Earliest Royal Charters granted in 1179 by William 1 and 1319 by Robert the Bruce indicates that Aberdeen was already a commercial and cultural centre linking North East Scotland to the trading cities of Northern Europe and the Baltic.

Smart Mobility (Transport & ICT)

- Aberdeen Harbour is the oldest running business enterprise in the UK, founded in 1136;
- The Thermopylae, a clipper ship, was built in Aberdeen for the Aberdeen White Star Line. On her maiden voyage the ship sailed to Melbourne in 60 days, breaking speed records on each leg of the journey.
- Robert Davidson (1804–1894) was an Aberdonian inventor who built the first known electric locomotive in 1837. Davidson was educated at Marischal College, and became interested in the new electrical technologies of the day. From 1837, he made small electric motors on his own principles and tested his *Galvani* a four-wheeled machine, powered by zinc-acid batteries on the Edinburgh-Glasgow line in September 1842 and, although found capable of carrying itself at 4 mph, it did not haul any passengers or goods.

Smart Environment (Natural Resources)

- Aberdeen was once the hub of a thriving fishing industry. As a merchant marine capital it was second only to Glasgow in Scotland;
- The Aberdeen Angus beef breed was developed in the early part of the 19th century.

Smart Living (Quality of Life)

- Until 1858 Aberdeen had two universities, the same number as the whole of England;
- The University of Aberdeen was founded in 1495 and is Scotland's third oldest University;
- The first Chair of Medicine in the English speaking world was established at the University of Aberdeen in 1497.

Appendix C: Aberdeen a Smarter City – Case Studies

Aberdeen City already addresses some of the issues of the Smart Cities agenda. Case studies of projects within the City which encourage a resource efficient, greener and more competitive City are detailed below.

Smart Economy (Competitiveness)

Haptogen

Haptogen were a spin out company from University of Aberdeen in the BioLogics sector (an area where Aberdeen has specific world class capabilities). A drug discovery business aiming to engineer antibodies to create more tailored and less toxic treatments for diseases such as “super-bug” infections, liver fibrosis and cancer. The success of Haptogen caught the attention of one of the world’s biggest drug companies, Wyeth Pharmaceuticals. Just five years after Haptogen was launched, Wyeth acquired the company in a deal thought to be Scotland’s largest for a life-science spin-out, although the value of the deal – thought to be worth £25million – remains undisclosed.

Aberdeen Renewable Energy Group (AREG)

AREG is a private-public partnership, launched in 2001 which aims to position the region as a renewable centre of excellence through initiating and delivering key renewable projects, working with member companies to identify and promote opportunities for them individually or collectively. With over 160 members, AREG represents an impressive breadth and depth of energy experience and expertise which continues to grow. AREG members include energy businesses, research institutes, oil service companies, professional consultants and economic development agencies. Their remarkable diversity extends into every source of renewable energy – onshore and offshore wind, wave, tidal, biomass, fuel cell, photovoltaic, solar thermal and geothermal.

AREG seeks to position the region as a renewable centre of excellence through initiating and delivering key renewable projects, working with member companies to identify and promote opportunities for them individually or collectively.

<http://www.aberdeenrenewables.com/>

European Offshore Wind Deployment Centre

The European Offshore Wind Deployment Centre is a ground breaking new facility to be developed off the coast of Aberdeen which will enable the accelerated development of offshore wind power in Scotland, the UK and Europe. The Deployment Centre is being developed by Aberdeen Offshore Wind Ltd, comprising Vattenfall Wind Power UK and Aberdeen Renewable Energy Group (AREG). Technip will also play a major role in the delivery of the project. The Deployment Centre will allow offshore wind farm developers and associated supply chain companies to test new designs, prove existing products and receive independent validation and accreditation before commercial deployment.

<http://www.aberdeenrenewables.com/key-projects/eowdc/>

<http://www.vattenfall.co.uk/en/aberdeen-bay.htm>

Energetica

Energetica is an ambitious and exciting plan to create a new generation energy community stretching north from Aberdeen's Bridge of Don area to Peterhead and west to the airport. Energetica aim is to create a renowned, world-class destination that will attract innovative energy businesses and highly skilled people as well as feature high quality housing and leisure facilities in an outstanding natural environment based on low carbon principles.

Energetica will host the companies, organisations and research institutions that will collaborate to solve the world's energy challenges, who will focus on the challenges facing the energy industry today such as the need to reduce demand through energy efficient design and the generation of energy from renewable sources.

<http://www.energetica.uk.com/>

Smart People

University of Aberdeen

The University of Aberdeen has 16,000 students and a large international community. The University has a large portfolio of energy related activities including education, research and development and consultancy and close links with industry. Its engineering undergraduate programmes are addressing the skills needs in the renewables sector through the introduction of new programmes such as MEng in Mechanical and Electrical Engineering with Energy Studies. Other relevant courses include Mechanical Engineering, Electrical and Electronic Engineering, MSc in Renewable Energy and MSc in Subsea Engineering.

Institute of Energy Technologies provides energy-related research for oil and gas and increasingly the development of renewable energy technologies such as fuel cells, wave and bio-energy.

The University was also a key player in Aberdeen's European Offshore Wind Deployment Centre, with Vattenfall, Technip and AREG.

The University's environmental scientists have a world leading reputation in marine science and monitoring the impact of marine energy developments and can advise developers on the most environmentally benign deployment strategies.

Robert Gordon University

RGU has an international reputation for providing high quality education from undergraduate through to PhD level. RGU is also home to one of Scotland's leading energy research capabilities. It's Centre for Understanding Sustainable Practice (CUSP) benefits from a range of international expertise and is involved in projects in Indonesia and the Maldives as well as Scotland.

The University's School of Engineering is developing a Masters degree in Offshore Renewables with delivery beginning in January 2012 as part of a wider strategic move to reinforce its position as a leading provider of advanced energy industries learning in the UK.

The University is also involved in the European Offshore Wind Deployment Centre.

Smart Governance (Participation)

The Accord Card Scheme

The Accord Card is Aberdeen City Council's smartcard which provides access to a variety of local and national services such as Access to Leisure, Young Scot, school meals at all of the council's twelve secondary schools, free bus travel and much more. It was one of the first such smartcards to be used by a local authority in Scotland. The Accord Card was originally developed to address issues related to social inclusion particularly the stigma associated with students receiving free school meals. Today the Accord Card is a means of providing socially inclusive access to a wide variety of local and national services including Scotland wide free bus travel for the older and disabled and Scotland wide concessionary travel for 16 to 18 year olds. The Accord Card is available to all residents of Aberdeen and to date Accord has issued in excess of 80,000 smartcards with a variety of services such as:

Council Website and Online Services

Aberdeen City Council first launched its website in 2000 and provided its first online/electronic service in 2004. Since then the Council's website has been in the UK top 10 (out of 430 local authorities in the UK) in terms of usage, comparing population and levels of usage. There are over 800 different services provided on the website, mostly to citizens but sometimes also to businesses and all can be found easily on the Council's A-Z of online services. Ninety Five percent of citizen interaction now takes place online – this constitutes a new direction for the delivery of public services. Online is now the preferred channel of choice. This also proves very cost effective to the tax payer as we see the figures in terms of average costs of services provided across channels:

| Activity | Channel | Average Unit Cost (Connect Digitally) |
|----------------------|----------------|--|
| Online transaction | Online | £0.26 |
| Enquiry by phone | Phone | £3.06 |
| Face to face enquiry | Face to Face | £10.98 |

www.aberdeencity.gov.uk

Smart Mobility (Transport & ICT)

Digital Aberdeen

A high level technical and commercial study with the objective of maximising Digital Connectivity in the Aberdeen City and Aberdeenshire region has been undertaken. Three potential projects were identified to address the region's broadband needs as part of a regional broadband development plan;

- Deploying next generation **wireless** technology throughout the City;
- Building an **open access fibre network** on the route of a future peripheral road around the City;
- Developing and implementing a **rural access strategy** to ensure 100% availability of broadband services and access speeds in the rural areas.

Aberdeen City Council intends to enter into a dual procurement process for a private sector provider(s) to build and operate the City WIFI and Open Access Fibre Network.

The **Aberdeen City Wireless project** aims to provide a 4G network for the City. The objective would be to give the City of Aberdeen world class wireless infrastructure which would give enhanced broadband access capability for both residents and businesses as well as enabling tourists to access local information and travel data.

The **open access fibre network** will be built on the route of a future Aberdeen Western Peripheral Route. All businesses in the footprint of the peripheral road will have access to cost effective broadband services from 100Mbps to 1 Gbps – giving Aberdeen City and Aberdeenshire a competitive advantage and driving inward investment. There is also potential to expand the coverage to the strategic growth areas defined by the Aberdeen City and Shire Structure plan.

The **rural access network** will deliver a minimum peak download speeds of 4 Mbps across the region and approx 60% of the population in Aberdeenshire will have speeds in the range 4Mbps to 22 Mbps depending on distance to an exchange/street cabinet.

The Open Data project

Between them Aberdeen City Council and Aberdeenshire Council control almost 4,000 miles of roads network, which cover remote rural areas, urban centres, coastal routes and high-altitude mountain passes which are all affected by adverse weather and disruptions to traffic flow in various ways. Large numbers of people commute across the region, and into and out of the city. Normal travel can be disrupted by planned and unplanned road works, accidents, flooding, ice and snow and other factors including major events (e.g. Offshore Europe Conference), or the transport of large infrastructure items (e.g. Wind Turbines) by road.

The Open Data project's approach is to make a number of datasets available for the first time as Linked Open Data and to amalgamate that data with other sources; and then to build on top of it a user-friendly interactive web-based winter travel information service for mobile and standard web browsers. This new service offers the potential to present previously unavailable up-to-the-minute 'ground truth' information on travel conditions, as well as gathering together existing travel and weather resources.

The use of ICT in Schools

1) Wireless WAN and LAN

Aberdeen City Council is in the final stages of the roll out of a wireless Wide Area Network (WAN) to all of the schools in the City which has been a massive undertaking. Compared to the average local authority provision of broadband in Scotland, Aberdeen's is well above average, with a provision approximately five times faster. The City Council has also implemented a wireless local area network

(LAN) which allows for learning anywhere at any time within school buildings by giving access to pupils and teachers to all of their files.

2) Interactivity and mobile device connectivity

Every classroom in Aberdeen provided for by Aberdeen City Council is now equipped with interactive whiteboards with speakers. This has been a massive step and has gone a long way in encouraging the use of ICT in learning as well as in terms of encouraging teachers to engage with the students in this way. The Council is currently piloting a scheme that will enable pupils to bring their own mobile devices into the classroom and use them as part of their learning process, connecting to the school's wireless connection. Training is provided for staff on the use of ICTs in the classroom and this is paving the way for the huge culture change currently underway in the education system and in line with the vision that Aberdeen has for its future learning systems which is documented in the "City of Learning" strategy.

3) E-portfolios, GLOW and Management Information Systems

Aberdeen schools are currently using an E-portfolio system which is run on the Council's school intranet server and includes the use of blogs for peer assessment and for the completion of homework. As well as this the "Virtual Campus" initiative allows pupils and staff to use web conferencing to deliver classes from one school to another when not enough teachers or demand for a class exists. This saves on transport and staff costs as well as being more environmentally friendly

Alongside this sits the Management Information System which allows pupil tracking, monitoring and reporting. Teachers can enter grade information and marks to compile information in live time about each pupil which can be accessed by guidance teachers to monitor and track progress, empowering them to intervene quickly should any problems arise. The Management Information System is also used to send email, text and voicemail messages regarding absences, lateness, emergencies and to alert them to online newsletters or school updates. The use of paperless records improves the efficiency and directness of communications and cuts down on paper costs while increasing resource efficiency.

Hydrogen bus project and renewable fuelling infrastructure

Aberdeen City Council and local partners are developing an ambitious hydrogen bus project which will lead to the deployment of a hydrogen bus fleet in Aberdeen, fuelled using locally generated renewable hydrogen. The use of hydrogen as a transport fuel offers great promise as a key component of a low carbon energy system. Hydrogen can be generated from a wide range of sources, offering improved energy security and if generated from renewables can offer one of very few routes to fully decarbonise road transport.

Nestrans

Nestrans is the Regional Transport Partnership for Aberdeen City and Shire. Its purpose is to develop and deliver a long-term regional transport strategy and take forward strategic transport improvements that support and improve the economy, environment and quality of life across Aberdeen City and Shire.

<http://www.nestrans.org.uk/home.html>

Smart Environment (Natural resources)

Aberdeen Heat and Power Ltd

Aberdeen Heat & Power Ltd is a 'not for profit' company that was set up by Aberdeen City Council in 2002 to develop and operate district heating and CHP (Combined Heat & Power) schemes in their area. The scheme has grown through three principal projects and now supplies around 1200 flats in multi story blocks and 8 public buildings. Carbon emissions from these buildings have reduced by 45% and typical fuel costs to tenants have been reduced by 50% over the previous heating system. The Company continues to develop their District Heating network and is currently installing a £1m extension of underground mains towards the City Centre with the aim of providing heat to the Council's Town House and other public buildings en-route. In this respect, Aberdeen is a leader in the UK in this area. The savings on base costs results in more resources for other services: redistributing savings to benefit local communities.

<http://www.aberdeenheatandpower.co.uk/>

Aberdeen Forward Limited

Aberdeen Forward is a charity that initiates and supports environmental and recycling projects. They work with communities and businesses to educate and promote projects that help to protect our environment, reduce waste and encourage recycling. Current initiatives include a real nappy project, master composter schemes and garden waste collections in Aberdeenshire. With funding from the landfill tax scheme, Aberdeen Forward provide grants to community groups for projects that aim to improve quality of life and further protect our environment.

At their Sustainable Communities Centre they provide information on environmental topics and run eco-friendly community workshops, such as upholstery, sewing and practical food growing. They also sell second-hand office furniture and stationery through our Creative Waste Exchange project to both the general public and business community. All of their work is in-keeping with their ethos to protect the environment, minimise waste and reduce landfill.

<http://www.aberdeenforward.org/>

Open space Strategy

Aberdeen City's Open Space Strategy sets out a new vision and aims to improve the quality of our open spaces in the City. There is growing evidence that quality and accessible open spaces contribute towards improving health, economy, environment and well being. It promotes sustainable development and helps in mitigating the impacts of climate change such as flooding and air pollution and provide green networks by linking various habitats benefiting biodiversity.

Aberdeen Open Space Strategy is based on the results of the city wide open space audit conducted in 2010 and has been prepared involving communities, businesses, residents and partner organisations. The high level strategic aims and objectives provide opportunities for everyone to help contribute towards improving the quality of life in the city through its various actions

http://www.aberdeencity.gov.uk/planning_environment/planning/planning_sustainable_development/pla_open_space_audit.asp

Sustainable Urban Rural Fringes – River Don Project

The Sustainable Urban Fringes (SURF) project brings together partners and experts from across the North Sea Region to exchange information and develop a common approach towards the sustainability of urban fringe areas. Urban Fringes are recognised as valuable assets, which can provide a high quality environment in an urban setting, creating vital areas for the health and well being of local communities.

<http://www.sustainablefringes.eu/ProjectPartners/AberdeenCityCouncil.asp>

Smart Living (Quality of Life)

SCARF – Save Cash and Reduce Fuel

SCARF provides householders, businesses and organisations with independent, free and impartial advice on the sustainable use of energy that will not only reduce the amount of energy they use or save them money on fuel bills, but give them a warm, dry environment that puts less strain on natural resources and combats climate change. This may include details of any grants and or cash back schemes that may be available from suppliers and other bodies and sometimes if eligible the installation and measures for loft and cavity wall insulation can be made available.

<http://www.scarf.org.uk/>

Strategic Development Planning Authority

The Strategic Development Planning Authority (SDPA) is a partnership between Aberdeen City and Aberdeenshire Councils and has a key role in guiding development over the next 25 years. Their vision is to create an even more exciting, modern and sustainable European city region - an excellent place to live, visit and do business. The SDPA is one of 4 city-region planning authorities in Scotland. Their primary role is to prepare and keep up-to-date a strategic development plan for the area. They do this by engaging with both stakeholders and communities - all with an interest in the future of the area.

<http://www.aberdeencityandshire-sdpa.gov.uk/home/home.asp>

Lively Cities (LICI)

The purpose of LICI is to (re)create links between places and people in order to reinforce social cohesion, balance the city, attract investors and make cities strong and attractive places to live, work, visit and invest. Each partner identified a public space within their city which despite significant aesthetic, structural and commercial improvements in recent years, have unfulfilled potential. The Green area of Aberdeen which we are developing has a diverse community consisting of residents, independent retailers, market traders and other private sector organisations. The city centre location also creates a transient community of city-wide residents and visitors and it is our intention to fully engage with all groups.

Silver City Surfers

Silver City Surfers is a charity run by volunteers who aim to give over 55's in Aberdeen and the North East of Scotland the opportunity to learn about basic computing including the use of email and the internet.

Aberdeen Action on Disability

Aberdeen Action on Disability (AAD) was established in 1992 and is a voluntary organisation, recognised as a charity and managed by people with physical and sensory disabilities. AAD, is committed to equal opportunities and barrier-free services for all persons with physical and sensory disabilities. It is involved with service providers and decision makers in ensuring that people have equal access to services such as education, housing and transport, and service providers comply with all current and disability legislation

Aberdeen Day Project / The Bread Maker

The Bread Maker is an artisan bakery and coffee house which provides meaningful work and training for adults with learning disability. At The Bread Maker are 20 apprentices with a learning disability, supported by a staff of 15 people and a group of volunteers who give their time freely. The Bread Maker is operated by a charity, Aberdeen Day Project Ltd., which was established in 2000. Its aim is to assist our apprentices to cope with the challenges of working within a business environment

through a combination of support, training and therapy, with the intention that in time a number will find full or part-time employment in other businesses in Aberdeen.

Fuel Poverty & Combined Heat and Power Scheme

Since 2003, fourteen local authority multi storey blocks have been linked in to Combined Heat and Power (CHP) district heating networks. Previously all of these blocks had electric storage or warm air heating systems which were expensive to run. As a consequence 70% of the occupants were identified as being in fuel poverty in 2002. CHP is a very efficient method of producing heat and power simultaneously and so keeping the cost to the end user at a low and affordable level. All the multi storey blocks linked in so far to the CHP district heating networks have been 'fuel poverty proofed' meaning even someone on the lowest level of income is able to comfortably heat their home without being in fuel poverty. Through monitoring the first 4 multi storey blocks linked into a CHP district heating network in 2003/04, additional benefits were identified, including a reduction in outstanding debt on the rent account for these flats, lower turnover and an increased demand for these flats.

Affordable Warmth Scheme

This scheme has been delivered via a Service Level Agreement with Castlehill Housing Association as the managing agent for Aberdeen Care and Repair since 1999. It aims to ensure that home owners who are in fuel poverty are assisted to have improved, efficient heating systems and insulation measures installed, as appropriate to their home, in order to reduce their fuel bills. The provider assesses what measures are required to achieve affordable warmth, accesses all available grants for the home owner and provides low-interest loan to cover the balance of the costs. Each loan is repaid out of savings made on the home owner's fuel bills and set at a level that does not put the person back into fuel poverty. Approximately 200 home owners are assisted through this scheme each year.

Aberdeen Foyer

Established in 1995, Aberdeen Foyer is a charitable organisation working to prevent and alleviate youth homelessness and unemployment in Aberdeen and Aberdeenshire. At their core they provide supported accommodation to former homeless and at risk young people alongside a range of learning, training and employment support as well as community health services.

Foyer Housing comprises 80 supported tenancies across 7 accommodation sites.

The Foyer's supported accommodation offers a safe home but also a place of opportunity, to support young people to make all the changes they wish to make to enable them to become independent, happy and achieve their full potential.

Foyer Learning delivers a range of learning, training and employability programmes for tenants and people who access the Foyer's services from the wider community. Working in partnership with agencies such as the Prince's Trust and with Aberdeen College, the Foyer provides employability skills training in areas such as numeracy, literacy and basic office skills as well as specialist industry specific programmes and national vocational training programmes.

Foyer Health plays an integral role in the delivery of all Foyer services promoting healthier lifestyle choices and providing specialist support, as and when required: Anything from intensive one-to-one counselling through to general nutrition, safe sex and parenting advice.

Foyer Enterprise, the Foyer's wholly owned trading subsidiary, encompasses the Foyer Restaurant + Gallery, Foyer Graphics, Roadwise Driver Training, Foyer Works and Foyer Catering Co. The businesses underpin the work of the Foyer, raise the profile of the organisation in the wider community and provide an invaluable employment and training resource for those with whom we work.

Foyer Works is a social firm, offering training and employment opportunities to long-term unemployed individuals who often have multiple barriers to work such as offending behaviour, mental health and drug misuse issues.

Shmu (Station House Media Unit) WORKS

Is a new initiative offering direct employability and skills development services for over 19 year olds, using radio as a key tool for engagement.