NEED TO KNOW

Review Number Three

Local Government
Knowledge Navigator

Local Government in the Digital Age

A Local Government Knowledge Navigator
Evidence Review

John Thornton

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Knowledge Navigator

THE NEED TO KNOW SERIES

This evidence review on 'Local Government in the Digital Age' is part of the 'Need to Know' series which has been commissioned by the Local Government Knowledge Navigator.

'Need to Know' reports are summaries of available research derived knowledge and evidence relevant to topics that have been identified to the Knowledge Navigator as priorities by local government. They:

- Highlight key areas of relevant knowledge
- Signpost where the evidence can be accessed in more detail and
- Identify where research investment has potential to meet any gaps identified in that knowledge and evidence base.

We welcome feedback on this review and suggestions for future topics to be covered in this Need to Know series. Please contact Professor Tim Allen at admin@ukracs.co.uk

THE LOCAL GOVERNMENT KNOWLEDGE NAVIGATOR

The Local Government Knowledge Navigator is a two-year initiative funded by the Economic and Social Research Council (ESRC), and steered by ESRC, Local Government Association and Society of Local Authority Chief Executives. It was launched in January 2013 with the aim of helping local government to make better use of existing national investment in research and research derived knowledge and evidence, and to influence future research agendas, programmes and investment.

The Knowledge Navigator team is Professor Tim Allen, Dr Clive Grace and Professor Steve Martin.

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This 'Need to Know' report has been prepared by **John Thornton**. John is consultant, adviser and management coach with over 30 years of experience of working on technology related programmes, projects and services with local authorities, central government and suppliers in both the UK and overseas. This includes leading and supporting, as the LGA/ IDeA Director of e-Government and e-Envoy, the multi-billion pound programme to ensure all council services were made available online. He is a qualified accountant, holds an MBA and is a Fellow of the Institute of Directors. John.Thornton@e-ssentialresources.co.uk

Local Government
Knowledge Navigator

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SUMMARY

The word 'digital' - as in 'digital age' and 'digital government' - has become a widely used shorthand description to summarise the improved use of technology, digital resources and better information management.

This Review summarises and signposts available research and evidence of good practice that has relevance to inform local government policy and practice in relation to supporting Local Government in the Digital Age. It focuses primarily on up-to-date material, practical advice and sources that lead to further source materials, and recognises that many readers will want to 'dip' into topics as well as read the whole report.

The aim of this publication is to engage and help inform a non-technical audience. There may be a temptation in some councils to see 'digital' as something to pass to the Head of IT or CIO - this is a mistake. As this report shows, we live in a digital age and this new environment offers huge potential to interact with citizens more effectively and make a step-change in levels of efficiency.

The digital agenda and exploiting its opportunities should be a matter of concern and interest for all leaders, chief executives, cabinets and directors as well as managers at all levels.

This report starts in **Section 1** by setting the context. It summarises the potential benefits to be gained from making greater use of digital technologies and the internet, and seeks to define the meaning of 'digital'. It also introduces the concept of becoming 'inherently digital', where local authorities understand the potential power of new technologies and use these technologies judiciously as facilitators of and catalysts for change.

Section 2 sets out the main political and economic pressures driving the Digital Agenda. These include cost reduction, transparency and modernisation. It also flags up concerns over the generally poor track record of public sector organisations in implementing technology-based projects.

Section 3 explores how changing technology is impacting on local government. This includes explaining what it means to live in a digitally enabled world; cloud computing; developments in mobile government; cyber threats; the 'Internet of Things' and 'Apps'. **Section 4** then considers from a non-technical perspective how local councils can best exploit these changes including encouraging innovation; 'Big Data'; the use of social media (eg Twitter, Facebook); mobile & remote working; bring-your-own-device (BYOD); SMART Communities and digital literacy/digital inclusion. It also takes a forward look at the topics that will most likely be of particular interest to local councils in the immediate future.

Section 5 looks at the governance aspects of operating in the digital age including oversight, implementation & project management and risk management. **Sections 6** and **7** then signpost useful resources and suggested areas where further research would be useful.

As this is a fast-moving and primarily forward-looking topic, much of the research is brought together in policy development and thought leadership studies. We have therefore sought to include what might be termed 'grey research resources' that help to explain what 'good' looks like and how future thinking might develop.

It should also be noted that the areas which are of interest to local government tend to merge with research and policy developments in central government, healthcare and other parts of the public sector as well as the private sector, in both the UK and overseas. We have therefore sought (where appropriate) to include relevant research in other sectors and countries.

1. INTRODUCTION & CONTEXT

The potential benefits for local government of greater use of technology and digital information are enormously persuasive. Digital technologies and the internet have the potential to:

a) Reduce costs, increase efficiency and deliver better outcomes

b) Stimulate and enable innovation and new ways of working

c) Re-shape the relationship between citizens, communities and local government

d) Improve communications and partnership working across the public services

e) Access and exploit a wealth of available data.

This review signposts existing and emerging research-derived knowledge and evidence available to help inform local government in taking action to exploit more effectively the opportunities offered by digital working and the internet in the interests of improving efficiency, innovation and community engagement. It also seeks to identify gaps in the research base that might be addressed through further research.

The expectation is that this will help to stimulate further discussion of these issues and reduce the workload on those seeking to learn more about this important topic.

Defining Digital

The word 'Digital' as in 'digital age' and 'digital government' is widely used as a concise way to describe a 'modern world' that uses, or is attempting to exploit the potential of new technologies and digital information. Three useful definitions come from Socitm, the US Federal Government and Steve Ballmer, Chief Executive, Microsoft. These are:

"'Digital' implies technologies that allow people without programming skills (e.g. citizens, service users, employees, suppliers and others) to interact directly with other people, locations and organisations via the internet, using a desktop computer, mobile device, kiosk or other 'consumer' interface. In the context of local public services, it is about transforming the way we do just about everything and ensuring that it covers the service from start to finish."[1]

"Digital government is using modern tools and technologies to seize the digital opportunity and fundamentally change how government serves both its internal and external customers – building a 21st century platform to better serve the American People."[2]

"The number one benefit of information technology is that it empowers people to do what they want to do. It lets people be creative. It lets people be productive. It lets people learn things they didn't think they could learn before, and so in a sense it is all about potential."[3]

A Vision of the Future

By 2016, there will be three billion internet users globally – almost half the world's population - and if it was a national economy in its own right, the internet would be the fifth largest in the world. In the UK, the internet economy currently accounts for over 8% of GDP, a greater share than in any other G20 country.[4] We live in a digital age; and as Prof Helen Margetts[5], the Director of the Oxford Internet Institute, points out this has brought all kinds of changes to our social, economic and political life. Many citizens live quite a lot of their lives on-line - shopping, working, socializing, dating, making travel plans and entertaining themselves. Not surprisingly, when it comes to interacting with government, in any form, she says, people expect to do that online too.

Prof Margetts, who is also a member of the UK Digital Advisory Board, says that this new environment offers a fresh potential to interact with citizens efficiently and that 'digital by default' (see below) strategies offer real potential to save money. However, she argues, government bodies need to go further and become 'inherently digital', where internet-based technologies are centre stage, where many processes are 'zero touch,' without human intervention, where government agencies 'become' their electronic presence. Where 'Big Data' (see Section 4) helps to inform policy making and implementation by providing a much better understanding of citizens' behaviours, preferences and needs. Where communications are agile enough to anticipate and work with massive shifts between social media platforms.

It is tempting, therefore, to conclude that digital is the answer to everything. It clearly is not, says Steve Halliday, President of Socitm and Chief Information Officer, Solihull MBC.[6] Digital is important, transformative and positively disruptive. But of itself digital is not the panacea for resolving all problems. Digital works best when it is deeply embedded in the organisation's culture and when the customer journey and business processes are part of the design thinking. And sometimes, particularly where there are complex social problems to solve, the best customer journey is not digital at all.

Whilst improving efficiency and innovation do not rely on technology, new technologies can spark ideas, improve existing practices and support successful implementation. The pressure to find new and ever more efficient means of delivering services will persist and public service bodies will need to continue to look to technology as an important facilitator and catalyst. Technology therefore needs to be used judiciously as part of both strategic and tactical plans to deliver better services more effectively, by organisations that understand its potential and managers that know how to implement it successfully.[7]

2. THE POLITICAL & ECONOMIC PRESSURES DRIVING THE DIGITAL AGENDA

The main political and economic drivers are:

- The desire to reduce costs and improve efficiency by taking full advantage of the opportunities offered by advances in technology. This is primarily encapsulated in plans for 'digital by default'
- The Government's 'transparency agenda'
- A recognition that politicians and public bodies need to rethink how they communicate with and engage citizens, communities and businesses
- A desire to continue to modernise the UK economy, making it more competitive, making greater use of new technologies and developing improved digital skills in a higher proportion of the population
- A recognition that 'government bodies' in general have a poor track record of implementing 'technology' projects.

These are explored in more detail in the following sub-sections.

Digital by Default

Councils in England provide over 600[8] public services to their local areas. There is enormous potential to improve these services for their users, taxpayers and staff, through the use of digital technologies.

Digital/online services can make local authorities more accessible by providing easy access, 24 hour per day, seven days a week. They also offer substantial opportunities for local authorities to make savings. A Socitm[9] study across 120 local councils in 2012 estimated that the 'cost of contact' for face-to-face transactions averages £8.62, £2.83 by telephone, but only £0.15 online. Most local authorities are therefore focusing their efforts on what is called 'channel-shift', moving services from more expensive channels to more cost effective, self-service, online enquiries and transactions.

The initial work in putting all 'government' services online began in 2000[10] with an original target of completing this work by 2008, later revised to 2005. This was a response to the growth in e- commerce and the increasing expectation by citizens that they should be able to do business with government online, 24 hours a day. It was also part of government plans to modernise public services, make them easier to access and to reduce costs.

Building on over a decade of experience of implementing online services the Government Digital Strategy (published in November 2012)[11] sets out how government services are expected to become 'digital-by-default'. It defines digital-by-default as 'digital services that are so straightforward and convenient that all those who can use them will choose to do so'. It estimates that moving services from off-line to digital channels will save between £1.7 and £1.8 billion a year.

As part of the Government's Digital Strategy, all new or redesigned transactional services going live after April 2014 will also need to meet a new digital-by-default service standard. Socitm has been very clear that the approach by the Government Digital Service (GDS) to developing 'digital by default' services is focused on Whitehall departments and agencies, and cannot simply be adopted wholesale by local public services. All local councils and public services leaders should however consider the Government Digital Service Manual[12] when reviewing the delivery of local public services.

Transparency

A key plank of the Conservative party manifesto prior to the last election was its plan for publishing data online, which was seen as a key technique for improving transparency and trust. This included the publication of all local government spending above £500 and all public contracts above £10,000. The coalition government[13] then implemented these plans with the stated aim of increasing democratic accountability by letting citizens see how their money is spent and thereby being able to hold local authorities to account over how their council tax is spent and the decisions that are made. It was thought that this would create an 'army of armchair auditors'.

'Transparency' through publication of open and reusable data was also expected to 'shine a spotlight on waste', establishing greater accountability and efficiency, and opening up new markets for small and local businesses and the voluntary sector.[14]

While still emerging, we are beginning to see some evidence of the transformative potential of open data. Some useful pointers and international perspectives on open data are provided in 'Beyond Transparency, Open Data and the Future of Civic Innovation'.[15] Plus, a useful international example of 'Open Government' is also provided by Canada.[16]

It should also be noted that policies to promote increased transparency have broad cross-party support and that it was a Labour government that introduced the Freedom of Information Act 2000. Professor William Dutton[17] argues that the internet is becoming the "fifth estate" in the same way that the rise of the press, television and other mass media has created an independent institution in many countries that has become known as the fourth estate, which has been central to pluralist democratic processes. Dutton believes that whilst the internet is being used by existing institutions to try to enhance what they do, it is also a means of mobilising individuals and groups to create local and global networks that can hold institutions accountable for their actions. For example, it can be used to increase the accountability of politicians, the press, academics and doctors, by offering internet users alternative sources of information and opinion.

It is still too early to see the full effects of the Government's Transparency Agenda. It is clear however that it has had an impact on behaviours within public bodies and provided access to additional data. Also, international comparisons[18] show that open data has rapidly moved from being a niche interest, to being part of the global policy mainstream. Government-led open data initiatives have spread across the globe, and civil society and technologist experiments using data to improve governance have been spreading organically, from budget monitoring in Nigeria, to court transparency projects in Argentina. Transparency is increasingly regarded internationally as a key measure[19] of the effectiveness of governance. Understanding fully the implications for governments and local authorities will require more research.[20]

Transparency is a multifaceted concept[21] that includes openness, surveillance, sharing and governance. Delving further into these issues is beyond the scope of this report and may well justify a separate Local Government Knowledge Navigator review in its own right in the future. (See also the 'Internet of Things' in Section 3, as well as 'Open Data' and 'Big Data' in Section 4).

Engaging with Local People & Businesses

The meeting of people, technology and politics is sometimes referred to as 'e-Democracy'. Not surprisingly, much of the research in this area looks at these issues through the lens of Parliament.

In 2006, the Hansard Society's[22] work on e-democracy raised concerns that 'public trust' in politics was low and explored the opportunities to reverse these trends using e-democracy. It argued that – whilst few would question that Britain is a democracy – it has been criticised for its lack of democratic vitality, as illustrated by low turnouts at elections, low levels of interest in politics and very low levels of public engagement. Citizens have been described as 'noisy spectators' rather than active participants, and politicians accused of retreating into a 'bunker mentality'. These problems of political engagement are not unique to the UK, but are all the more significant given the UK's position as a world-class progressive democracy.

The parliamentary expenses scandal in 2009 and further revelations[23] have continued to erode public confidence in politics, whilst at the same time technology has continued to make it easier and faster to share information. When for example a 5.9 earthquake hit near Richmond, Virginia in the USA in 2011, residents in New York City read about the quake on Twitter feeds 30 seconds before they experienced the quake themselves[24]. The advent of the internet and mobile technologies has created a paradigm shift in terms of how we communicate with each other and convene our lives.

As Hansard Society research in 2009 points out[25]: Parliament is not immune to these changes and the benefits of new information and communication technologies (ICT) to elected representatives, their constituents and to the wider democratic process are increasingly well documented. It is now much easier to get in touch, keep in touch, research and campaign. It is far easier to bring issues to the public's attention – although, perhaps ironically, it is harder to maintain topical interest – and to connect with like-minded individuals. This instant society places new expectations on politicians; citizens increasingly expect them to be accessible, available and responsive.

These new technologies also offer opportunities for more open 'crowd-sourced' approaches to decision making and informing decision making, for example inviting individuals and interested parties to comment on budget allocations and indicate areas for budget cuts and efficiency improvements. Increasingly local councils are sharing data online and inviting input from local citizens and communities, as with the 'Redbridge Conversation'.[26] See also the analysis by the Oxford Internet Institute of the success rates of petitions[27] on the No.10 Downing Street website.

Parliament 2020 is a multi-country visioning exercise undertaken to discover how new and emergent technologies are being or could be used to transform the processes of Parliament and, in particular, its relationship with the public.[28] This provides recommendations on communication, technology, information, engagement and procedures that should be of interest to local authorities.

Modernising the UK Economy

The Government's vision for the information economy[29] is underpinned by three factors. First, a highly skilled digital workforce (whether specialists who provide information technologies or non- specialists who use them); Second, an excellent digital infrastructure (both physical and regulatory); and lastly, a framework for privacy and security. The combination of these will, the Government believes, support growth, innovation and excellence in the economy as a whole. Each of these is explored in more detail in the following paragraphs.

Even more than in the industrial era and information age, the internet economy requires a well- educated and skilled workforce. Policies that emphasise education and skills-building are essential.[30] It is also useful to note that the overwhelming majority of information economy businesses – 95 per cent of the 120,000 enterprises in the sector – employ fewer than ten people[31] (See also 'Digital Literacy & Digital Inclusion' in Section 4).

As the Boston Consulting Group confirms, investing in communications and broadband can provide a powerful catalyst for unlocking additional investment and raising productivity, thereby helping to create the springboard to economic growth. In 2010, the new coalition government set an ambition for the UK to have the 'best' superfast broadband network in Europe by 2015[32], which in 2012 was refined to include being the 'fastest'. It has backed this strategy with £530 million of funding, plus a further £300 million to support 'super-connected cities' and the extension of mobile coverage, which with additional local funding and support from the EU should take the total public investment to over £1.3 billion. However, there is a hill to climb. In terms of 'speed' the UK is currently ranked 18th, we have less fibre optic connection to homes than any other country in Europe and we have lagged behind other G20 countries in rolling out 4th generation mobile networks (4G).[33]

A recent report from the Policy Exchange entitled "the Superfast and the Furious"[34] looks at the priorities for broadband policy in the UK. It concludes that the government should 'recast' its policy on broadband connectivity, focusing explicitly on economic and social outcomes, rather than pursuing 'speed' as a proxy for progress. This includes ensuring minimum speed requirements are maintained and updated to support evolutions in services, providing access for all that want it, together with proposals to empower better consumers and only regulate where there is the possibility that the market will not provide adequate services, e.g. rural communities. The Policy Exchange report concludes that 'speed matters' mainly when it is too slow.

Security issues are considered separately in Section 2 under the heading of 'cyber threats' and identity issues are explored in Section 4 under the heading of 'looking forward'.

With limited resources for economic development, local authorities and local economic partnerships (LEPs) are having to rethink their strategic purpose and explore how digital and creative industries might fit into their plans. The London Borough of Croydon's plans to re-invent itself and its vision to create a centre for knowledge, innovation and creativity by 2040[35], provides an example of the challenges confronting a local council.

Poor track record of implementing technology-based projects

Historically, the majority of major projects in government, particularly IT projects, have not delivered the anticipated benefits within original time and cost expectations, says the National Audit Office.[36] There are many reasons why projects fail to meet expectations, such as poor project management and the impact of external factors beyond the control of those responsible for the project. However, the challenges of delivering government projects are compounded, says the NAO, by the endemic over-optimism which characterises decisions to commit to projects and the subsequent management of them. This undermines the likely success of a project, often leading to substantial cost overruns, delays in completion and failure to deliver the benefits. These views are supported the NAO says by its 'back catalogue' of reports, which clearly illustrate that over-optimism is widespread and has many causes and adverse effects.[37] Examples include the National Fire Control Project and the National Programme for IT in the NHS. (See also Section 5 on Governance, including implementation, project management and risk management).

The public sector is not alone in experiencing problems with large IT projects.[38] Also Socitm[39] suggests that local authorities have particular strengths in several key IT delivery areas that have helped to produce a stronger track record of implementing technology based projects than some other parts of the public sector. Unfortunately, the perceived difficulty of implementing technology based projects, coupled with the poor track record of implementation by many public sector organisations, has undoubtedly had an impact on the willingness of risk-averse organisations to exploit fully the benefits of evolving and emerging technologies.

3. HOW CHANGING TECHNOLOGY IS IMPACTING ON LOCAL GOVERNMENT

Living in a Digitally Enabled World

Most UK citizens use and benefit from digital services:[41]

- 79% of the UK population is now using the internet, up from 59% in 2005
- 92% of the population (70% for aged 65 or over) have a mobile phone, with 45% possessing a smartphone
- Levels of trust are high with only 47% of people having concerns about entering credit card details online and only 24% read online terms and conditions
- Over 63% of the UK population use online banking services

Over the course of this decade, according to Policy Exchange[42], two fundamental trends will cause us to radically rethink the way government works, with major implications for both policy and policymakers alike. The first is the acceleration toward ubiquitous availability of general purpose digital technologies. This will make it possible to completely rethink how government organises itself, how it learns and adapts, and how it fosters innovation. The second is the shift toward openness as the default, not just in technology but across our economy and society. A genuinely open government that responds to the growing demand from citizens for accountability and participation will deliver better policies and foster stronger communities. And in an open, networked world, says Policy Exchange, we will discover that many of the things that were once the sole preserve of governments are, in fact, sometimes better done by someone else entirely. The organisations that are already thriving in this new digital age, it says, share some important characteristics. They leverage technology to enable a smaller number of people to get the job done. They set their sights on doing things better, not just by a little but by a very long way. They work faster, iterating rapidly and using data to guide their decisions. And through openness they build stronger communities to support and promote their activities. (See also 'Digital future for public services?'[43] and 'Building Tech-Powered Public Services'[44] by IPPR.)

The Royal Borough of Kingston upon Thames[45] in London, as an example, set a goal that 50% of its transactions should be conducted as self-service online in 2013. The early indications are that it achieved this target, compare with around 16% of total transactions online in July 2012. This has been achieved by integrating back office systems (including CRM - customer relationship management and mapping), developing a single sign-on (rather than having different arrangements for logging on to each council service) for reporting incidents, introducing scripted workflow arrangements (automating processes) and linking directly to contractors systems.

Cloud Computing

There is a lot of talk today of cloud computing, sometimes this is also called 'Software as a Service', or SaaS. Cloud computing is a broad term that is used to describe the delivery of technology services over the Internet, rather than from your own onsite data centre. It is in the process of revolutionising the way that ICT services are provided[46] and is promising to radically reduce costs, with some organisations claiming saving of 30% or more through from its adoption.

This term originally arose because whenever an IT expert drew a diagram of IT systems, it had become standard practice to draw a picture of a fluffy cloud to represent the Internet. This 'cloud' now signifies that the location of the hardware and software is irrelevant; it sits somewhere beyond the boundaries of the traditional ICT department and it could reside on a server elsewhere in the UK or overseas.

Millions of consumers already unknowingly use cloud computing to purchase from Amazon or email using Yahoo or Google mail, and more recently businesses and public sector organisations have seen this as a way of reducing costs and increasing both access and flexibility. In most cases, to access SaaS/cloud computing all you need is a web browser and access to the Internet. It can then provide your e-mail, desktop, finance, procurement and many other systems. Plus, because it is web based it makes it easier to integrate with mobile working[47], as well as supplier and partner systems, and to share activities across multiple locations. Its advocates also claim that it is much more "future compatible", i.e. easier to upgrade as circumstances and technologies evolve/change. The possible disadvantages[48] are primarily around what happens when you lose contact with the internet, security and inflexibility.

In 2009 the Digital Britain report[49], in a section entitled 'the journey to digital government' promoted the idea of a G-Cloud, or Government Cloud, as a way of contributing to the £7.2 billion of savings in back office and IT services identified in the Operation Efficiency Review. Then in 2013, central government confirmed that it had adopted a 'Cloud First' policy[50], making it mandatory for buyers of IT products and services in central government to consider purchases through the cloud as their first option.

Local government is already benefitting from the adoption of cloud services and it is expected that it will increasingly benefit from the use of G-Cloud services[51].

Mobile government

According to the global IT company Cisco[52], global mobile data traffic grew by 70 percent in 2012 and by the end of 2013 the number of mobile-connected devices exceeded the number of people on the planet.

The OECD reports[53] that mobile cellular is the most rapidly adopted technology in history and the most popular and widespread personal technology worldwide. It says that growing research demonstrates the potential of mobile communications to transform governments and to provide access to public information and services in areas where infrastructure required for Internet or wired phone service is not an option. M-government (mobile government) is therefore emerging as the next big wave for information and communications technology (ICT) use in the public sector. The motivations for moving to M-government include better accessibility, availability, responsiveness and scalability, as well as lower costs. It can also result in higher levels of stakeholder participation and can improve the image and perceptions of the public sector organisations offering mobile services. It concludes however that for many public agencies, M-government is still in the early stages of development.[54]

There are several aspects to the greater use of mobile technologies. One is that citizens and service users will increasingly use mobile devices to access council services. In 2013, Socitm[55] found that the percentage of visits from mobile devices to access online services averaged 27.4% for the first five months of the year. However, Socitm says the experience leaves something to be desired: 'visit failure' is on average 13% higher when mobile devices are used; visitor satisfaction is on average 11% lower when mobile devices are used; and the percentage of visitors who say that they will not use their mobile devices again for accessing council websites rose from 15% in January to just over 20% in May.

Mobile technology is also having a substantial impact on the ways that employees work (see BYOD below) and on the ways that councils can engage with citizens and service users (see Social Media below).

Cyber-Threats

A recent report by Detica[56] in partnership with OCSIA/Cabinet Office estimated the cost of cyber- crime to the UK to be £27bn per annum and growing. The national importance of cyber threats and information security are also confirmed by the inclusion of these as a 'tier 1' threat in the 2010 National Security Strategy[57].

'Trust' sits at the heart of effective government and commerce, and it becomes even more important in today's world of virtual transactions and rapid electronic communications.[58] As public sector organisations move to 'digital-by-default' (See Section 2) to improve convenience for citizens and reduce costs, they must recognise their increased vulnerability to cyber-attacks, and do everything they can to ensure that citizens, businesses and government retain high levels of trust and confidence in our digital systems. It is clear that as trust and confidence increase, more people are willing to use online systems, they spend less time calling and checking, and costs reduce. We also know that if trust and confidence are undermined, the impact on organisations in terms support and sorting out problems can be disproportionately high.[59]

The vision defined in the National Cyber Strategy[60] is for "...the UK in 2015 (and beyond) to derive huge economic and social value from a vibrant, resilient and secure cyberspace", and its objectives include making the UK "...one of the most secure places in the world to do business in cyberspace".

A useful analysis of cyber threats is provided by the European Network and Information Security Agency (ENISA).[61] The 10 Steps to Cyber Security is a guide produced by GCHQ, BIS and CPNI to provide advice to companies on countering cyber threats. It has also proved to be a very useful guide for boards of public sector bodies.[62]

Another useful source is 'Operating Securely in the Digital World'[63], which provides guidance to help managers and leaders in public sector organisations understand the risks and the language of information security. It also provides the outlines of two tools developed to help boards, senior managers and information teams that would like to review their information security strategies and governance arrangements, including a development framework.

The Internet of Things (IoT)

The internet has developed from a communication network to what is called the "internet of things" [64] – connecting (via the internet) the buildings we work in, the cars we drive, our traffic management systems, bank ATMs, our industrial control systems and much more. There are fewer than ten

billion people on the planet, but it is forecast[65] that there will be 80 billion things (machines, devices and objects) connected to the Internet by 2020, compared with 15 billion in 2012, up from 4 billion in 2010.

For local councils this provides huge potential opportunities for automation and increased efficiency. It provides the potential to improve the reliability of services, engage better with service users, improve supply chain management and automate audit controls. The insurance industry, for example, has already begun to show how it can change services, e.g. fitting sensors to your car to say where it is and what it is doing means that insurers can provide a more flexible type of insurance geared to how you drive.[66]

It also raises issues about the need to secure key infrastructure (see cyber-threats above) and the societal implications.[67] A simple example could be automatically reading an energy meter, which can reveal a household's routine behaviour. This might be regarded as 'sensitive' data. Who owns this information, can it be used for other purposes and can it be sold? Similarly, sensors that call a family member if a senior citizen does not get up raise issues of transparency and consent. In some cases the existing laws and processes cover these issues, whereas in other areas we are still trying to understand the possibilities and implications.[68]

Apps

Mobile access to the internet enables the use of apps. 'App' is short for 'application', another name for a computer program. Apps can run on traditional PCs, but the term is usually used to refer to programs that run on mobile devices, such as smartphones or tablet computers. Apps can let your phone or tablet perform special tasks or access specialist information.

Apps provide opportunities for service providers, including local councils, to improve and personalise services. An example of how they can transform services is provided by Addison Lee, London's largest minicab firm. In one month alone, after releasing its own app to allow customers to book minicabs from their iPhones, the company took 75,000 additional requests that equated to income in excess of £1.4m.[69] Importantly, this also automated a lot of work that would otherwise have been conducted over the telephone and cab radios.

Apps are downloaded[70] from an online shop run by the makers of the phone or tablet's operating system. In the case of the iPhone and iPad, it is called the 'App Store'. On Android phones it's the 'Android Market', on Windows phones the 'Windows Marketplace' and on Nokia phones it's the 'Ovi Store'. These are all accessed by an icon on the device's home screen. Birmingham City Council's free mobile web app[71] is an example of how councils can use apps to:

- Browse council jobs
- Find and get directions to any leisure centre, library, school, museum, or household recycling centre in the city
- Keep up with BCC news and any disruption to services
- Get contact details for a councillor
- Check school term dates
- Report a problem with rubbish bags, recycling boxes or fly-tipping
- Request street cleaning
- Report faulty street lights and street name plates
- Request rubbish bags and recycling boxes if you are a new occupier
- Report a pot hole.

4. EXPLOITING ADVANCES IN TECHNOLOGY

Encouraging Innovation

Public service bodies are under increasing pressure to be more innovative in order to deliver more efficient services and better outcomes for service users. Whilst innovation does not rely on technology, new technologies can both spark innovations and support their successful implementation.

Innovation can just happen and be very beneficial, but successful organisations understand that it is important to create a climate and culture that encourages innovation. They create an environment that helps to unlock and harness the talent, energy, and imagination that already exists within their staff, customers, managers and leaders. Successful organisations should aim to generate a portfolio of innovation projects which can then be evaluated, piloted, prototyped, or tested through other means to assess the viability, potential payback in terms of benefits and the likely level of risks.

There should be an expectation at the outset that not all these projects will proceed and that some might be beyond the overall capacity of the organisation.[72]

Innovation[73] is not just about coming up with a new idea. Innovation is about identifying one or more better ways of improving on established practice and then using these ideas to bring about an identifiable step change in the behaviour and/or performance of the organisation to deliver better outcomes or increased value for money. It can include innovations in:

- **Service design or delivery** - delivering existing services in a new way, phasing out existing practices or introducing new services
- **Processes and management** - changing the processes, accountabilities and management arrangements
- **Strategic positioning** - new strategic partnerships, radically rethinking corporate objectives or identifying new customer groups
- **Democratic processes** - finding new ways of engaging and communicating with citizens, voters and services users

Using information intelligently[74] can help generate innovation. Analysing data and management information to identify trends and anomalies can make future options clearer and spark creative thinking about how best to meet users' needs. It can also provide evidence of potential performance improvements or efficiency savings (See also 'Big Data' below).

Analysing, learning and dissemination[75] are critical to the innovation process but are usually the most neglected element. It is important to evaluate what works and what has gone wrong, with a view to promoting continuous learning within the organisation and the sharing of learning more widely within the public services.

Service Innovation

Health and social care are areas of particular interest for local authorities at present and illustrate some of the opportunities for service innovation. For example, loneliness and the lack of independence are major issues for many old people. New technologies[77] have enormous potential to help elderly people live independently. However, many are not aware of the benefits, do not know how to use and engage with digital technologies or simply don't feel confident enough to use them. See for example 'Reimagining the Front Door to Healthcare',[78] some of the 'Social Care/Telecare' case studies[79] published by the Telecare Services Association and the Assisted Living Innovation Platform (ALIP).[80]

Whilst further detailed examples of innovations in individual services are beyond the scope of this report, for some services these will be covered by other reports in this Local Government Knowledge Navigator series, see for example 'What Councils Need to Know about People with Learning Disabilities'[81] (See also Building Tech-Powered Public Services).[82]

A useful starting point for accessing information on service innovation is the Knowledge Hub operated by the LGA at https://knowledgehub.local.gov.uk The following subsections explain further some of the potential building blocks of service innovations.

Big Data

The modern world generates a staggering quantity of data. The term big data[83] has come to refer to these very large datasets and 'big data analytics' refers to the process of seeking insights by combining and examining them. Regardless of the stance a government chooses on openness - i.e. decisions on making public data free to use, reuse and redistribute - an abundance of data and computing power gives the public sector new ways to organise, learn and innovate.[84]

There was a time when getting hold of information for monitoring and planning was difficult.[85] Local authorities used to build specialist management information systems to extract and compile data around a relatively small number of key performance indicators. Now they are entering what has been dubbed the Big Data Era where CRM (customer/citizen relationship management) systems and business processes produce huge amounts of data as by-products of day-to-day operations. They are also beginning to collect much more geospatial information, feedback from social media interactions and real time sensory data in areas like energy conservation, tele-care (see Service Innovation) and traffic management (See the Internet of Things). The result is that they are now in danger of being overwhelmed by data.

What is different about this new environment is that all organisations are now gathering data that may or may not need.[86] 'We don't know what we don't know' - we don't know

the questions that might be posed in the future, and we most likely do not understand the potential cause and effects relationships between the different types of data collected. But storage is relatively cheap, and so organisations are beginning to build huge virtual warehouses of potentially valuable data.

Why is this important for the public sector? The public services almost certainly produce more data than any other industry, plus the analytical perspectives are probably more diverse than any other sector. Like other industries during a period of continuing economic uncertainty public service bodies need to focus on cost control, understanding customers, optimising operations and managing risk. Additionally, they want to understand the political and regulatory impacts of plans and policy changes (See also the ESRC Big Data Network).[87]

Prof Helen Margetts, Director of the Oxford Internet Institute says: [88] "Inherently digital government [see A Vision of the Future, Section 2] - as well as being more efficient - can be more effective, higher quality, and more citizen-focused. There is a lot of 'free' data out there on the Internet, as citizens go about their business on social media platforms, expressing their opinions, ranking and rating goods and services, participating in social networks and civic associations, they leave a digital imprint. This is what we call 'big data,' a new sort of data - not survey data that tells us what people think they might do, or think they have done, but real data, transactional data about what they really did or really think, now. As social scientists, it is a challenge to work out what this data means - it is not the sort of data we are used to dealing with, it doesn't have handy demographics attached like a survey. But it is worth doing because all this data can give government a much better understanding of citizens' behaviours, preferences and needs. It gives government information that it doesn't currently have about hospitals and schools, about tax and social welfare, about initiatives that could - or do - make up civil society - or the 'big' society - about riots, demonstrations, protests and unrest. Information that can be used to match policy to preferences, match services to what citizens are willing - and are not - willing to do, in terms of managing their own affairs, for example, as they do with their banks accounts. This inherently digital environment also allows policy-makers the possibility to 'nudge'[89] their citizens in certain directions." If people are doing so many things on-line, says Prof Margetts, then online environments can be manipulated to foster certain types of behaviour (see also Social Media below).

An interesting example of the potential power of using transaction data to forecast change is provided by an MIT study[90] entitled 'The Future of Prediction: How Google Searches Foreshadow Housing Prices and Sales'.

Open Data

When the Coalition Government came to power, it committed to unleashing a 'tsunami of government data'. Since then thousands[91] of datasets have been released including local authority and central government spending, salaries of senior civil servants and a raft of crime, education and economic data. The Government argues[92] that making this data available will create opportunities for citizens and business to use this data creatively to add value and provide new services, as well as reduce administrative burdens (e.g. fewer Freedom of Information requests) and make public services more accountable.

To facilitate the use and reuse of this 'open data' the government has developed and published an 'Open Government Licence',[93] which is a simple set of terms and conditions to enable the free re- use of government and public sector information. The presumption is that open data can be freely used, re-used and redistributed by anyone, although in some cases charges may apply.

There is some evidence[94] from research on behalf of the Research Councils UK in partnership with JISC, the Royal Society and Sciencewise-ERC that the public finds the concept of open data to be abstract and relatively hard to engage with. That there is confusion around the distinctions between data, information and knowledge, and that the principal benefits of open data are seen to accrue for researchers rather than the public.

Open data is an important initiative that potentially provides citizens, businesses, local councils and government itself with vast amounts of data to use for holding the public services to account, for policy planning and for engaging citizens in the ways described above in 'Big Data' (See also 'Transparency' and 'Engaging with Local People & Businesses' in Section 2).

Social Media

Social media, such as Facebook, Twitter, LinkedIn and Google+, are rapidly becoming one of the main ways that people communicate, with two-fifths of people's time on a computer spent doing just that.[95]

Social media now provide very powerful tools to communicate with and engage whole communities of people. But organisations must avoid the temptation to say "we must do more social media stuff" without being clear about why. Social media is like any other tool. You should ideally start with an objective.[96] It might for example be "we need to improve staff morale by sharing more information about what is happening and why" or "we need to improve the efficiency of our adult care services by increasing collaboration between different providers". You then decide how best to use the available tools, including social media, to achieve these improvements. Otherwise it is a bit like starting with a hammer and saying how can I use this more? The result is that you will probably end up using it in situations where a screwdriver or a saw might be more appropriate.

Social media adds a range of very powerful tools to the management armoury; we need to use them intelligently. The following paragraphs provide pointers to useful sources of information and guidance on understanding and using social media tools.

The idea of 'nudging' people towards positive behaviour change has gained interest in recent years[97] from academics, individuals, and even governments. Nudging can be explained in terms of social norming effects, where individuals adjust their behaviour to align with their peers or what is perceived as a normative measure. A recent study undertaken through the School of Computer Science at the University of Lincoln[98] has looked at using online social networks to raise awareness of, and bring about positive behaviour changes on societal issues such as energy consumption and healthier lifestyles. This study provides three behaviour change case studies in domestic energy and physical activity that utilise online social networks. It is also worth looking at the arguments[99] against using 'nudge'.

In June 2012, the Cabinet Office and the DCLG published[100] a useful list of sources of information on how best to use social media. The advice published by the Government Digital Service[101] is a useful starting point. This was produced as part of the UK Government ICT strategy.

The Networked Councillor[102] is a useful report that explains the challenges and opportunities that face local politicians operating in an increasingly networked and digital society. See also the Role of the Networked Councillor in Scrutiny.[103]

Mobile & Remote Working

Introducing mobile and flexible working can deliver enormous savings through downsizing corporate offices, increasing productivity and extending hours of service delivery. It can also increase staff loyalty, reduce absenteeism and deliver a better work-life balance.[104] It is not surprising therefore that it has been widely adopted by local authorities. However, whilst "mobile", "remote" and "flexible" working are often linked together, they are usually trying to solve separate, but linked problems.

Flexible working is primarily about offering employees greater flexibility in terms of where and when they work. Remote working is providing the ability to work from home or some other remote location. Mobile working means that the service can be delivered to clients at the most convenient locations, transactions can be completed in real-time and a greater volume of work can be completed as less staff time is taken up with travel and desk-based administration.

A common misconception is that technology provides the starting point for considering the adoption of these working practices, whereas technology needs to be seen as an enabler. Changes must start from the expectation they will improve the efficiency and responsiveness of services. (See also 'Mobile' in Section 2 and BYOD below).

BYOD - Bring Your Own Device

There has been a massive growth in the use of smart devices – smartphones and tablets. Employees can now do so much at home using these devices that they want to connect them to corporate networks and use them to access corporate

systems. This trend has become known as 'bring your own device' or BYOD. Essentially it revolves around giving employees permission to use their own devices to do their jobs.

In reality, it probably began more by 'stealth',[105] with employees using more modern devices that were easier to carry and had a battery that could last all day, rather than lugging around an aging corporate laptop. Given that most of the pressure to support these devices was then initially coming from senior executives and departmental managers who had purchased iPhone, iPad or similar android devices, IT teams reluctantly began providing limited support for these devices.

As Socitm reports,[106] BYOD has the potential to deliver cost savings and increased productivity with employees buying their own hardware and using the devices for work outside the office. In considering BYOD, Socitm says organisations need to balance their requirements for device management, security and data protection with the impact on the user of issues such as acceptable use and privacy. Its report on BYOD provides 16 case studies showing a range of practical approaches to BYOD.

SMART Communities

The concept of SMART Communities and SMART Cities[107] builds on the certainty that local and regional governments around the world will need to make better and smarter use of technology and information if they are to meet the challenges that will confront them over the coming years.

Technology and SMART thinking should mean that a person in a small village can access the same services as someone living in a big city. Equally, it should make it possible for the person in the big city to feel the same connection with their community and local government as residents of small towns and villages. Used wisely, technology provides access and responsiveness, whilst facilitating empathy and community.

There is a lot of hype around SMART Cities and SMART Communities. The following sources are useful pointers to developments and thinking rather than hard evidence.

'Future City / Glasgow'[108] is an ambitious £24million programme designed to demonstrate how technology can make life in the city smarter, safer and more sustainable. Glasgow beat 29 other cities to win funding for the programme in a contest run by the Technology Strategy Board - the UK Government's innovation agency. This project seeks to bring together a new city technology platform and operations centre to help make services including travel, energy efficiency and social transport smarter and more efficient. Manchester is also doing some interesting work to use technology and information better to improve and modernise transport in the City.[109] Amsterdam[110] is building its claims to be a SMART city around the themes of living, working, mobility, public facilities and open data. San Francisco[111] is retrofitting its 1,000 mile waste water system with sensors to spot and repair leaks to prevent the overflowing of drains in the storm season, thereby managing the risk of mixing public water with untreated sewage. Plus, Milton Keynes[112] is working with the Open University to transform itself into a 'smart city' using 'big data' to develop new and smarter ways of managing key infrastructure such as transport, water and energy supplies.

One of the most ambitious smart projects is Masdar City[113] in Abu Dhabi where the government is spending $22 billion to create a new SMART city that blends together green technologies, social innovation and business growth. The aim is to create a city of the future to anticipate and respond to global pressures. Its critics say that it is building its foundations on what will become outdated technologies while its proponents take the view that all technologies evolve and become outdated.

Digital Literacy & Digital Inclusion

Digital inclusion describes the ability of individuals and groups to access and use information and communication technologies. Digital inclusion encompasses not only access to the Internet but also the availability of hardware and software; relevant content and services; and training for the digital literacy skills required for effective use of information and communication technologies.[114]

The cost of digital exclusion is great. Without access, full participation in nearly every aspect of society - from economic success and educational achievement, to positive health outcomes and civic engagement - is compromised. Digital literacy skills, including the ability to find, evaluate, and use information to achieve goals, are a necessary pathway to digital inclusion. Digital communities meet the needs of their members for learning about technology and maintaining the skills necessary to take advantage of the opportunities enabled by it.

A useful framework for understanding and combatting digital exclusion from a US perspective has been produced by University of Washington and published in conjunction with the International City/County Management Association (ICMA).[115] See also digital inclusion in Sunderland.[116]

Looking Forward

This is a fast-moving topic, where new trends emerge, new ideas take off and the lessons of the past are not always understood and in many cases may not be documented. It is important to try to look ahead and see how advances in technologies might resolve long standing issues or create new opportunities. Not surprisingly, the forward looking studies tend to include a lot of jargon and hype. Deloitte's annual report[117] examining trends in technology provides one of many perspectives on such developments. Two issues that are probably of particular interest to local authorities are **managing digital identities** and **geospatial visualization**.

The multiplicity of digital identities across the public services has been an issue for local authorities for over a decade. However, in today's connected world of digital-by-default and data sharing, managing and verifying digital identities is an increasingly difficult issue for all local authorities. Plus data breaches can lead to heavy fines and public criticism.

'Place' and 'time' underpin almost everything that local councils do and control. They also underpin almost everything that happens in the lives of citizens, as well as everything we know and learn about the world. Geospatial Visualization[118] is the power to take data (see 'Big Data') and present it graphically in terms of maps and relative positions over time. The human brain is naturally wired to process visual images by recognising patterns and these graphical representations potentially enable us to better understand complex problems as well as solve more basic issues such as correctly identifying the location of a faulty lamp-post, and the time it was repaired.

You might also like to think about the potential opportunities of 'gamification'.[119] Gamification is about taking the essence of games - fun, play and passion - and applying it to real world, non-game situations. In a business setting this could mean designing solutions using gaming principles to improve the efficiency of say back-office tasks, e.g. making boring and repetitive tasks more interesting and competitive; using these principles in training and career development activities, or as a means to engage more young people in community activities.

5. GOVERNANCE

Oversight

Governance[120] is sometime likened to a nervous system for the organisation. When it is working well, it ensures that the organisation remains in balance. It helps to anticipate dangers and a changing environment, and it ensures good communication throughout the organisation. Good governance develops a vision for the future and sets the strategy for achieving it. It also provides the leadership and performance management processes that establish, drive and deliver organisational goals and objectives.

According to Socitm[121] the governance of public service change programmes - shared services, channel shift, business process automation - is not at present done consistently well across the public sector. There is a long history of reviews into failure, particularly of so-called (but often wrongly labelled) 'IT projects', with little evidence that such reviews result in significantly improved results. There are two main issues. First, too often change initiatives only deal with part of the problem, for example, they implement a technological solution without addressing the other components of change; or they set a policy direction without adequately considering the technological implications. The focus needs to be on running business change, not ICT, projects.

Second, the challenges of implementation are not addressed effectively, under-estimating the risks, change management, human resource issues and resulting in the embarrassment of policy being derailed (See also Section 2 on Poor Track Record of Implementing Technology Based Projects).

Implementation & Project Management

Today nearly all public sector organisations are digital enterprises; they are entirely dependent upon digital information and technology to deliver services and to communicate with service users.[122] For most organisations this means that technology is no longer something that is grafted on to the organisation to deal with specific tasks, as in the past when you added a payroll or email system.

Now information is the lifeblood of the organisation and the technology provides the arteries and blood vessels designed to deliver the right information, to the right place, at the right time, drawing on a raft of inter-related sub-systems.

There was a time when we sought to develop new computer systems using a sequential design process, often referred to as the waterfall model, which started by attempting to define exactly what the project was expected to produce. The project team then went away and built a product or system that they thought met those requirements and then attempted to present a finished product, usually many months, if not years, after the project was first specified. The result was usually disappointing because in the intervening period the requirements had changed, the original personnel had moved on and the technology and expectations had evolved. These problems led to the development of new approaches like Agile Project Management, DSDM (dynamic systems development model), Lean Development and prototyping.[123]

Socitm's advice[124] is that the programme governance arrangements can be flexible to suit the local culture but, critically, in all cases must include senior management representation from organisations that will be most impacted by the change. This includes CIOs, given the dependence on ICT of majority of business transformation programmes. Local politicians will also need to be engaged; whether that is directly on programme boards, or through mechanisms such as member reference groups, will depend on local circumstances. Boards, it says, should have a separate identity, as effective governance cannot be achieved through, for example, tacking a programme discussion onto the agenda of a management team. Boards should also include top-level sponsorship – a member of the corporate management team and, possibly, a senior (cabinet or equivalent) politician. In its latest guidance, 'Better with Less',[125] Socitm sets out five 'key principles' and ten 'enabling principles' to progress the digital agenda in local councils.

Risk Management

One of the challenges for councils is taking advantage of technology whilst avoiding the cyber pitfalls. A recent article in Public Risk entitled 'The Digital Dilemma' gives a useful round up of the risks, albeit from a US perspective. These include Breach of Privacy, Infringement of Copyright, Social Media Issues and Transmission of Malware.[126] Another major area of risk management relates to information management and data security (See Cyber-threats in Section 3 above for a better understanding of the issues and sources of advice). You may also want to consider shifts in privacy concerns[127] and how digitization and the associated use of customer data have affected consumer privacy concerns. Whilst sections of the public seem willing to live lives on Facebook and other social media, they may be less trusting of public authorities, yet at the same time wanting more efficient and 'joined up' public services.

One of the reasons often quoted for unsuccessful projects is that they may have been viewed by business managers as "IT projects". In reality there is no such thing as an IT project. These types of projects should all be based on improving the delivery and management of business services and as such should be "owned", driven and managed by the organisations that commissioned them. They may rely on ICT technologies to deliver the business benefits but this does not mean that the responsibilities and ownership can somehow be abrogated to the "techies" in the IT department, or to specialist consultants.[128]

History has taught us that projects won't necessarily go smoothly. Unforeseen problems, mistakes and errors can arise and probably will. When projects begin to go wrong, it can often create a blame culture, where the parties to the project focus more on absolving themselves of responsibility for any wrongdoing rather than quickly resolving and rectifying the issues. Successful organisations in both the public and private sectors anticipate that problems will arise and factor this probability into their contracts. They identify problems early, deal with them and manage their way through them in partnership.[129]

6. RESOURCES

Access to Resources

This is an area of expertise where the publication of research studies is sometimes restricted or where the resulting reports can be very expensive to purchase. For many of the sources, however, your local authority may already hold a corporate subscription, or you may obtain access via an officer who is a member of the particular professional body or organisation.

Newsletters & Updates

This is a fast moving field and so regular updates on research and developments are important. Useful sources of updates include:

The Digital by Default Newsletter:
http://www.digitalbydefaultnews.co.uk
IT Hound – the business technology library:
http://www.ithound.com/
Tech Republic Daily & Weekly Newsletters:
www.techrepublic.com
LGA Research Bulletin:
http://www.local.gov.uk/research-bulletin

LGA

The LGA's Knowledge Hub is a professional social network designed to helps people in local government connect and share useful information online in a secure environment https://knowledgehub.local.gov.uk

Oxford Internet Institute

The Oxford Internet Institute was founded in 2001 at the University of Oxford as an academic centre for the study of the societal implications of the internet. Focused on measuring, understanding and explaining the internet's multi-faceted interactions and effects, its research projects bring together some of the best international scholars within a multi-disciplinary department in one of the world's top research universities. http://www.oii.ox.ac.uk/

Socitm

Socitm is the professional body for people involved in the leadership and management of IT and digitally enabled services delivered for public benefit. It started life as the professional body for local authority IT managers but now has a much wider membership and appeal, whilst still retaining a very strong focus on developments in local government. It seeks to bring together the broader 'big picture' with practical advice. It research activities are broadly categorised as:

a) Insight: This subscription service publishes research into topical issues related to policy development and management of information and technology matters

b) IT Trends: Since 1987, Socitm has published an annual survey into all the challenges and issues facing Socitm members

c) ICT Benchmarking

d) Thought leadership studies designed to stimulate debate and influence policy development

The Open Data Institute

Founded by Professor Sir Nigel Shadbolt and Sir Tim Berners-Lee, the aim of the Open Data Institute is to innovate, exploit and research the opportunities for the UK created by the Government's Open Data policy. http://theodi.org/

Economic and Social Research Council (ESRC)

The ESRC research catalogue contains details of ESRC funded research projects and their outputs. It contains details of over 100,000 research outputs (such as books, conference papers and journal articles). There are also details of the outcomes of the projects, and the impacts that the research has had on the economy, society and individuals. You can browse the catalogue by year, output type, subject area or search using keywords.
http://www.esrc.ac.uk/research/research-catalogue/

The Digital Government Society

The Digital Government Society (DGS) is an international, not for profit, professional society devoted to advancing democratic digital government via research, policy, and best practice, in the countries of Canada, the United States, and Mexico. http://www.dgsociety.org/ This includes access to the E- Government Master Library containing over 3000 references to peer-reviewed, English language works. This listing has been prepared and is maintained by the faculty and students at the University of Washington.

CIPFA

CIPFA's 'ICT and Business Transformation' information stream, part of its Technical Information Service (TIS), provides general advice and signposts to other information sources http://www.tisonline.net/informationtechnology/default.asp#themebrowser

Its publications and support include advice on delivering efficiencies through technology, shared services and benchmarking. http://www.cipfa.org/

See also Public Finance monthly magazine, Particularly 'Smart Thinking?' and online information
http://www.publicfinance.co.uk/

Other Useful Sources

Others useful sources include academic blogs, the Harvard Business Review, think tanks such IPPR and Policy Exchange that often link to a broader political agenda. Also, major IT suppliers including Microsoft , Oracle, McAfee, IBM and BT can be very helpful as some of their 'white papers' include useful research and information, but be aware that a lot of this material is simply 'advertorial'.

7. SUGGESTED GAPS IN THE RESEARCH/EVIDENCE BASE

Impact of Transparency and Open Data

It is clear from anecdotal evidence that the Government's transparency agenda has changed behaviours in public sector bodies and that the additional availability of data has generated further opportunities for scrutiny and data mining. It would be extremely useful to have an objective assessment of the short and longer term implications, together with estimates of the savings achieved and additional revenues generated for both the public and private sectors.

Historical Perspectives & Lessons Learnt

Because this is such a fast-moving area, there is an expectation that anything more than two or three years old is probably out of date and of little relevance. There has therefore been less focus on documenting the progression of developments and thinking, and the lessons learnt. The genesis of 'digital government' can be traced back to the late 1990s and since then it has evolved through 'e-government', 'transformational government' and SMART government, with billions of pounds being spent by central government, local councils, the NHS and every type of public service and third-sector organisation. Some of the changes have been very successful but many technology based programmes and projects, particularly in central government and the NHS have provided very poor value for money and received very adverse publicity. It would be very helpful to document, before this information is lost completely, the evolution of thinking, share the lessons learnt and seek to increase substantially the success rate of technology enabled public sector projects, sharing across and between different organisations and different parts of the public sector.

Digital Leadership

Anecdotal evidence emerging from discussions suggests that some chief executives and local politician are reticent about embracing the role of leading on digital issues. In many cases they appear to either 'sidestep' the role, preferring to pass enquiries to others, often the head of IT, or they tend to focus predominantly on one aspect, perhaps the use of social media, a particular project or website accessibility issues. Given that local councils today are very dependent upon digital information and technology to deliver services and to communicate, and that technology underpins/facilitates almost every area of change, especially high profile areas such as social care, welfare reform and improved efficiency, this should be a concern for the whole of the local government sector. This is an issue that is believed to be concerning SOLACE, the LGA and Socitm, who have had preliminary discussions about collaboration to improve digital leadership. Some initial research to understand further the concerns of chief executives/councillors would be beneficial, with the aim of seeing 'digital leadership' and understanding of digital developments as prerequisites for new leaders and important development areas for existing leaders.

Developing New Approaches to Research in this Area

Local government is facing a funding crisis that has become widely and rather melodramatically termed the 'jaws of doom'.[130] Based on analysis by the LGA,[131] there is a funding gap that starts at about £2.8 billion in 2013/14 and reaches over £14.4 billion by 2019/20, increasing on average by £2.1 billion per year. With social care and waste/recycling spending absorbing a rising proportion of the resources available to councils, funding for other council services is forecast to drop by 46 percent in cash terms by the end of the decade, from £26.6 billion in 2010/11 to £14.3 billion in 2019/20. For Birmingham City Council,[132] for example, this means that it will have to make savings of £825 million a year by 2017. As Councillor Sir Albert Bore, the Leader of Birmingham City Council, points out, cuts of this magnitude cannot be delivered by traditional efficiencies and savings.

As this report shows, increased use of technology alone is unlikely to provide the solution to these funding problem, it will however almost certainly play a major part in supporting and facilitating the types of transformational changes required. In this environment, it might be expected that that local government, collectively as a 'sector', would be commissioning research into how technology can be better used; learning from other sectors, sharing and piloting innovation and driving transformational change. Also, given the rapid evolution of technological change, it might also be expected that the focus of research would be on 'sprint'-type projects with short timescales that are focused on evaluating outputs, outcomes and business cases, building on local innovation initiatives and providing 'seed-corn funding' to evaluate the potential of new models and new ways of working. Research for this project has not revealed this type of thinking and planning on a scale consistent with the scale of the challenges ahead.

It is proposed that local government should review how it uses, commissions and evaluates research in this area with the aim of quickly establishing new models for driving greater value and relevance from research into the more effective use of digital technologies, with the overall goal of exploiting much more effectively the opportunities offered by digital working, the Internet and evolving technologies.

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