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CONNECTED COUNCILS

A DIGITAL VISION OF LOCAL GOVERNMENT IN 2025

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Summary

This paper outlines the opportunities that digital technologies offer local authorities to deliver better outcomes for local residents, businesses and communities. It sets out a vision of where councils might be in 2025 to better understand what opportunities they face now. While the sector has made considerable progress in moving transactional services online, most councils have a long way to go to deliver smooth, frictionless services and fully digitise their back offices. Digitisation isn't just about developing digital services; depending on the level of ambition, digital tools can help transform labour intensive caring services, contribute to faster local economic growth, renew local democracy – and ultimately, change the way that councils organise themselves and manage their resources.

2025 VISION

Seamless services (Chapter 1)

In 2025, almost all transactions take place online. Seamless integration across all government services means that users verify their identity once, through voice- or thumbprint. Where beneficial, there's instant data sharing across services unless people explicitly opt out. Two-dimensional council websites have been replaced by interactive digital platforms that connect users with third-party apps and services, and stream personalised content on local democracy, jobs and services. Digital platforms have helped councils become enablers instead of direct providers of most local services.

Relational services (Chapter 2)

Services that are about fostering connections between people – such as eldercare, social care and childcare – still rely on face-to-face contact and can't be digitised. But digital technologies are being used to support these sorts of services: new tools are helping people to manage their own long term conditions and connect to a broader network of support - such as peer mentors, health coaches, friends and family, volunteers and group-based activities. Meanwhile, many services have been revolutionised by predictive algorithms, which allow councils to intervene in a more timely and effective way.

Place-shaping (Chapter 3)

Digital technologies have helped councils take a more ambitious approach to place-shaping. The last decade saw councils use the twin opportunities of digital and devolution to grow their local economies. Greater transparency and use of challenge-based procurements have dramatically widened the pool of providers and ensured that a larger share of public contracts go to high-growth SMEs. Councils systematically engage residents in decisions about how services are commissioned, delivered and evaluated. Some have crowdsourced contracts and made real-time performance data a condition of winning public contracts. Local residents also decide how money is allocated: a chunk of council spending is decided by online participatory budgeting.

How councils work (Chapter 4)

Like the best tech companies, councils are lean, agile and data-driven. Acting as brokers or enablers, they sit at the centre of a large web of innovative partners, providers and community groups. Multi-agency working is the norm; teams and departments are temporary structures that form around specific local challenges. A truly mobile workforce has freed up public space. Councils use digital platforms to share public space, equipment and even workforce time with other councils, businesses and residents.

To realise this vision, we recommend that:

1. Councils become digital by default, moving all transactional services online and fully digitising their back offices by 2020.
2. The Cabinet Office should bring together key local government actors to define - and continuously update - open standards for data for the whole public sector.
3. Leading councils should come together to create a market for new digital products in cases where local authority needs are not currently being met by off the peg solutions.
4. City regions should be required to establish an Office of Data Analytics (ODA) as part of devolution settlements. The ODA – modelled on the Mayor's Office of Data Analytics pioneered in New York City – should be tasked with helping city leaders and public bodies bring together and analyse data to support regional economic growth and local public sector reform.[1]
5. Councils should invest in accessibility, by providing online and human navigation support to help people use digital services in public spaces such as libraries and jobcentres. They should also ensure that pathways between different services are seamless, jargon free, and that people with different digital needs are appropriately 'triaged'.
6. The Cabinet Office should review and publish detailed guidance on the ethical dimensions of data sharing and algorithm-supported decision-making.

1. Introduction

Local government is at a crossroads. With the Spending Review and the Local Government Settlement, councils face both the challenge of budget cuts and the opportunity presented by devolution. Digital technologies are no panacea – but they do provide part of the answer to the challenges faced by local authorities.

Councils have already made significant cuts over the past five years with many council leaders now saying that there are no more efficiency savings to be made.[2] Future cuts will force councils to scale back or entirely exit from some fields, rely more heavily on families and communities, or radically restructure services towards lower cost models. The cuts are likely to be spread very unevenly; while overall funding is set to fall by less than 7 per cent, some councils will find it hard to offset the 56 per cent reduction in the central grant with increases to council taxes or the ability to retain business rate revenues.

Even without the immediate threat of cuts, rising demands on the social care budget as a result of the growth in the over 65 and over 80 population is projected to make social care budgets unaffordable, all else being equal. For some, the prospect of financial collapse looms on the horizon.

Many councils have already transformed the way they provide information and how they manage transactions – it's never been easier to pay council tax or find information about local services online. However, the opportunity of new technology is much greater than digitising information and transactions. Applied intelligently and accompanied by more efficient ways of working, digital technologies offer an alternative to across-the-board efficiency cuts. And digitisation offers significant rewards: council services that can be accessed seamlessly in the real world and online; fully digital back office processes; knowledge-driven services; a genuinely mobile workforce; services that are responsive in real-time; IT systems that enable data sharing across organisational boundaries, and front line workers who are able to focus on supporting citizens rather than paper-based admin.

Many local governments around the world are already pioneering new uses of digital technology – New York City was the first to truly open up its data and use data analytics to improve services,[3] while Copenhagen has revolutionised services with 80 per cent of transactions now happening online.

For councils in England, the next generation of digital changes can help in four main ways.

1. Further simplifying services by moving transactions online and automating back offices.
2. Helping labour intensive services – such as eldercare, social care, and childcare – save costs and deliver better outcomes for service users by: intervening earlier, helping people manage their own conditions, and engaging a broader social network to provide care and support.
3. Enabling councils to shape places in ways that were previously impossible, especially by engaging citizens in new, more meaningful ways and helping the local economy to grow.
4. Radically transforming the way that councils work – including how they organise internally and manage resources – to become open, innovative and collaborative organisations.

Of these, the first is a continuation of what has come before, while the remaining three are more radical. Depending on the level of councils' ambitions, the potential impact could be significant.

Financial savings

As part of this research, Nesta commissioned Social Finance to model likely cost increases from demographic change, and project how much could be saved from digital. Based on best in class case studies compiled by the Local Government Association and original case studies, the model shows that if average savings from digitisation programmes can be replicated across local government, an average unitary council could save up to 13 per cent of its total budget by 2025, compared to the status quo. This is a conservative estimate, as it assumes the fundamental business model of councils remains unchanged.

For ambitious councils willing to transform everything they do (from procurement to how they organise), the potential savings could be much greater – up to 40 per cent, according to some estimates. And the real impact is likely to be for residents and the workforce in greatly improving the quality and efficiency of services and taking pressure off frontline staff.

2. Creating seamless online services

The most visible impact of digital technologies has been in moving basic transactions online. In the current financial climate, there is huge appetite for making savings through 'channel shift' – serving customers through online services instead of more costly telephone and face-to-face interactions.[4] It has been estimated that moving all transactional services online – from paying a fine, renewing a parking permit and applying for a passport, to submitting a planning application – would save the government between £1.7 and £1.8 billion every year.[5] Similar estimates for local government savings from digitising have been equally promising: Socitm estimated that the average cost of digital transactions was 15p in comparison to telephone and face-to-face costs of £2.83 and £8.62 respectively.[6]

The sector has seen significant progress. The majority of resident and council contact is now digital.[7] A number of councils have achieved considerable success. The London Borough of Harrow, for instance, has saved £1.55 million by moving transactional services online.[8] Other examples such as online schools admissions have improved the quality of service for parents, even though they haven't delivered significant cashable savings.[9] But for the most part councils have digitised transactions in isolation, independently reinventing the same wheels, and creating a digital replica of outdated existing processes or shifting the bottlenecks elsewhere. Many departments remain unable to share data easily or are reliant on manual processes to make sense of 'digital' transactions. For instance, more than 50 per cent of councils are manually re-keying over half of the data they receive from e-forms.[10]

Meanwhile, residents' expectations of local government digital services have soared. People are becoming far more accustomed to doing the bulk of activities – from banking to shopping – online. The growth in the use of mobiles to access websites and services offers new challenges: the Socitm Better Connected 2015 survey found that the lack of mobile accessibility is a major barrier to accessing local services. And while the next ten years will see a significant fall in the number of people without basic online skills,[11] groups with low levels of literacy, digital literacy or limited internet access remain at risk of exclusion.

Most councils have a long way to go simply to ensure that all basic transactions can be carried out smoothly across different digital devices. But to meet the rapidly evolving needs and expectation of residents, while realising the cost-saving potential of channel shift, the next phase of digitisation will have to put three emerging trends centre stage:

- **Delivering more seamless and personalised services** that use personal information – such as location data, search history, profile data – to customise local and hyperlocal information about public services, jobs and volunteering opportunities, local events and news, and decisions taken by local governments and local councillors.
- **Making greater use of design tools** to uncover blockages in user pathways, and ensure the needs of different groups (including those with limited digital proficiency) are being met.
- **Digitising the back office** to ensure that data and capabilities can be shared across services and that outwardly 'digital' services don't rely on manual or extraneous processes.

2025 LANDSCAPE

Key services – including planning and infrastructure, transport, waste and recycling – are data-driven and highly responsive to the populations they serve. Ubiquitous Internet of Things sensors enable councils to target resources more efficiently – based on need. Residents' devices send information on the built environment and feed into real-time maps on pollution or traffic.

All transactions such as paying taxes or applying for licenses take place online. Two-dimensional council websites have been replaced with **digital platforms** which enable residents and businesses to access services and connect to other users. Logging in with thumb, voiceprint or password, residents can check the status of their social housing applications, receive personalised recommendations on voluntary opportunities, search schools for their kids, or report vandalism.

Platforms enable information and services to be highly personalised to the individual resident. Connections to other websites pull in information on all past appointments and interactions from dentistry and health clinic visits to school reports and information about renewing parking permits. Algorithms use browsing history and cookies to tailor content to user behaviour - including medium, language and extra support such as chat windows. A personal dashboard streams Amazon-style recommendations for local events, voluntary positions, jobs, homecare, distance learning opportunities, local businesses and other services.

These platforms also link to an ecosystem of **third party apps** – for everything from sharing tools to volunteering to social meetups – and paid-for services, such as dieticians, personal trainers, and tutors. These services play an important role in reducing demand for public services, and are therefore subsidised – or at least endorsed – by councils, who play an important role as brokers: linking to evidence on and signalling what third party support people can benefit from.

Digital exclusion is now less of a concern: information on digital platforms is adapted for people with language and literacy difficulties. And, councils also ensure that groups with limited digital proficiency have access to in-person navigation support and round the clock internet access in libraries and community centres. Kiosks for carrying out basic transactions talk people through how to scan identity documents and connect to video chat if people need it.

The back office is fully digitised. Many administrative functions are fully automated. Council departments and services – and often partners too – share a digital platform, so much of their data is shared instantly. All software is interoperable, and open standards mean that all other data can be easily shared.

Martin's story – A Day in The Life in 2025

Martin is in his 70s and far from being a 'digital native'. His former job as a bus driver didn't require him to use a computer and he was never taught how to use one. Though he's been using a laptop at home for over a decade he still finds them unintuitive and confusing. He's also concerned about putting his personal information online and doesn't use online banking.

His local authority has moved all of their transactional services online. He has to pay his council tax and buy his parking permits online. At first this made Martin's life difficult, but the council's 'IT Help at Home' service was really useful for him. The volunteer who visited showed him how to be secure online and set up regular online payments so that he doesn't have to pay manually each month. A fingerprint reader was installed on his laptop meaning that he doesn't have to remember multiple passwords, and feels more secure about using the council's service. He feels reassured that if he's unsure about submitting personal details or documentation, he can connect to a pop-up or video chat through the council website.

His personal portal on the council website has some clear and simple tick-box options about personal data storage and sharing, so that Martin was able to choose what happens to his information. It also has a timeline of things he might find interesting or useful, like a local exercise class for retirees or opportunities for him to vote online on how funding for some council services is allocated. Depending on which links he clicks on and how long he spends reading each article, an algorithm optimises his timeline so that it becomes more relevant to him.

Digitisation has meant that there's now much greater integration between the council's services. For example, if Martin doesn't put his rubbish out for two weeks in a row, this is automatically registered on the council's system through the sensors in his bins. The integrated system knows Martin is in his 70s and has mobility issues, so automatically generates a notification for his GP that Martin might need support. From this his GP can make a quick phone call to check everything is ok.

Digital platforms

People can already do a huge amount online, from paying council tax to ordering new parking vouchers. The next phase of online council services will integrate more seamlessly with other digital services, including the GOV.UK platform. And instead of a static website, council digital services will be modelled more closely on digital platforms such as Amazon, Facebook or Spotify. They will connect people to others with similar profiles, provide recommendations specific to their needs, and allow for a more interactive, personal experience. As communications experts observe, improving the 'feel' of digital services is key to ensuring that people don't feel alienated by channel shift.[12]

Much of the work to consolidate personal information across different services is being led by the Government Digital Service (GDS). For instance, through its GOV.UK Verify service, GDS is working towards a single secure platform to verify people's identity when they access a multitude of different government services, such as getting a driving license or claiming Universal Credit. In time, all citizens will have a personal account on this platform (much like people's online banking accounts) which will store their personal information and can be used to verify their identity. In the future, and subject to the appropriate consents, this service could evolve so that information stored on this account could be shared from one service to another to avoid duplication of effort – for example, so that people's identities can be checked easily from one service to another.

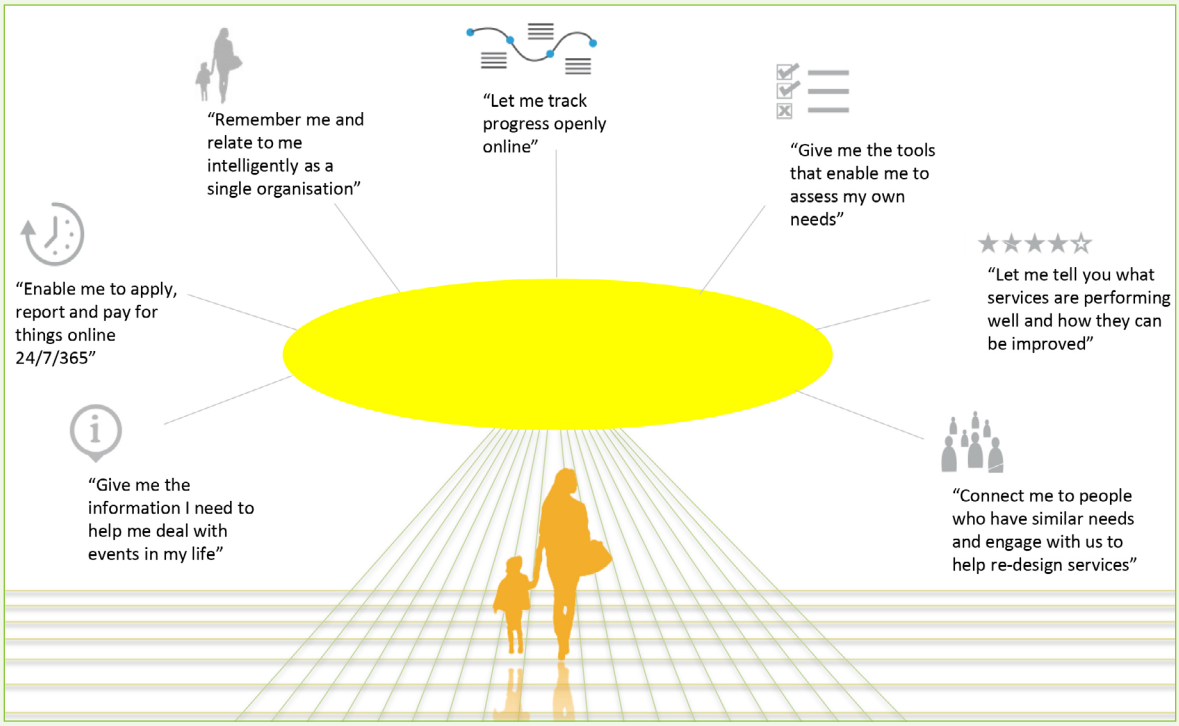
Meanwhile, councils are also working to ensure that residents can navigate local services seamlessly. One especially promising example is **MyHarrow**, a mobile-friendly personal account which shows all council services in a single view. People can access their personal data. A web chat 'pop up' supports citizens having difficulty using online services. Harrow Council has virtually eliminated 'failure demand', with 92 per cent of queries resolved at the first point of contact, 30 per cent of transactions are through mobiles, and it has saved £1.55 million in four years by moving people from face-to-face or phone to online transactions.[13]

The next step will be to deepen the ways in which people can customise their accounts, allowing people to, for example, set their preferences for how practitioners access their data or suggest amendments to public records. Collaborative platforms could allow service users to access and modify records kept by service providers. For instance, FutureGov has developed a collaborative platform for Family and Community Services in New South Wales, which allows caseworkers, carers and young people themselves to share real-time data about their journey through the care system.[14]

And, like online retailers and entertainment providers, local government could use algorithms to customise individual content based on profile data, clickstream analytics, and search and stream history. For example, New York State's **Local service** uses location data to show people a seasonal image of where they live, and customises the homepage with information about local jobs and attractions. Ultimately, local government could offer more personalised, Amazon-style recommendations that connect people to relevant public and private apps and services, or to other users with whom they can collaborate to design and deliver services. For instance, they could host an ecosystem of third party apps that help people get more out of their local area, such as **Casserole Club** (which links elderly people with neighbours willing to share meals) or **MoveMaker** (which lets people swap social housing).

Figure 1 depicts Bristol City Council's vision of how personal platforms could become the jumping off point for people to engage with their community and local services.

Figure 1: **Personal Platforms**



Source: Bristol City Council

Digital platforms could ultimately allow government to change its business model from provider to broker: signalling what services exist and helping people understand which of these suit their needs, instead of providing them directly.

Clearly, as more data is shared among government agencies and with third parties, there is a need for greater public consultation on the use of personal data. Local and national governments will have to walk a fine line between sharing enough data (and with enough agencies) to accrue considerable benefits, without alienating citizens - some of whom are resistant to the idea of data sharing, as was clearly demonstrated by negative reactions to Care.Data, a national programme to collect health and care data.[15]

Addressing digital exclusion through user-centred design

When digitising transactions, councils need to ensure that pathways through and between services are smooth and frictionless – it's not enough to have a service nominally available online, if this creates barriers to access elsewhere. According to Socitm's Better Connected 2015 survey, which analysed user journeys from the ease of finding a service to dealing with problems, over half of councils rank poorly (one or two stars out of a possible four stars) for key transactions such as renewing a parking permit or applying for free school meals.[16]

One challenge is that little is known about the unintended consequences of digitisation. For instance, GP appointments could be booked up before they can be accessed by people without round-the-clock email access because they are automatically released at the start of the day, which is 12.01.[17] Online services need to work for everyone, including those who have mixed needs, or limited skills (e.g. they may use a smartphone for social media but not be used to paying a bill online), or limited access to the internet.

Most councils are already providing assisted digital services, including computer and internet access, through libraries, for example. Several councils, such as the East Riding of Yorkshire, have introduced self-service kiosks that allow customers to report missed bin collections or make council tax payments. Sunderland has introduced a Community In-reach team to improve digital literacy in communities, by working with voluntary and community organisations and GPs to have a broader reach.[18]

To address the more complex dimensions of digital exclusion, service design approaches show particular promise. Ethnography and user journeys can generate new insights about user needs and rapid prototyping with service users can be used to test ideas in practice. For instance, Lewisham Council's work with the Design Council on emergency housing found that users couldn't easily find out whether they were entitled to support.[19] A digital team in California recently discovered that the food stamps (SNAP) programme couldn't be accessed online at night (precisely when people wanted to access it), logged people out automatically if they took too long (penalising those who find filling in forms difficult) and required people to upload identification in .tiff format (which is obscure to most people and out of reach for people whose only scanning facility is their phone).[20]

Deeper insights about how people use services will allow councils to provide timely support that meets user needs. This might be a chat window that pops up if people are having trouble or algorithms that present content in different languages or mediums based on profile and clickstream data. It also means that pathways between digital and physical space need to be

smooth and frictionless. For instance, Bristol has modelled its reception areas on the common set-up of a bank where staff welcome visitors and direct them to kiosks, the reception desk, or more personal consultations in private rooms.[21] Triaging people according to their needs can improve the quality of services and cut costs by reducing failure demand and ensuring that people use the least costly channel possible.

Digitising the back office

Digitisation can happen at varying levels of ambition and scale. Many councils have automated single transactions, such as council tax payments and waste permits. Few, however have fully digitised their back office. The risk of this piecemeal digitisation is that it fails to fix the underlying digital architecture and workflow – creating a digital 'copy' of existing processes and reinforcing siloes instead of remodelling the organisation for the digital age.

More ambitious approaches seek to rewire workflow and break down siloes by integrating and streamlining the back office. For instance, Lloyds Banking Group designed an integrated automation programme which achieved annual savings of £353 million, and a 7 per cent reduction in costs by reducing the number of business processes from 700 to 23 and streamlining activities such as transferring money and closing old accounts.[22]

BOX 1: LOCAL GOVERNMENT AS A PLATFORM?

The term 'government as a platform' is currently gaining a lot of traction. In fact, the concept has been around for decades. It was originally used to describe government's role in connecting individuals with services – training opportunities, care providers, dentists, etc. – instead of providing these services directly.

Technologists often use the term to refer to digital platforms on which people can either build or do things. Examples include Ebay, which enables people to sell things, or Apple's iOS, on which people can build apps.[1] For instance, Tim O'Reilly used the phrase *"government as a platform"* to refer to the way that digital technologies allow government to *"harness the power of its users to…co-create its offerings."*[23] The platform encourages innovative suppliers to build apps and products – creating an ecosystem of goods and services that can be traded.

More recently, it has been used in a much more narrow way by the Government Digital Service, to refer to an approach where digital teams buy or build common components that can be shared across departments or services, to move away from legacy IT contracts. Some technologists have used the term 'local government as a platform' to describe a certain type of modular, flexible type of digital infrastructure that allows for an iterative approach to IT procurement. Instead of proprietorial systems provided by large IT companies, this modular approach allows councils to bolt together an IT ecosystem based on software components from inexpensive, cloud-based providers.

A number of councils have adopted the term in subtly different ways. For instance, Bristol is using the term to describe its vision of becoming a 'Citizen Centred Digital Council'.[24] Leeds City Council is focusing on the concept of 'place as a platform', which aligns different service providers towards shared outcomes – for instance by bringing together local tech companies and community organisations to collaborate on apps to help elderly residents.[25]

1. The idea is similar to Henry Chesbrough's concept of 'open innovation' described in his book of the same name, published in 2003. Chesbrough used the term to describe a new model of product development based on the free flow of information and ideas between departments and organisations.

An especially promising example of this approach in local government comes from Adur and Worthing councils. Working with the consultancy Methods Digital, the digital team mapped capabilities that all services across the councils need (from taking payments to maintaining customer records) and then bolted together software components to meet these needs from inexpensive, cloud-based providers. This is sometimes described as the 'government as a platform' approach, as it provides a platform on which digital components can be layered. But the terminology of government as a platform can be confusing, as it's used in a variety of ways (see Box 1).

In theory, digitisation can go one step further: seeking to emulate organisations that are digital at heart, instead of organisations that have had to digitise. Technologists suggest that councils could learn from platform-based digital companies, such as Amazon, Spotify or Uber.[26] These tech companies use digital tools to help the workforce communicate and collaborate effectively, drastically reducing layers of management and hierarchies. They are also rigorously committed to using data to understand their market. And their core offering is a more interactive relationship with their client base.

Some public bodies have been taking steps to reduce layers of management and hierarchies, borrowing these principles from tech companies. One outstanding example is the Dutch community nursing programme called **Buurztorg** (Box 2). Set up in 2006, the network now consists of 9,000 care workers operating in small teams of 10-12 staff. Buurtzorg's decentralised and distributed organisational model depends on its digital platform, Buurtzorgweb, which enables nurses to share advice and evidence instead of having to rely on managers and support services. By reducing management and back office costs, and empowering frontline workers, Buurztorg has saved 40 per cent off the cost of care, improved patient satisfaction and staff retention. As Mark Thompson has argued, models such as Buurztorg represent the future of digital platforms: frontline staff supporting one another to virtually eliminate the back office. If Buurztorg were applied to the UK, it would mean 23,000 back office staff support 5.3 million public sector workers and could save up to £35.5 billion.[27]

Another model, known as holocracy, describes an approach where circles of peers review one another. Job descriptions and team structures are continually reviewed and changed. Washington State's technology department is the first public sector experiment with holocracy, but depending on results (which are being reviewed by the Harvard Business School) the state government will consider rolling out the model. Already, results show that the collaborative environment has attracted people from the private sector and helped with the department's recruitment challenges, suggesting that working culture can be an important lever to attract talent in the absence of private sector salaries.[28]

BOX 2: BUURTZORG - A DECENTRALISED AND DISTRIBUTED NETWORK OF HOMECARE NURSES[29]

In the 1990s, community nursing in the Netherlands shifted from a neighbourhood-run affair to a centralised system focused on targets and efficiency. Patients and nurses were unhappy with this change; patients faced a high turnover of nurses and the need to retell their medical history each time and nurses felt dehumanised and frustrated by not being able to get to know their patients or exercise their professional judgement.

Buurtzog was set up as a social enterprise in 2006 by a community nurse as an antidote to this model. It has grown rapidly over the last decade. The decentralised network now consists of 9,000 care workers operating in distributed teams of 10-12 staff. These teams manage their own workloads and are financially accountable so there is little need for management - the only 'managers' are regional coaches who are there to support, not direct, decisions. When nurses need expert advice, they first post a question on the network's digital platform, Buurztorgweb. If the problem can't be solved, they might pay for advice and this is then shared across the broader network.

There are three main elements to Buurtzorg's success:

- **Radically reducing management and back office costs**. By distributing responsibilities from the centre to teams, it reduces management tasks of estate management, human resources, quality control etc. There are just 47 back office staff members servicing the entire network. Buurztorg spends 8 per cent on overhead costs, compared to industry norms of 25 per cent.
- **Harnessing collective intelligence of the network**. The platform, Buurztorgweb, allows the network to realise economies of scale by: generating detailed data on problems and solutions, requesting and sharing advice, and sharing software for practices such as logging care hours.
- **Improving patient care**. Nurses spend more time with patients in each visit than their competitors. Instead of narrowly focusing on contractual requirements, they focus on building relationships and meeting their needs, whether emotional, relational, or physical. For instance, a nurse might arrange a visit from a hairdresser because his elderly patient is avoiding social contact because she is ashamed of her appearance. As a result, the overall number of hours of care that a patient receives is much lower.

The table below maps these different approaches to digitisation onto the different types of savings – or economies – that can be made to give a sense of the ambition and rationale behind these different approaches.[30]

Table 1: **Savings achieved through digitisation**

Approach	Rationale	Type of saving	Examples
Automate individual processes	Moving from paper to digital for sales, payments, budgets, events etc.	Economies of trimming (efficiency savings)	Electronic filing; automate single process such as ordering goods (green bins, parking permits), making payments, booking an appointment, requesting a license/authorisation.
Digitise processes across organisation	Reduces bottlenecks and creates economies of flow	Economies of flow (reducing bottlenecks)	Move to cloud-based software such as Google Apps for all workforce; digital help-desk.
Digitise organisation	Enables organisations to share data, components	Economies of scale (aggregating back office functions) and scope (combining multiple functions)	Buy or build digital components that can be reused across different departments (e.g. Government Digital Service; Adur and Worthing council)
Business model built around digital platform	Replace traditional management and back office processes with peer-to-peer or crowdsourced accountability	Economies of visibility (mobilising public eyes); economies of responsibility (passing responsibility to citizens)	Airbnb, Uber etc. – constantly harvesting and learning from data, new business models based around empowering workforce or users (and blurred lines between the two groups). Some new organisational models, e.g. distributed and decentralised models such as Buurtzog share elements of digital business models.

As part of this research, Nesta commissioned detailed financial modelling, carried out by Social Finance, to explore the potential size of the prize available to councils through digital transformation. This estimates that digitisation could save councils somewhere between 2 and 13 per cent of their annual expenditure.[2] This is based on replicating current best in class examples of digitisation across all aspects of council services, using the budget of a unitary council as a baseline. However, this is a relatively conservative estimate since it assumes that a council's business model doesn't change as a result of digitisation. For the most ambitious councils that use digitisation to transform the way they work, the potential savings could be much greater – as much as 40 per cent. And as the Buurtzog model shows, dramatic savings can be achieved together with significant increases in the quality of care and staff satisfaction.

2. These estimates are based on work carried out by the LGA and others to cost out the impact of using specific digital tools and technologies in a number of settings in both the UK and abroad. These case studies were fairly conservative in their estimation of the financial benefits of using digital tools. However, not all of the uses and tools covered through these case studies could be used at the same time or across all services. This modelling should therefore only be taken as a very illustrative estimate of possible savings rather than a prediction, as it both over- and underestimates possible savings.

Conclusion

Councils have made a great deal of headway in moving basic transactions – from reporting missed bin collections to ordering parking permits – online. To fully realise the cost saving potential of digitisation and meet the demands of residents, the next phase of digitisation will have to redesign services from end-to-end to ensure that user pathways are smooth and frictionless and that the workforce can share data without having to resort to manual processes.

Digital exclusion remains a significant issue. According to the ONS, 6.7 million adults, or 13 per cent of the population, have never used the internet.[31] It is important to realise that this problem will get better with time, as more and more people become familiar with technology and today's digital natives become tomorrow's service users. But, it's imperative that human support is available when services are moved online. In addition, councils should continue to provide access to free Wi-Fi in public spaces – such as libraries and jobcentres - along with support staff or volunteers to help people use digital services.

To meet the growing needs of residents, council websites will have to become less like static, two-dimensional objects and more like digital platforms such as of Facebook or Airbnb. This development could offer considerable opportunities for councils to engage more actively with citizens, either by encouraging them to play a greater role in designing and delivering services, or by being more active in local development and democracy. We turn to these themes in the next two chapters.

3. Supporting relational services

Some services are more difficult to digitise because they rely on face-to-face interaction and are about fostering connections between people. These are what we call 'relational' services and include eldercare, childcare and social care. They are necessarily people intensive and therefore costly. These relational services already make up a large proportion of council budgets – and will continue to do so as a result of demographic changes and an explosion in long-term conditions. In the case of eldercare and adult social care, financial forecasts are so bleak that councils will need to rethink how services are designed and delivered.

Here too, digital technologies provide some hope. For relational services, digital technologies are already being used to deliver better outcomes for service users, their families and frontline staff, and to cut costs. There are three main ways in which digital technologies could be deployed in the future to support more relational services:

- Digital tools can be used to **help people manage their own conditions**, co-produce their care and engage their wider social support networks in delivering that care.
- Digital technologies provide **opportunities for mobilising the power, collective intelligence and energy of local people** in providing care and support, thereby improving social outcomes.
- Digital tools for collecting and analysing data could help service providers to **intervene earlier and move towards preventative services**, resulting in both better outcomes for clients and users, and lower costs for councils.

The last use is particularly interesting. While the benefits of prevention and early intervention are widely recognised, it has been difficult to establish these kinds of services with existing policies, budgets and institutions. New data analytics tools – such as predictive algorithms - could make this much easier for councils: helping to identify individuals at risk (e.g. of abuse, neglect or homelessness), allowing service providers to intervene before a crisis hits, and helping strategy teams plan for the needs of changing populations.

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Services have changed considerably over the last decade. There's been wholesale integration of health and social care and there's a greater role for private and third sector providers in the delivery of services. It's also much more common now to see volunteers and family members providing care alongside employees. Through personal budgets, people have far greater autonomy to pick and choose what kind of care they want.

Many councils have been **pioneering new uses of technology to empower people to manage their own health conditions**. People now have access to myriad tools for self-management and prevention. Some early adopters have embraced personal robots that play games, carry out basic care functions, or provide sensory stimulations. But most have found that the role of AI in the home is limited to voice-activated intelligent personal assistants that guide people through basic processes, such as making tea and Skyping their children. Assistive tech and telecare - such as distance monitoring, bedside, wearable, image and audio sensors measuring everything from sleep to stress or falls - is widespread.

Initially, the rise of tools that help people stay independent for longer was heralded as a solution to social care challenges. But local authorities found them less successful than initially anticipated, and that people were being sent back to residential care settings. It soon became apparent that technology alone was not enough to help people make substantial improvements; people needed social and emotional support from friends, family members and wider social networks, as well as physical support.

Tackling endemic isolation amongst the elderly has also been the subject of national and local campaigns that have promoted volunteering and social action. Thanks to such campaigns, as well as more flexible working patterns and employer supported volunteering, it's now much more commonplace for **employees to volunteer alongside their work**. Also, as baby boomers have reached retirement age, expectations and norms of what retirement should mean have gradually shifted. Retired professionals offer their time – for instance retired health workers provide care and training to volunteers – and this has also helped to change attitudes towards the elderly. The new wave of pensioners are constantly on the lookout for opportunities to continue learning and developing their skills. With many baby boomers owning their own homes and possessing a relatively high standard of education, many are looking to unlock the potential of their property for social good or to reduce their isolation. For instance, elderly people offer rooms to young people in return for basic chores.

In 2025, the majority of people are involved in some kind of social action – either volunteering in their local communities, helping family members or neighbours with everyday tasks and care, or taking part in local community or neighbourhood groups. Nearly half the population is involved in providing care and support or regular volunteering.

Community groups have developed a host of tools that reduce barriers to volunteering, such as apps that allow people to find opportunities or give small pieces of time. The role of local authorities has been fairly minimal; most councils simply provide guidance and support to would-be volunteers. They also ensure there is transparency about the commitments on offer, and provide rewards – such as Civic Points which volunteers can redeem on some local public services and activities. Local publicly owned buildings are shared spaces, so voluntary and community groups can use them for free when they are not in use.

Organising events and raising money for dedicated campaigns continue to be popular activities, but in recent years there has been a steady rise in the number of volunteers supporting the elderly, and volunteering in hospitals. More volunteers now carry out home visits and take part in befriending activities. Employing behavioural insights, councils have run targeted campaigns to raise participation levels in particular neighbourhoods with high levels of need and low levels of social cohesion.

Dedicated data analytics teams using new tools like advanced intelligent systems and predictive algorithms have **improved councils' diagnostic, forecasting and predictive capabilities**. Service providers identify those at risk and help to create targeted, bespoke interventions – including behavioural insights. The ability to identify at-risk groups much earlier has helped make it easier to shift resources towards prevention. For instance, predictive algorithms flag groups likely to be in need of care in the medium term, so that they can be supported early on with home adaptations, information and social support. Instead of waiting for problems to emerge before responding, social services act proactively: for instance by providing intensive parenting support to new parents flagged for child safeguarding concerns at birth.

Initially, the use of predictive risk models – especially to identify children at risk of abuse or neglect at birth – was criticised for stigmatising people who hadn't done anything wrong. In order to gain public trust, councils worked with users to explain how algorithms can ensure people get the support they need to live happily and independently. Internally, councils worked with machine learning experts to create training programmes for practitioners and frontline staff to explain the limits and deficiencies of predictive modelling. The emphasis has been on using predictive modelling to support professional judgement, rather than replace it. And they created new roles for data scientists with ethics and social policy backgrounds, whose responsibility is to protect the vulnerable.

Lizzy's story – A Day in the Life in 2025

Lizzy is a new mother in her mid-20s. She works part-time and has a history of depression and alcohol misuse. She was taken into foster care when she was 11 after her mother's drug use became so severe she could no longer care for her.

When Lizzy was pregnant, she was identified by the health service and local authority integrated care predictive model as someone who might benefit from additional support before and after the birth, due to having been taken into care and experiencing substance misuse problems. She attended a session with a social worker from the Early Support Team, though she was nervous and concerned that she was being unfairly targeted.

At the time she was receiving therapy for depression but had stopped drinking completely a year previously and didn't feel she needed any other support. The social worker reassured her and offered her information about some apps and online communities where she could find other parents who had similar experiences. Lizzy was also given contact details for a voluntary social care support service if she decided she needed it.

After the birth of her daughter, she felt isolated without a traditional family support network. This left her feeling stressed and anxious, and she worried she might turn to alcohol. She started using the apps recommended to her before pregnancy and found an online community of other parents who had been in care themselves. Through this she was matched with a peer mentor who she met with regularly over video calls. These sessions provided her with advice and reassurance.

She started using an app which enables matched volunteering with people in her neighbourhood. In exchange for dog-walking for her neighbours during the day-time she receives help with childcare during the evenings, enabling her to go to a local college to study for a vocational qualification.

Lizzy kept all her appointments with her health visitor, and agreed for information to be shared with the early support social work team. They were able to keep track of how she was doing without being invasive. The social workers combine their professional judgement with a predictive-risk algorithm to assess whether any additional support might be required, but are happy that Lizzy has been developing her own support network and there is no need for statutory involvement.

Self-management of conditions

Digital tools can support self-management by enabling people to better manage their own care, or to better involve their wider social support network. Putting this into practice means councils will need to consider how services are commissioned and the role of personal budgets. They will also need to think about how services are delivered, how they integrate with other public services such as health, and what it means in terms of structures of governance and accountability, internal management processes and skills needed by the workforce.

One type of digital tool that can support self-management is a personal data account (or personal data store) which enables users to add or edit content. Estonia and Denmark's electronic health records are often held up as exemplars of collaborative personal accounts. Estonia's Electronic Health Registry gives doctors access to test results and data from multiple sources. Although patients can see a different set of information, the Patient Portal provides options to customise privacy settings. Denmark's health record has been a success story in working with the public to give them control over their data choices. Citizens can search for GPs, access lab results, see their medical records and treatment choices online, and join chat rooms to consult with health professionals.[32]

Numerous apps now enable people to monitor their own blood pressure, remind them to take their pills, talk them through their daily physio exercises, track their physical mobility or provide support for anxiety and depression. For example, Big-PD by **uMotif** tracks the movement of people with Parkinson's Disease to alert them when their medication is starting to wear off. The aim is to enable people to self-medicate more effectively.

Other tools enable people to draw on their wider social support networks. One example is **HomeTouch**, a tablet-based interface that offers communication tools for patients, carers and family members, including messaging and video calls, and allows access to medication reminders, mood-tracking, and emergency carer calling. **Patients Know Best** is one example of a patient-controlled health record which includes a 'circles of care' tool that connects patients with their wider support network. One of the strengths of this tool is that it maps onto the NHS system; and patients control who can see their health data. Other tools such as **Jointly** and **Mindings** allow carers to share calendars, divide up tasks and message one another.

Digital technologies also provide myriad spaces and tools for peer-to-peer support – connecting people with the same long-term health conditions. One example is **Beyond Boundaries** by Body and Soul which allows peer-to-peer support for young adults with HIV. The project enables peers to support each other through the everyday, with more or less support as they need, and at a time that's convenient to them.

Behaviour change can also be supported through digital tools. One good example is the **Alcohol Relapse Prevention Programme by d2 Digital**. Through the platform, people leaving rehab are sent text messages every day to track their progress and support their recovery. Depending on their response, they'll either get a personalised motivational text message or a phone call from a peer or professional. Such interventions have proved highly effective, significantly reducing the number of relapses.[33]

Engaging people in public services

Mobilising public time and energy in public services will require changing attitudes towards social action and attracting new people to volunteering. In some cases this will require changes to working patterns and new ways of recognising the value that's created by volunteers. Partnerships with a broad range of civil society organisations will also be central to attempts to promote new and diverse forms of social action in local communities. At the same time, digital technologies could provide new opportunities to engage volunteers, and allow new forms of social action to emerge.

Some websites, such as **Do It** and **Slivers of Time** match volunteers with volunteering opportunities in their local areas. Other sites target specific groups. **Vinspired**, for example, provides volunteering opportunities for young people. Other tools, such as **VolunteerSpot**, help to support and co-ordinate the work of volunteers. These tools support charities by creating a pool of ready volunteers, alongside more flexible opportunities for volunteers. Volunteers are vetted and matched with opportunities based on their skills and experiences. Councils will need to be mindful of those who have limited digital skills or access to digital technologies. This should encourage councils to consider other ways of attracting and engaging volunteers. Options include working with time banking agencies, such as **Spice** or **Echo**, which enable volunteers to earn credits that can be used on local services and businesses. Councils can also support initiatives that encourage volunteering such as **Good Gym**, **Sunday Assembly** and **Locality**, which provide opportunities for social action through exercise, secular congregations and community projects respectively.

Online methods will need to be combined with more traditional offline methods – such as training volunteers to support their peers. One example is **My Support Broker** which brings together people with experience of managing long-term health conditions with those in need of support navigating the care system. It recruits people with experience of being carers or of managing their own conditions to become peer advisors or brokers – independent advisors who help people in need of support get the most out of care and connect with other tools for social support. According to the organisation's figures, this model reduces costs by an average of 20 per cent.

Digital tools for prevention and early intervention

One of the most promising trends for councils is the use of digital technologies in supporting prevention and early intervention. Data analytics is a relatively new but growing field of science and action – and highly relevant to local authorities. Understanding the distinct needs of different groups can help plan the type of services they require and how frequently, to better target resources. The next step is to use data and indicators to identify those who may be at risk of anything from abuse and neglect, to isolation and depression. This would enable councils to intervene early, cutting costs and reducing harm.

Identifying trends and anomalies to better target interventions

Data can help councils identify those most at need of particular interventions. For example, as part of the integration of health and social care, North West London segments the population based on age and type of health condition to identify those most at risk. They identified groups at very high risk with complex needs, groups at high/moderate risk with complex needs, and lower risk groups.[34] This type of risk stratification has enabled the 30 or so groups that make up North West London to take a more holistic view of the community they serve and better target the care they provide. Other public agencies have also taken this approach of risk stratification to more effectively deploy resources. For instance, with a population of just over 300,000, New Orleans used the American Housing Survey and American Community Survey - public data sets - alongside fire service data on who was most at risk from fire fatalities. The city then supplied smoke alarms to these houses.[35] In the UK, Camden Council combines records on its citizens from 16 different line-of-business systems to create a single resident index to better address individuals' needs.

Machine learning can be used to spot higher users, anomalies and variability in service use. These tools are not widely deployed, with a few exceptions: GDS is using machine learning to predict page views to detect anomalies[36] and HMRC are using clustering techniques to segment VAT customers.

More common usages of data in local government identify indicators to improve referrals and service engagement rates. Portsmouth's Positive Family Futures initiative tries to prevent individuals and families from falling in what it calls the 'refer and assess wasteland' by identifying triggers for deeper problems, such as using A&E instead of registering for a GP or missing medical appointments. In order to provide support below the normal threshold for intervention, it assigns navigators who work with the family to provide a single point of contact and support.[37] Another example is Cheshire West and Cheshire's early support model, which brings together 20 different agencies to investigate domestic abuse incidents that fall below the usual threshold for intervention. Although it's new and still being evaluated, early results suggest a 23 per cent reduction in unnecessary referrals to children's services.[38]

Predictive algorithms

Predictive analytics have been used in healthcare (to predict if a patient will end up in hospital) or criminal justice (to predict the likelihood that a criminal will reoffend). They are used less frequently in local government, with a few notable exceptions such as Chicago where predictive analytics have been used to plan where rat populations are most likely to spike, to proactively deploy rodent baiting teams and prevent outbreaks.[39]

Developments in predictive analytics could present councils with the opportunity to identify individuals at risk (e.g. of abuse, neglect or homelessness) and act before crisis hits. Although it remains rare, US states such as Florida and Pennsylvania are now using indicators of risk in child abuse to decide which referrals merit greater scrutiny and more intensive interventions. A new experiment in New Zealand takes this one step further, identifying children at risk of abuse or neglect in the whole population, at birth (Box 3). There is a clear moral case for using these tools to support vulnerable groups, provided that it does not result in discrimination or unfair treatment. However, if policymakers are to rely more heavily on these tools in the future, it's important that the workforce and public understand the implications of algorithmic decision-making and the ethical issues in particular.

BOX 3: PREDICTIVE RISK MODELLING IN NEW ZEALAND

Predictive risk modelling is being trialled in child protection services in New Zealand both to see whether children at risk could be identified at birth, and to consider how social workers could use this information most effectively.[40]

A team at the Centre for Applied Research in Economics at the University of Auckland has developed a model to identify children at risk of abuse and neglect based on factors including: parents' imprisonment history; use of prescription drugs; history of alcohol and drug addiction; use of disability benefit where one of the reasons was addiction; whether they were victims of abuse; single status; whether parents have other children under three; had multiple births (increases stress for parents); non-biological fathers in the household; use of benefits and residence in poor neighbourhoods. Preliminary findings suggest that the model has a success rate of 76 per cent – similar to the predictive strength of mammograms for detecting breast cancer in asymptomatic women.

This example suggests that it's possible to reap the benefits of data sharing without privacy issues being a stumbling block. Data used by researchers is anonymised, and their computers kept in a locked down room with high security clearance to prevent people from identifying individuals. As a result, public debate has centred on other issues rather than on the usual concerns about 'one big database'. One of the strengths of this approach is that researchers are working closely with social workers to consider what information would be most helpful to give, while respecting individual liberties. Politicians have also sought to explain the trade-offs, with the Minister posing the question to the public: 'what would you give up' to help protect children.

Despite this, the model has attracted vigorous public criticism. Some critics argue that this approach is changing the model of universal welfare and the responsibility of the state, because it focuses on individual factors instead of looking at systemic factors and the wider policy landscape. Others have suggested that it unfairly stigmatises the Maori community or single mothers, both of whom are more likely to be receiving benefits and therefore generating more data.[41]

Conclusion

Since relational services are necessarily labour-intensive they are costly. As councils come under increased financial pressure over the coming years, they will be particularly concerned with how costs can be brought down. This will be achieved by a mix of moving towards lower-cost models, engaging volunteers to work alongside employees, better and more self-management of conditions and more means testing. While not immediately apparent, digital can be of significant help in this context - especially in terms of promoting self-management, encouraging wider public participation in public services and prevention.

The use of predictive analytics also raises questions around stigmatisation, privacy and security; algorithms will inevitably recommend interventions aimed at people and families that do not require support. A deeper review of the ethics around predictive analytics is needed to take advantage of these emerging opportunities. For instance, there's a clear need to consider mechanisms for appeal so that people can query the results of an algorithm. Ensuring that councils can attract talented data scientists who understand both how algorithms work and the ethical issues will also be a clear challenge. The example of New Zealand, which has had numerous ethical reviews to address the issue of public trust and guidance on data protection, shows that it is possible to have an open, public debate on these issues.

As councils move towards commissioning services rather than providing them directly they will need to address important questions about accountability. One option that councils might consider is engaging service users in commissioning services – or at the very least in setting KPIs in service contracts - as well as monitoring and evaluating services.

In what follows we look at how councils might use digital tools and technologies to better engage citizens in local decision-making and drive economic growth, in part through procurement, to achieve their broader objectives of place-shaping.

4. Place-shaping: local governance and economic growth

In recent years, place-shaping[3] has become more explicitly focused on promoting local economic growth. This aspect of place-shaping has been given greater prominence through the re-localisation of business rates and the end of most central government grants. In effect, from 2020 councils will be partly dependent on local economic growth to continue funding vital public services, with far more limited levels of redistributive protection available to those without thriving business communities. Local economic growth will be an increasingly important part of meeting statutory responsibilities.

Digital technologies will allow councils to take a more ambitious approach to place-shaping and driving local growth. There are two key ways in which digital technology can contribute:

- Placing the citizen at the heart of local problem solving and decision-making, ensuring that resources are targeted in ways which reflect local needs and preferences.
- Creating an environment which supports new businesses to startup, and for existing businesses to grow, helping spur the local economy.

3. Place-shaping refers to *"the creative use of powers and influence to promote the general well-being of a community and its citizens"*. This includes community engagement, promoting the local economy, creating a sense of local identity, supporting community cohesion, as well as meeting the needs of local residents and businesses

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Devolution has created opportunities and challenges for local authorities. New powers and freedoms were accompanied by funding pressures and growing service demand. Digital technologies helped many councils weather the storm by growing their local economies, though only in concert with other innovative and traditional approaches.

Councils now use online exchanges and platforms for all procurements. Single portals and small contract sizes attract high-growth small businesses. Open data about local spending and outcomes provides transparency to all organisations bidding. These platforms also host challenge-based procurements, which widen the pool of potential providers and solutions beyond traditional market incumbents. This has changed the profile of local procurement spending, with far more going to SMEs, social enterprises and charities.

Councils are more sophisticated at using their data to support local businesses. Analytics help councils judge where they can invest to make it easier for businesses and people to connect. Open Data Stores that provide data covering whole city regions are now common and have led to some successful apps being developed and monetised.

Some local authorities saw devolution as the opportunity to redefine the relationship between citizens and the state - away from simply engaging citizens, to collaborating with citizens. Councils enlisted the public in a discussion about the future of local government. This required a prolonged and meaningful process of engaging with citizens which could only be done through a combination of digital platforms and traditional offline methods. Some chose to host deliberative events where a representative group of citizens discussed questions such as *"what is the council for?"* and *"what can I expect of the council and what can the council expect of me?"* Some councils chose to use digital platforms for direct democracy, giving people a say in a broad range of issues.

Councils are also much better at engaging local citizens in everyday decisions about how services are organised and delivered – and through online participatory budgeting processes, they're also involved in decisions about how local resources are spent and allocated. The main areas for citizen engagement have included budgets, planning and ranking policy priorities. Augmented reality and 3D planning tools have helped bring in people beyond the usual suspects to imagine how their communities might look in the future and provide input to planning.

Councils have found that by integrating online and offline methods they can widen the pool of people who engage with local councils. Councils are also clearer about which issues are most suitable for intensive engagement, and which issues are better dealt with by smaller pools of experts and elected councillors.

Omar's Story – A Day in the Life in 2025

Omar is a recent graduate who moved to the local area recently to take up work for a small social enterprise that provides employment support and opportunities for adults with learning difficulties. The organisation used to receive an annual grant from the local authority but this arrangement ended during the era of austerity. Now the organisation relies on unpaid volunteers and winning work to deliver services on a payment-by-results basis as part of localised work programmes.

His role includes business development and fundraising. The single procurement portal makes it easier for him to keep track of new opportunities. When developing a bid he uses open council data on the expected number and profile of service users to estimate potential income. He also uses the digital platform to seek out other partners for consortium bids. The open data store also helps Omar plan where the organisation is most likely to need to recruit new volunteers, based on where there is the highest density of service users.

He also downloaded the local authority's Connected Citizen app and signed up for citizen participation alerts. He is now an active contributor on the Digital Development portal, where new ideas can be suggested and debated, new policies drafted and votes are held on how some local resources are allocated. He was recently alerted to a decision-making process about how his local ward's community budget could be spent. The top ten ideas suggested by the public had been costed up and presented in an online vote, simulating a budget setting process. Omar voted for the money to be spent creating safer cycling paths along key routes into the main employment and leisure zones. He found these participation activities helped him to understand more about the city, and to feel more connected with the place and his community.

Local governance

Engaging citizens in local decision-making is critical to place-shaping. It's only possible to improve local areas when there is a clear sense of what it is that people want and need. Citizen participation also helps place-shaping by giving people a greater sense of belonging. Engagement activities have been shown to improve community cohesion, boost social capital, improve wellbeing and empower traditionally excluded groups. Digital technologies present significant opportunities for councils to engage people more effectively in local decision-making processes.

Local governments and cities around the world are experimenting with new online tools for citizen engagement – from mass deliberation, collaborative decision-making and electronic voting. Through its **D-CENT** programme, Nesta is working with local governments in Spain, Finland and Iceland to develop open source, distributed and privacy aware tools for direct democracy. In each case, new online methods are being combined with more traditional offline methods to widen participation.

Digital technologies can improve the full spectrum of citizen engagement activities: from informing and consulting (by increasing channels for communication) involving and collaborating (crowdsourcing new ideas and allowing citizens to deliberate on proposals), and empowering (enabling direct decision-making through digital platforms). While many local authorities are already using digital technologies to inform and consult local citizens, there are significant opportunities – at least in the medium term – to better use technology to involve, collaborate and empower.

Using digital to inform and consult people

Digital technologies open up multiple new ways of creating two-way interactions or feedback loops between local authorities and local residents. They also enable communication to be more frequent and frictionless for citizens. Social media channels can merge with people's usual online habits, making local government easier to engage with. Similarly, dedicated apps for smartphones or desktops can be used for specific purposes, such as **FixMyStreet** which is used to report problems such as broken potholes or streetlights. This makes it easier for place-shaping activities to respond in a targeted way to the needs and preferences of local people.

In Seoul, online and offline channels of communication give residents numerous ways of engaging with the city government. The Mayor of Seoul has over one million Twitter and Facebook followers, online channels have been streamlined for comments and complaints, and new apps have been developed by the city government. One example is the Open Apartment app which opens up data across all apartment blocks in the city about service charges, utility fees, and provides a way for residents to communicate with each other.[42]

In Tel Aviv, **DigiTel** allows the city to produce personalised news feeds for each person, based on their interests, location, transport preferences and activities. It also provides a means of sending personalised messages and notifications to people from the city government. In Moscow, the city has created an app to survey opinion from people about issues such as transport, healthcare and education. The app - Active Citizen - uses a points system which rewards people for voting, and can be exchanged for city services such as parking spaces or bike rental.

Digital to involve and collaborate with people

Digital technologies can be used by local authorities to crowdsource ideas, develop policies collaboratively with local residents, and enable citizens to deliberate on options and proposals. One example is **Loomio**, an open source web application for deliberation and decision making. Its founders had been involved in the Occupy Movement and wanted to create an online tool that would replicate the consensus decision making processes that had taken place in the Occupy General Assembly. The tool has a simple interface; the screen is split into two sides, one for discussion and one to see how people are voting. It has been used by activists, political parties – most notably Podemos in Spain, and businesses. Unlike tools such as **Liquid Feedback**, **DemocracyOS** and YourPriorities, Loomio was created for relatively small groups. However, it has been used at the city level by Wellington City Council as part of a public consultation on the city's alcohol management strategy.

Another example within local government is **Better Reykjavik**, developed by the non–profit Citizens Foundation in Reykjavik, which provides a platform for citizens to propose, debate, and vote on ideas for improving the city and its services. Every month, the city council deliberates on the ten to 15 most popular ideas. Roughly 60 per cent of the city's residents have used Better Reykjavik, and the city has spent €1.9 million developing more than 200 projects based on citizen ideas posted through the platform.

At the national level, **Open Ministry in Finland** crowdsources new legislation. If an idea posted by a citizen gets support from more than 50,000 people, policy experts draft a bill which is then put before parliament for a vote. Gay marriage was recently legalised through this process. Also in Finland, the Department for Environment experimented with publicly crowdsourcing a piece of legislation - the Off-Road Traffic Act - which regulates the use of snowmobiles. The legislation was drafted in three phases using a digital platform: problem mapping, ideas generation, and citizens and experts providing scrutiny over the ideas proposed.

Digital as a means of decision-making

In recent years city governments have been using digital platforms to allow people to choose how some public budgets are allocated. A notable example is 'Madame Mayor, I have an idea' where the Mayor of Paris allocated 480 million Euros (or 5 per cent of the city's investment budget) to be spent by the public between 2014 and 2020. During the pilot phase in 2014, the municipality received 5,000 proposals. All votes and proposals were submitted online. To make sure that the process included a broader range of people, in particular the elderly and ethnic minorities, the city organised meetings across the city to supplement online activities. The overall budget was divided across the 20 arrondissements of Paris but was weighted so that poorer neighbourhoods received more money.[43]

Citizen engagement can bring the ideas, needs and preferences of people closer to the decision-making process and broaden participation – especially amongst the young. This is vital in the context of place-shaping where the objective is to make great places to live, work and do business. However, online methods will need to be supplemented by more traditional offline methods to make sure that some sections within society are not excluded. For instance in Seoul, a city which has made citizen engagement its main priority, the city government has combined digital communication channels with offline face-to-face methods, such as a mobile city hall which visits neighbourhoods to better understand residents' concerns.

Driving local economic growth

In recent years, the economic growth element of place-shaping has become a primary objective for councils. English local authorities have been incentivised to promote local economic growth through the re-localisation of business rates. By 2020, local authorities will keep 100 per cent of business rate growth, but will also lose revenue if their business rate yield decreases. At the time of writing, details of equalisation measures had not been published, but government has indicated that there will be fewer mechanisms to offer financial protection to local authorities in economically disadvantaged areas. Failing to attract new businesses, or help existing businesses to grow, will mean that councils could experience funding shortfalls for vital services. This will make driving economic growth a major strategic priority for local authorities.

Digital technologies can complement traditional local approaches to economic growth, such as measures involving taxation, business support, sub-regional governance arrangements such as Local Enterprise Partnerships and city-region mayors and strategic planning of infrastructure such as housing and transport. Digital tools can help councils to: reform procurement processes to open up the market to high-growth businesses; provide information, networking and business opportunities to local companies through online platforms; and use data to tailor business support.

Using digital to open up procurement

Public procurement can be used to stimulate innovation and promote local economic development (see Table 2). By directing public procurement spend towards high-growth local businesses councils can actively support their local economies. Growth is disproportionately driven by young, high-growth companies; between 2002 and 2008, just 6 per cent of high-growth companies created 50 per cent of the UK's employment growth.[44] However, small firms have typically struggled to access public contracts. Nesta research has found that between 2012 and 2014 in the UK, startup companies won just 2.7 per cent of published government contracts.[45]

Digital platforms provide a means of opening up procurement processes. Promising trends include ensuring there is a single, easily accessible digital procurement portal, using smaller contracts, or using challenge or problem based procurements. For example, Contracts Finder in the UK lists public contracts in one place. Councils can also use platforms to actively promote contract opportunities. For instance, Barcelona uses challenge-based procurements, which it promotes widely online, including on social media, to broaden the audience. Through challenge-based procurements local entrepreneurs are invited to develop innovative solutions to local challenges and then given accelerator support. Combining these stage-gated processes with financial support brings new providers into the local government space and helps them scale. In the UK, Citymart has been pioneering the use of problem-based procurements and over the last five years, SMEs have won 98 per cent of tenders they have published.[46]

Councils could also open up data about live contracts – this has been done by the City of Montreal and New York City.[47] The next step might be to provide data on costs and outcomes, so that future bidders can make more sophisticated business plans and projections.

Table 2: **Using procurement to promote innovation**

Open and Accessible procurement			Procurement as a lever for innovation	
1 **Ensure the visibility of procurement opportunities through a single portal**	2 **Ensure that pre-qualifying requirements achievable by new businesses**	3 **Define targets for spend on new businesses**	4 **Use problem-based procurement methods**	5 **Use open innovation methods to engage the ecosystem**
A single portal makes it easier to access opportunities and for the city to increase its reach	Pre-qualifying requirements such as stipulating annual turnover can restrict new entrants from accessing opportunities	Public targets signal intent to the entrepreneur community and prioritisation of SME spending helps ensure objectives are met	Challenge Prizes enable city governments to define complex problems and leverage entrepreneurs to develop and test new solutions	Often used in tandem with open data initiatives, city hackathons encourage the creation of new products and services from public datasets

Source: CITIE (City Initiatives for Technology, Innovation and Entrepreneurship)

For some types of purchasing, such as IT solutions, digital exchanges such as the UK government's G-Cloud can also be successful in opening up the market to small, high growth firms. G-Cloud is a simple, flexible and transparent exchange which makes it easier for SMEs to win work, as well as being cheaper for purchasers (savings are estimated to be around 50 per cent of what was previously being spent). So far, less than 50 per cent of the work through the G-Cloud has gone to SMEs.

Using digital to connect business and provide local information

Local councils can also use digital to provide businesses with information, networking and matchmaking opportunities. For instance New York has created an online hub for the city's startup ecosystem called **Digital.NYC**. This has an online, interactive map of every company, startup, investor, event, job, incubator, accelerator and resource across New York City. Digital.NYC also promotes related events, such as New York Tech Day – an annual event with over 400 exhibitors and 10,000 attendees, where companies can showcase and recruit. New York has also launched a Business Atlas, which provides hyperlocal public information – such as demographic data, sales tax data, business filing data and traffic data - to help businesses plan their startup or expansion. In addition, new data scraping and mapping techniques can help visualise reciprocal connections between innovative companies, such as Nesta's work mapping networks using data from Twitter, LinkedIn and TechCrunch.[48]

Using digital to tailor business support

Councils have large amounts of data available to them which can benefit businesses. Local authorities can generate and analyse their own data to make the city more efficient, and therefore a better place to do business. For instance, in Seoul, the metropolitan council used analytics to help taxi drivers increase the time they are fare-earning and decrease the amount of time people spent waiting for cabs. The big data team used data generated by sensors on taxis to calculate where the taxis were most likely to be empty, and where people were most likely to need a taxi, and used this to locate taxi stands. This has led to more fares for taxi drivers and shorter wait times for customers.

In London, the Greater London Authority has launched the second version of its pioneering London Datastore. It now contains 850 datasets with open APIs covering 16 themes from employment and skills to transparency and health, allowing entrepreneurs the opportunity to use the data to create new businesses and solve city problems. One of the most successful applications to come from this was **Citymapper**, which uses open transport data to give city residents real-time information to help them plan their journeys. It started in London and currently works with 21 other cities including New York, Berlin, Paris, São Paulo, Singapore and Toronto.

Councils can also use digital technology as part of the procurement process, enabling businesses to develop solutions using local authority data in response to defined problems. In Chicago, the **CleanWeb Challenge**, a year-long hackathon, challenged developers to use city data and create technological solutions for environmental issues. Helsinki's **Hack at Home** concept uses a collaboration platform that brings developers and mentors together over a four-month period. Teams are tasked with using open data from the city to create apps to solve city challenges. And in Israel, Tel Aviv's **ILVenture** is an open platform for startups, investors, accelerators and others in the city interested in innovation. It allows users to post jobs, services and programmes, and search for investors and potential hires.

Councils can also use data analysis to plan interventions designed to support business. For instance, sophisticated data analysis, such as Nesta's **Tech Nation** data scraping and analysis, can be used to identify nascent industry clusters and therefore target groups of businesses which could benefit from local government support - such as funding for apprenticeships, targeted investments in local infrastructure, or matching SMEs/social enterprises and local commissioners.

Conclusion

Digital technologies can help councils become better at making and shaping places – especially through promoting local governance and local economic development. In both cases, online methods will have to be used with more traditional offline approaches and methods. In the case of local governance, engagement activities which are used with traditional community engagement activities promise to broaden participation as well as involve people in new and more meaningful ways in local decision making processes. As such, new digital tools and platforms could hold the key for reinvigorating local democracy.

Traditional policy levers such as fiscal policy, procurement, and business support will continue to be the foundation of any council's strategy for promoting local economic growth. However, there is a danger that councils overlook the important contribution that can be made by digital tools and technologies if they simply focus on traditional approaches. Such tools can be used to improve procurement processes and open them up to high growth firms. Digital platforms provide local companies with more accurate information and networking opportunities - both critically important in terms of supporting local high growth firms. One particularly promising area for local government is around the use of data to tailor support for local businesses.

5. Changing how councils work

All the fundamental tasks of local government described above – delivering high quality universal services, supporting vulnerable groups, place-shaping and economic growth – depend on digital technologies. There is a huge array of promising opportunities: from using predictive analytics to target resources effectively to enabling people to take more control of their own health and wellbeing and helping local SMEs scale.

Implemented in isolation, these tools will not deliver on their promise. To reap the full benefits of these new technologies, councils will have to overcome entrenched siloes and barriers to data sharing, open up data both internally and externally, get better at attracting, developing and retaining talent, ensure that the workforce is mobile and use public space more intelligently. Taken together, this vision could enable more ambitious organisational change: towards a smaller but smarter model of local government that stimulates innovation both within and outside councils.

One of the main challenges is crafting a smart, agile and creative approach to IT procurement. Some councils will need a radical overhaul of their digital infrastructure to move away from legacy IT contracts and systems that don't speak to one another. But such an approach doesn't mean procuring a big expensive platform – as Nesta's work on smart cities has shown - many ambitious smart city ideas have failed to deliver on their promise, combining high costs and low returns.[49] On the contrary, councils need to ensure that their digital architecture is such that they can make incremental changes to services, reorganise internally, and even merge or collaborate with other local authorities - depending on the eventual outcome of devolution. From the customer relationship management (CRM) systems used by frontline staff to business analytics, technology should make councils more, not less, open to change.

Fortunately, much of the latest cloud-based software means that councils can bolt pieces together cheaply and move away from big IT procurements. Sorting out this underlying infrastructure will put councils ahead of the game in making cuts and taking advantage of devolution. But to make less trivial savings from digital, councils will have to rethink the way they organise themselves, commission services and work with partners, diagnose and solve problems, use public space, and attract talent. Again, digital will be at the heart of these improvements.

2025 LANDSCAPE

Local authorities are like the best tech companies: they're lean, data-driven, agile, and adept at solving problems creatively.

Councils are smaller. They bring in partners on a needs basis and work with people in myriad virtual and physical ways that break the traditional employer-employee mould. There are fewer managers and many back office functions are now automated.

Job losses have been less painful than initially anticipated, in part because digitisation made it possible to protect frontline staff and make efficiency savings without 'salami slice cuts'. The move to digital working hasn't created as many jobs as it's eliminated. But in most cases roles have evolved (and become more complex and creative) instead of being directly replaced. And in many cases, the impact of major job losses has also been offset by bringing a greater number of individuals and providers into the council's network, using public purchasing power to stimulate economic development and innovation.

Councils are highly networked. Indeed, they sit at the centre of a large network of partners, providers, suppliers, users and community groups. They work closely with experts, residents and innovators to generate new ideas. And councils no longer directly provide most local services. Instead they act as brokers or enablers – connecting residents with the best services, whether public or private, which deliver the best outcomes for them.

Open, transparent and innovative public procurement processes have helped councils foster an ecosystem of innovation. Councils also use their purchasing power to support high-growth companies that add social value and create the most local jobs.

Councils are much better at diagnosing and solving problems. They think and plan as whole systems instead of separate services. Multi-agency working is the norm. Local authorities now organise around particular problems – teams are highly strategic, fluid entities that form into teams based on local needs. For instance, rapid response teams form for fixed periods to address specific cross-cutting challenges. Innovation teams experiment with new service delivery models.

Councils have a deeper toolbox for identifying, analysing, and anticipating problems, including data analytics, predictive algorithms, systematic methods for bringing together evidence and practice, and tools for formal experimentation, including randomised control trials and design methods. These tools help make difficult ethical, political and technical judgements.

Technology, workforce and public space are agile, flexible and adaptable to change. All staff, from chief execs to bin men, can access files and case management information wherever they are. Files are stored in the Cloud; chat platforms enable staff to communicate with one another and maintain a record of conversations. As a result, workers are highly mobile, and not tied to council offices.

With less need for public buildings, councils can use the town hall and other public space as multi-purpose community spaces for pop-ups or co-working. Digital platforms help councils share equipment and workforce capacity with other public agencies and SMEs. To better understand the daily lives of local residents, strategy teams frequently rotate their offices around local neighbourhoods, working in co-working spaces, cultural centres and pop up spaces on estates and high streets.

Councils are above all 'hackable'- instead of being fixed structures, their flexible use of technology and physical and virtual space means they are ready for change: whether reorganisation, devolution, cooperation or consolidation with other councils.

Councils are now staffed by digital natives with strong skills for problem solving, systems thinking and commissioning. The shape and skills of the workforce have changed. Councils are staffed mainly by smart generalists with strong commissioning and relationship management skills. They're also good at systems thinking - they're able to think, plan and act in a holistic way, taking into account whole networks and collaborations. And, increasingly, they have future-focused analytical capabilities, to consider long-term challenges, such as adapting housing and the built environment for an ageing population.

Councils still need talented developers, designers and data scientists. But not all of these jobs exist in-house. Demand for programmers has, counterintuitively, declined (as councils can now make use of a host of open source software plug-ins), but talented enterprise architects who understand how all the pieces of the digital infrastructure fit together are more important than ever. And to make the most of new data tools, such as predictive algorithms, councils also need data scientists who understand the logic and limitations of machine learning – and who are able to make ethical judgements that protect the rights of vulnerable groups. To attract and retain talent, councils have had to change pay and incentive structures to reward skills and responsibilities, not seniority and age. Less rigid career pathways and a non-hierarchical structure have also made local government more attractive and smoothed pathways between the public and private sectors.

A Chief Executive's Monthly Meeting in 2025

Leila is the Chief Executive of a unitary authority, a city of around 350,000 people in the north of England. Although she's nominally the head of the council, she sees herself as a steward rather than a captain. With very light management responsibilities, she focuses her time on building relationships with councillors and other public agencies; and on creating the conditions for her workforce to be fulfilled and performing to the best of their ability. Sometimes it's hard to take a back seat, but she has her hands full managing the forthcoming merger with three surrounding authorities.

Her day starts with a monthly team meeting. With no service managers or executive meetings, team meetings are a frenetic affair involving all political and official staff, many of whom attend virtually. Everyone is encouraged to speak—teams nominate a different person each time to give an update—and they regularly invite partners (from the public, private and third sector) to attend.

In this meeting, Leila wants to discuss the city's plans to receive resettled refugees over the next twelve months. People from teams across the council already self-organise into working groups for settlement and long-term integration, but she's keen to make sure they work effectively with employment providers who are less attuned to the needs of new arrivals. Screens around the meeting room show up-to-date demographic and skills information of the latest refugee cohorts. Leila had anticipated being able to take up to 1,000 refugees, but a number of people speak out forcefully in favour of living up to their city slogan ('A Home for All') and the final vote comes out in support of taking 5,000 refugees.

After the discussion, each team gives brief staffing updates, explaining what people's job titles and descriptions will be and which partners they'll be working with. Teams decide on a month-by-month basis what roles people will perform based on their other commitments and preferences. Leila introduces a new cohort of recent graduates that are beginning fellowships to work on a number of projects: a heat map of cycle routes, a local energy project and a partnership project with the police force. In recent years, the council has struggled to attract skilled data scientists and service designers who tend to be drawn

to London, and abroad. As a result, the council increasingly works with people on a freelance or part-time basis – which seems to better suit the millennials who now make up a majority of the workforce.

Leila explains that she herself contributed to the heat map on her cycle route this morning by donning a wearable device that will compare her skin responses, heartrate and verbal commentary with spatial mapping data about her route (including where she is forced to swerve or brake suddenly). As she introduces herself to the team that will be developing the new cycling app and making recommendations for safer cycle routes, she feels suddenly worried they will be able to see how much she was swearing and reminds herself that the data will be fully anonymised.

The proceedings are made public, and residents will have the chance to download data about all the votes, staffing changes, and new public contracts announced. Transcription software records the meeting in real time, but Leila has to give final approval before the transcript and any decisions are made public, giving her the opportunity to remove anything sensitive.

The platform approach to IT procurement

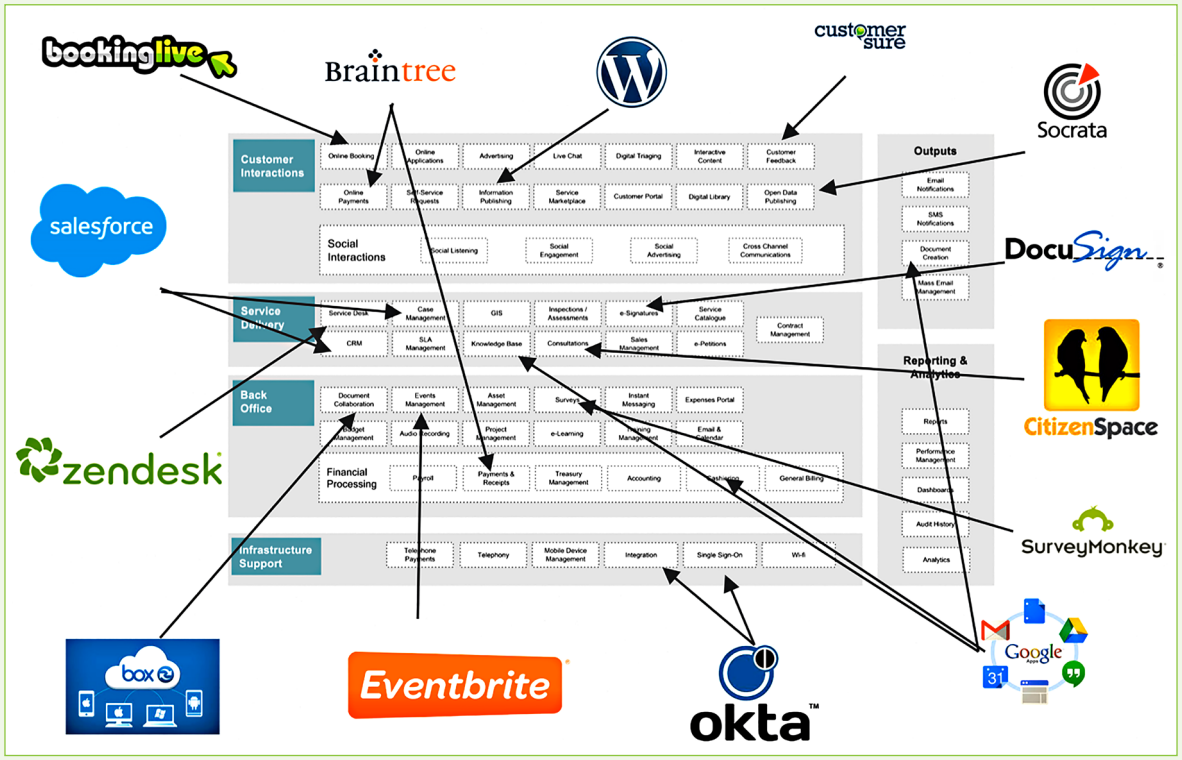
As described in Chapter 2, the term 'government as a platform' is used in a number of different ways. Among technologists, the term is used to describe how organisations – including councils – can create their own digital platforms out of interoperable, reusable software components that can all talk to one another through open standards. This approach is more cost effective than traditional IT procurement as software components can be easily plugged in and swapped out, allowing capabilities to be shared across services or even among councils.

In theory, platform software could be bought or built – indeed, GDS has built the majority of capabilities on its platform. For local government, however, which lacks a dedicated team with the scale and budget of GDS, the most promising approaches make creative use of the new generation of cheap, cloud-based software tools to build bespoke processes that meet specific needs. As discussed in Chapter 2, the Adur and Worthing approach layers third-party software tools to perform processes such as online payments or CRM, which are common across council services.

This approach has a number of strengths. These software components would be used by any startup for standard capabilities such as payments or events management, so they are cheap. They are also interoperable through APIs, enabling data to flow between different systems. By using the software Matssoft, the digital team created a 'low code platform', which enables council employees with minimal coding skills to make improvements. This is the epitome of an 'agile' system. And this approach can have significant spillover effects for local economic growth since it allows councils to support an ecosystem of innovative, third-party suppliers of services – including local SMEs.

The chart below shows the business capabilities of Adur and Worthing councils, as mapped out by the consultancy Methods Digital, along with current software that can meet these needs.

Figure 2: **A Digital Platform for IT Procurement**



Source: Methods Digital

All the data at Adur and Worthing councils is stored in Salesforce, which will create considerable business intelligence and opportunities for predictive analytics. So far, the new waste management service saved £20K per year, and the equivalent of 1.5 FTE.[50]

One critical question is what councils should do if the software they need is not available in the market. Procuring or building bespoke software that can only be amended by its designers could replicate the legacy IT contract problems of the past, and undermine the agility of these platform approaches.

Smart use of data

Regardless of how ambitious councils are with their digital strategy, data and analytics will be at the heart of service improvements. Sharing data with citizens, service providers and other councils enlarges the constituency involved in spotting patterns and trends, solving problems, and developing new applications and services. Open data has attracted attention for its potential to create citizen armies willing to hold public figures to account. Perhaps more importantly, it gives members of the workforce – from frontline staff to managers – access to data about how services are performing, creating a form of 360° visibility that could ultimately replace traditional models of performance management which focus on targets and KPIs.

Meanwhile, new sources of data are on the horizon. The impending rise of the Internet of Things and the proliferation of sensors and wearables is sometimes overhyped. But it will certainly enrich the data on everything from gaps in the provision of green spaces to how people navigate urban landscapes.

Data sharing within government

Data can help frontline workers diagnose and address social problems, understand and serve people's needs, and prevent people at risk from floating below the radar. For instance, data sharing can help create a picture of a child at risk even if multiple practitioners have recorded concerns that fall just under individual services' threshold for intervention. It can allow hospitals to access important information about allergies or medical conditions. And, more straightforwardly, it can save people and organisations the time, and sometimes distress, of having to recount their personal history numerous times.

Sorting out the underlying digital infrastructure would go a long way towards addressing the technical barriers to data sharing within councils. But some councils may not be able to start from scratch with their digital infrastructure, and face the need for temporary solutions to data sharing while they digitise incrementally. Local authorities also need good systems for sharing data with other councils and partners.

There are a number of different models for improving data sharing:

- **City-wide data bridges**. New York has created a repository of secure, anonymised data that can be used by data analysts and city workers. It uses secure APIs to collect data from different agencies and bring these together through a powerful system called DataBridge. By acting as a bridge, the Mayor's Office of Data Analytics acts a broker: managing negotiations over privacy and data protection (that would otherwise need to be negotiated between each agency) and promoting data standards (to ensure that different datasets can be mapped together). A London-wide data sharing agreement would mean a single data exchange for 33 councils, instead of each London council having to negotiate with each other (which would total 528 separate connections).[51]
- **Agreeing common standards**. Countries such as Denmark and Estonia have linked national registry data and agreed common standards. Denmark has just finished a massive data cleaning exercise and extensive consultation on standards resulting in a sophisticated master data management system for all registry data. For this to work, they had to legislate on how the data was to be formatted, stored and accessed. In the UK, the move to common standards has been more piecemeal. LocalGov Digital is developing guidance on standards for local government, and DCLG is promoting waste standards as a prototype.

- **New software to aid communication**. One of the tools developed for data sharing in the wake of the Troubled Families programme was FutureGov's Patchwork, a web-based communication tool.[52] In Staffordshire, where the initiative piloted, Patchwork brought together 60 services, providing a means to coordinate interventions for individuals and families. Patchwork makes it possible to see the network of providers working with one client, and can bring third sector providers into the fold. Leeds has introduced an electronic health record, which collects data from 106 out of 107 local GP surgeries and acute, mental health, and community providers. These records allow doctors in emergency departments to see allergies, pharmacists to view medications patients are taking, and social workers to see discharge summaries for patients in order to design the best care package for their needs.[53]

None of these approaches alone will solve the entire problem of data sharing, and improvements are likely to be slow without concerted effort by local authority leaders to move to data-driven government. Councils face difficult questions about whether to introduce 'second best' software that enables limited data sharing, or invest in sorting out their fundamental digital infrastructure to make more lasting changes. What is clear is that greater collaboration across the sector is essential, especially if local government is to address the barriers to data sharing.

Open data and innovation

Opening up local council data could transform councils' capacity to understand and respond to new and emerging needs. It could also provide a foundation for new innovations to emerge – social entrepreneurs, civic hackers, data analysts and citizens could use this information to develop new approaches to tackling a range of social, economic and environmental problems. Councils can play a pivotal role here - they can build local networks and provide opportunities for local actors to come together, use the data, and develop innovative approaches to particular problems. In this way, councils can make sure that capturing and analysing data is focused on improving outcomes for local residents.

A number of councils are now making their data openly available online through open data portals, such as **Leeds Data Mill** or the **London Data Store**. At the time of writing Leeds Data Mill had 201 datasets, published by organisations as diverse as National Rail, Yorkshire Water, Care Quality Commission and Leeds United Football Club. The London Datastore – which pulls together data sets relating to London – currently has 600 datasets published by more than 50 agencies.

However, experience tells us it's not enough to simply open data; the users or potential beneficiaries need to be linked up to data scientists to make sense of the data. One potential model is a **Data Dive**, an event that brings together the data science community with a small number of charities to tackle their data problems. Volunteers are matched up with these charities in advance of the event to clean up the data and make sure that it's usable for the Data Dive. Results vary but through these events, charities have created interactive visualisations, amended their internal processes and systems, and shared and linked data across organisations. This model could be adapted to focus on local council data and bring together a range of organisations that represent service users and service providers.

For open data to deliver lasting innovation it's also vital that local authorities use their own data for themselves. Businesses and civic hackers are unlikely to invest their time and money in developing interesting tools with open data unless they know that its provision and quality are guaranteed for the long term. The best way to ensure that is for UK cities to emulate the Mayor's Office of Data Analytics in New York City: using their own data to drive efficiencies and improvements in public service delivery, and then releasing a subset as open data for anyone to use. In this way, open data can be placed on a secure financial footing that will benefit both local government and those outside of government wishing to innovate with city data.[54]

Performance data and deep visibility

Publishing real-time performance data helps to make impacts and outcomes visible to all those across a particular system – from frontline staff and users to the top levels of management. When data points to failures or gaps in provision, such visibility can act as a spur for action and learning. Data can also reduce reliance on traditional performance management techniques - such as targets and KPIs - which can create perverse incentives for staff and undermine their morale.

Cities and local governments around the world are trying to use real time data to improve transparency and responsiveness. For example, the CompStat movement in the United States, a data-driven approach credited with reducing crime in New York City, has shown how measurement alone can make departments more efficient by giving them tools to identify blockages and bottlenecks. Smaller cities are also using measurement to drive improvements. For instance, New Orleans (population 380,000) doubled the productivity of abandoned vehicle removal, reduced broken streetlights by two-thirds, and reduced contracting processing times by 40 per cent by using analytics and performance measures to track progress. The Chief of Performance and Accountability attributes these successes to greater visibility – giving frontline staff that are usually too busy to address systems failure a clear sense of where the challenges lie.[55]

Feedback loops

Apps such as **SeeClickFix** and **FixMyStreet** are embedded in the way many local governments use citizens as their eyes and ears. One especially good example is Love Lewisham, which has generated a 73 per cent reduction in graffiti, 53 per cent in fly-tipping, and 22 per cent reduction in casework.[56] The next generation of tools will unlock citizen intelligence without them having to consciously report problems, by using their devices to measure noise, air quality or road bumps. For instance, Boston Street Bump uses accelerometers in smartphones to report potholes and road problems to city authorities. Unexpectedly, the app showed authorities that castings (manhole covers and other metal lids) create eight times as many bumps as potholes).[57]

More controversially, some city governments have worked with private telecomms or transport companies to get data on citizens' movements in order to better design public transport routes. For example, Boston worked with Uber to release anonymised data on journey routes and times, while Seoul asked for mobile phone data to plan bus routes.[58]

Sensors and the Internet of Things

The proliferation of sensors, GPS technology, and wearables – the Internet of Things - has the potential to create a large body of data to help services anticipate and respond to need. Cisco estimates that by 2020 there will be 50 billion connected devices worldwide, equivalent to 6.6

per person. Combined with universal network availability, greater bandwidth, and capacity for huge data management and storage, councils will have powerful tools for monitoring – such as sensors that monitor air quality or noise pollution or infrastructure monitors that send out notifications when bridges, roads or wind turbines need repairs – and understanding citizens' experiences, routines and needs as they navigate urban environments.

Sensors and data are vastly improving the precision with which waste, repairs or infrastructure teams respond to need. One of the prime areas for experimentation with sensors and new mapping technologies has been waste management. A number of councils are using **Big Belly**'s waste management system. Big Belly bins are solar panelled and capture real-time data with sensors that mean they can be collected only when full. Some bins are fitted with compactors that enable them to hold five times more than standards bins.[59]

Wearables such as smart trainers, smart watches, smart glasses, smart fabrics and even smart skin patches will also provide a vast amount of data. This next generation of wearables will be able to monitor heart rate, distance and route travelled, activity levels and even gestures. Councils will be able to use wearables to get feedback on urban planning and urban design and the environment – such as noise and air pollution. As imagined by the startup. Commonplace, wearables could be used for planning processes, by creating a map of how people feel about their neighbourhood.[60]

However, while these technologies are promising, the potential of the Internet of Things has been over-hyped. Without the ability to discern between useful and less useful data, city planners and policymakers face a glut of data. It's also true that few cities have put in place even the most basic mechanisms to use the vast quantity of data they already have. Using citizens as passive sensors wastes their capabilities in helping rank the relative problems that might exist in the urban environment.[61] Relying on these data could lead to poor decisions in a situation of limited resources: deploying repairs teams to fix potholes that are causing very minor disruption to motorists instead of a piece of racist graffiti up the road that is causing deep distress to a family who lives nearby. Instead, local government need to get community input to help prioritise challenges.

Developing skills for the digital age

Councils face the challenge of assessing whether they have the right skills and competencies in-house or whether they need to buy in that expertise. The next wave of software will mean that people can design sophisticated digital platforms with basic coding skills. At the moment, however, getting the design and development skills to redesign services is a challenge. Experts observe that attracting talented developers is a major challenge; since pay is attached to people managed and budgets rather than the market rate for technical skills.[62]

Councils have three immediate options: bringing in external expertise on a short term basis; training up staff to build capacity in-house, and encouraging more flexible working to tap into underused labour. Some central and local government agencies are already experimenting with different approaches:

- **Digital fellowships**. The 'innovators-in-residence' programme in the Department of Health and Human Services in the US was established in 2012 to tackle issues from data matching and proximity sensing to how to improve patient algorithms, to create a healthier workplace.[63] At local government level, the Code for America model of bringing in talented developers to work on short-term, civic tech projects is widely thought to be one of the most successful programmes. The programme recruits around 25 fellows – usually talented

early career developers – to work on a specific project in partner local governments. They are paid $50,000, around half of the salaries they could command in the private sector. The programme's strong brand has enabled it to punch above its weight, supporting a community of alumni and affiliates who share best practice at regular events and conferences.

- **Internal champions**. Several councils are bolstering small digital teams with 'champions' from across the organisation to build internal capacity.[64] As discussed above, in Adur and Worthing's case the 'low-code' platform means volunteers can be drawn from across the council to accelerate digitisation. Further afield, Louisville in Kentucky is trying to create a snowballing effect, by training people on Agile and Six Sigma – project management techniques that emphasise data-driven performance monitoring and iterative change. According to the Chief of Performance and Technology, the ultimate aim is to make her department obsolete.[65] The challenge with these programmes is ensuring that systems change too, so that people don't have to return to their 'day jobs' after implementing agile methods.[66]
- **Tapping into underused sources of human capital** is another way to bring in talent. The Timewise Council project helps councils – including Camden, Lambeth, Stoke-on-Trent, Leicestershire and North Dorset - drive changes in flexible working and diverse hiring.[67] Flexible working experts diagnose the local labour market, assess barriers to entry for different groups, and then train leaders on expanding their hiring processes. Another approach is to look beyond the immediate labour market. The US digital services agency 18F took the decision to recruit developers from across the United States in order to meet its skills needs, disassociating work from physical proximity.

While councils have a number of options for attracting and developing talent, in the long term they may need to face up to the need to pay technical employees more or buy in a greater volume of services. Even if these skills can be brought in from outside, commissioners will need to be sufficiently digitally literate to purchase the appropriate goods and services.

Sharing space and assets

Councils will shrink dramatically over the next decade. And with more staff working on the frontline, fewer staff will need permanent office space. Changes to work patterns will also have an impact: cloud technologies and flexible working will make remote working and hot desking the norm. As more employees work remotely, councils will have to ensure that they get more out of meetings and actively include mobile staff (Box 4).

BOX 4: MEANINGFUL MEETINGS[68]

Many of us, including council employees and elected members, spend much of our time in meetings. A recent study found that on average 15 per cent of an organisation's collective time was spent in meetings. This reaches two days a week for senior executives.[69] Digital tools can make it easier to connect with people remotely (e.g. through digital platforms), reduce time pressures on participants (e.g. through scheduling tools), and help bring meetings to life (e.g. with real time data screens surrounding boardrooms).

The literature suggests the following principles for improving meetings:

1. **Be clear about the ends and means of the meetings, and prepare well** by sharing background papers and materials. Apps such as **Do**, which collaboratively builds the agenda and sends out automatic meeting notes, and **Pick**, which finds mutual availability between participants, can reduce time pressures on participants.
2. **Present information in different formats**. People learn and think better when supported by more than one type of communication. Digital tools such as **Popplet** (which creates linked networks of ideas collaboratively) or **Permenides Eidos** (which presents complex data in more accessible ways) can help participants understand complex ideas.
3. **Create the conditions for collaboration**. Active chairing and clear rules (such as the most junior speaking first or the self-management principles such as **holocracy**) can help prevent meetings from being dominated by those of higher status or extroverts. Square or circular meeting spaces allow everyone to have eye contact with others. Formats like **Unconferences** (participant-driven conferences) and **World Cafés** (which establish rules for democratising large gatherings) can help break down hierarchies.
4. **Ensure there is an appropriate division of labour**. Attendees play distinct roles, including facilitation, record keeping and synthesis. Methods to distribute roles among participants include **De Bono's Six Thinking Hats**, which assigns people into different thinking perspectives and the **Four Player Model**, which divides people into movers, followers, opposers and bystanders.
5. **Ensure meetings are part of a broader process (and cancel meetings when they're not needed)**. Meetings should be part of broader processes of cumulative learning; digital tools such as maps that analyse how meetings influence relationships or social media patterns to analyse how people interact after meetings can help get the most out of meetings.

Remote working will also free up public space. Some councils will move into smaller buildings; others will find other ways to get the most out of their assets - for instance by using public buildings for pop-up community spaces or co-working spaces for local startups or social enterprises or sharing space and equipment with residents or other councils. Some innovative councils are already experimenting with some of these ideas – by co-locating services, opening up council buildings to local residents, and enabling remote working as part of the One Public Estate agenda. For instance, in Cambridgeshire the Making Assets Count programme is projected to reduce running costs and size by 20 per cent by 2020.[70] The challenge here is to make public space fluid by default. Melbourne has developed an innovative approach to public space that it describes as 'digitally programmable space' – buildings that can be easily converted from theatres to social centres.[71] The city of Seoul is delivering on its commitment to become a world class sharing city by making public space available for startups and social enterprises (Box 5).

BOX 5: SHARING CITY SEOUL

Seoul is a leader in using public assets for innovation and community engagement. **Sharing City Seoul** has certified 50 sharing projects that provide people with an alternative to owning things they rarely use. These include car-sharing schemes and websites to match students struggling to find affordable housing with elderly residents with a spare room. It has also made almost 800 public buildings available for meetings and events as part of its commitment to nurture the city's sharing economy. And it subsidises co-working spaces and encourages non-profits and businesses to share services.

The mayor's office itself has also signed up to this fluid use of space, to embed priorities in local communities. The Mobile Mayor's Office creates pop-up offices in neighbourhoods to get to the heart of local problems. The Mayor, deputy Mayors, head of the borough, MPs and city and local councillors decamp to communities for a set period of time (typically two days) to better understand local issues and identify next steps. The whole process is broadcast online and live tweeted.[72]

Another emerging trend is sharing equipment and other assets. Councils have been sharing services and functions for some time. But digital platforms enable assets to be aggregated and shared on a much larger scale. For instance, a new portal **Equipment.data.ac.uk** allows universities to share research equipment, giving research teams access to more specialist tools that they would not have otherwise been able to afford. In theory, public services could share everything from IT systems to spare workforce capacity.

As they await the outcome of devolution, a more flexible use of public assets could have important benefits for councils. Rigid working practices impose financial and human costs when organisations are restructured. A more flexible approach to space – especially if coupled with an agile approach to digital, as described earlier – will make councils ripe for experimentation and change.

Conclusion

Moving to a digital platform model could help councils break down siloes, liberate the workforce from old-fashioned software and the confines of an office, and allow for a more fluid use of public space. This agile approach to digital systems and physical space will help councils absorb future devolution and organisational change. But the main benefit of digitisation may well be the possibilities for data and analytics. Greater data sharing both within and outside councils will help them make better decisions, intervene at a much earlier stage, and harness collective intelligence to solve complex problems.

To take advantage of the opportunities offered by digital technologies and data, local authorities will have to both strengthen their in-house skills and ability to identify and work with innovative partners. Councils may need to explore alternative ways to bring in talented data scientists, designers and programmers for instance through greater use of freelancers or short-term fellowship programmes for new graduates.

To date, technical barriers to data sharing have prevented councils from having to address some of the ethical issues around data use. This has worked both ways: some services have resisted digitisation efforts precisely because of the perceived ethical and legal issues. It's now clear that the direction of travel is towards much greater data sharing. Even though this will bring huge benefits, councils needs to address a number of concerns about cyber security, privacy, and consent to retain public confidence in the security of data. Clearly, there will have to be well-established rules for data sharing, anonymising private data and ensuring the appropriate consents to use the data, but there needs to be much more research and review in this area – and appropriate guidance from central government.

6. Realising the 2025 vision

By 2025, local authorities will be open innovation systems; they will be highly networked, data-driven, open to the ideas and innovations of people and firms inside and outside of local government, and adept at solving problems creatively. Councils will provide seamless and frictionless services. They will be enablers and facilitators, but not necessarily providers of local services. They will also be champions of local businesses and play a key role in driving local growth. Through new forms and models of deliberative and direct democracy, councils will better involve citizens in local decision making.

Recommendations

To realise this vision, local authorities and central government must act now.

1. **Councils should be digital by default**. Councils should aim to move all transactional services online and fully digitise their back offices by 2020. Digital will have the biggest impact when it's used to improve all aspects of what councils do, rather than limited to the front end or being a digital copy of existing services. End-to-end service redesign focusing on user needs will help ensure that digitisation has a real impact on the lives of residents and the local government workforce – and to mitigate its adverse effects on those with limited digital skills.

2. **Open standards need to be defined for the public sector**. The local government sector cannot define open standards in isolation. Instead, the Cabinet Office should use its convening power to work with representatives from local government, central government, other public sector bodies and industry, to define – and continuously update – open standards for data for the entire public sector. Common standards are a priority in areas with a clear focus on achieving specific outcomes, such as those related to health and social care, troubled families, and Universal Credit.

3. **Councils should address market failures for digital products**. Leading councils should come together to stimulate the market for new digital products. Councils have specific IT requirements which aren't currently being met by off the peg, open standards-based cloud solutions. As a first step, councils could map their current business functions and identify areas for which software either doesn't exist or doesn't quite meet the needs of the local government sector. This information should then be clearly signposted to industry to stimulate the development of new solutions.

4. **City regions wishing to receive devolved powers should be required to set up an Office of Data Analytics (ODA) as part of the devolution settlements**. For city devolution to succeed, cities will need to be able to join up, analyse and act upon data from across their whole city regions. The Government should ensure that an integral part of its negotiations with each city region concerns how they will put in place an ODA – similar to the Mayor's Office of Data Analytics pioneered in New York City. Each ODA would be tasked with helping their city's leaders and public sector bodies bring together and analyse data to deliver regional economic growth and local public sector reform.

5. **Councils should invest in making services accessible to all**. To mitigate the risks of digital exclusion, councils will need to continue to provide human support for those who need it. They should also continue to provide access to free Wi-Fi in public spaces – such as libraries and jobcentres - along with support staff or volunteers to help people use digital services. They should also look at pathways between different services and different mediums, to ensure that pathways are seamless, language is jargon-free, and people with different digital needs are appropriately triaged.

6. **The Cabinet Office should review the ethical dimensions of data sharing**. This report has argued that many of the technical barriers to data sharing will be addressed by moving to a platform-based model with shared, or at least interoperable, systems and open standards. The ethical issues of data use are more complex and will require public discussion and scrutiny. To stimulate a public debate about these issues, the Cabinet Office should commission a review into the ethics and security of data use, in particular, data governance, security, privacy and algorithm-supported decision-making.

The true potential of digital technologies will only be realised when digitisation is seen as core to what councils do, as opposed to a discreet or separate set of services. To realise this vision, councils need a digital architecture to streamline business functions and enable data sharing and integration across all services; procurement methods which move away from big proprietary systems and prevent lock-in; and investments in experimentation, accessibility and skills.

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