Policy briefing

Public sector digital trends 2022

January 2022

Socitm

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IT USERS GROUP

LOLA Linked Organisation of Local Authority ICT Societies

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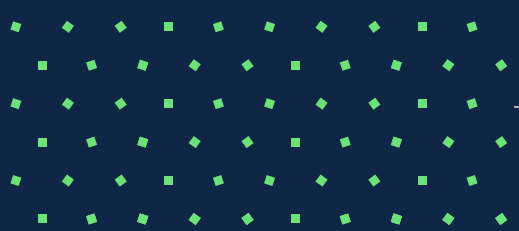

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Foreword

Distinctive in its focus on 'place-shaping' – meaningful outcomes for people, communities, and their environments enabled by effective public services delivered locally – our digital trends policy briefing takes a slightly different slant this year.

Like many contemporary digital and technology predictions, our briefing is heavily influenced by the impact of the Covid-19 pandemic. But it goes further, identifying key trends that lie in the spaces *between* different technologies and how these will affect the public sector. We are predicting, for example, a much greater focus on interoperability, systems integration, and exploitation of opportunities arising from a growth in processing power, coupled with harnessing data volumes and new tools.

These developments will be particularly relevant for implementations of artificial intelligence that to date have been exciting, but mostly superficial in their application. We see that changing, and along with it a range of new responsibilities for CIOs, especially in areas such as the democratisation of data, data ethics, digital inclusivity, collaboration, and risk modelling.

In 2022, digital leadership will be less about IT exploitation and management, and more about true transformational impact on citizens. This includes resolving issues that inhibit deeper collaboration between public service organisations around individual citizen needs, including those with no 'digital footprint'.

Many public service organisations are already significantly 'digital' in how they operate, with the citizen at the heart of digital design practices and this has inevitably accelerated during the last two years of the pandemic. But it is far from universal, and, if the truth be told, many organisations continue to design digital solutions from the 'inside out', which can compromise efficiency, productivity, and the adoption of new innovative models of service delivery.

The public sector will face new pressures in 2022 and digital design will be key to their resolution. These challenges range from new austerity, post-Covid 'catch up', new partnership models, inclusion, and diversity, growing digital risks and public demands for sustainable and 'green' solutions.

The pandemic has amplified the importance of local government in the public mindset. Local government holds the key to health and social care services reform and overcoming resource constraints, to 'levelling up' inequalities and to addressing environmental imperatives. Brave new policies, emerging technologies and strong leadership alone are not enough. It is digital ways of thinking and acting that can unlock the opportunities for new business models and approaches to tackling the deep-seated problems facing local communities in their diverse places.

Sam Smith,
Socitm president

Introduction

The impact that Covid-19 has had has been immense, not just in terms of public expectations, but also in the way that public service organisations have reconfigured themselves around digital operating models to generate business continuity.

But whilst the pandemic may be with us for some years to come, it is no longer the primary focus or the main driver of digital change in the public sector.

The pandemic has compelled public services to move to a digital delivery model, and with the support of the public. The task now is to recalibrate the way in which public services are organised to build on these digital solutions, blended with face-to-face delivery.

Notably, this has destabilised past practices and behaviours. For example, it has exposed the necessity of breaking down the barriers between organisations involved in delivering care to vulnerable and sick people. It has also shown that traditional mechanisms for resource and budget allocation across related local public services are often inefficient, ineffective, or even unhelpful.

These trends are challenging other priorities across the public sector, such as the continuing UK need for a successful digital identity solution for its citizens, or even just in the NHS.

This research identifies three main tasks for CIOs and CDOs in public services for 2022:

- Reviewing IT and digital strategies, and in particular prioritising technology strands as described in this briefing
- Understanding the broader context for digital change, and in particular building credibility, knowledge, and influence in areas such as data ethics, wider cyber risk management and trust frameworks
- Developing new collaborative networks, within and between public service organisations, and with citizens directly

None of these can be done alone, and the degree to which the public service CIOs work credibly with main boards and with politicians, as well as with partner organisations, will be an increasingly defining factor in the success of those organisations from 2022.

2021 has seen the bedding-in of digital delivery platforms, and the associated cultures, behaviours, and processes to support this.

2022 will be a time to ensure the right balance between digital and non-digital delivery, exploiting the power of some of the emerging technologies in the context of the wellbeing of citizens, communities, and the environment in which we all live, whilst driving for higher levels of inclusivity, productivity, and efficiency.

2022 recalibration

It perhaps goes without saying that the pandemic will continue to drive digital change, and many public service organisations are still considering what the so-called 'new normal' should look like.

It will be important in that debate to consider how public expectations will change. It has been clear that, in most situations, the public want and value digital interactions with their public services, provided they are in control, and it is a better service than the alternatives. It is also

clear that the public sector is unlikely to be able to afford to go back to a model in which face-to-face delivery is retained, when digital would be more effective.

This new delivery model will become more complex in 2022, as the public begin to challenge public service organisations on topics such as service join-up, GDPR, data management practices, digital inclusion, and automated decision systems.

There will be growing public intolerance of poorly designed integration across relational services (such as health and social care), with the frustration of having to enter the same data twice, or act as a 'go-between' for organisations that fail to share data effectively and safely.

At the heart of the recalibration in 2022 will be the *convergence* of technology trends – not just the potential of the trends themselves to transform service delivery. This convergence will be exploited by AI developments.

This will reflect new challenges for digital leaders but also for non-IT professionals in HR, policy development and customer services. The way in which IT, digital and other board levels professionals work together in reconfiguring corporate strategies will be defining characteristics of the most successful public service organisations in 2022.

KEY MESSAGE:

2022 cannot just be a continuation of 2021. There are some significant changes that will need to be made to corporate, IT and digital strategies, especially in anticipation of a continued acceleration of emerging technologies, such as artificial intelligence and automation.

Post-Covid recalibration in 2022

Employees

New ways of working need to be normalised, with the necessary digital infrastructure to connect employees.

Citizens

Service design in favour of digital delivery needs to be blended with non-digital where necessary.

Digital leaders

Digital and technology infrastructure needs to be recalibrated -priorities, risks, investments and management methods.

Policy makers

IT and digital strategies need to be reconfigured to match 'digital pace', and challenges in with the next phase of digital progress.

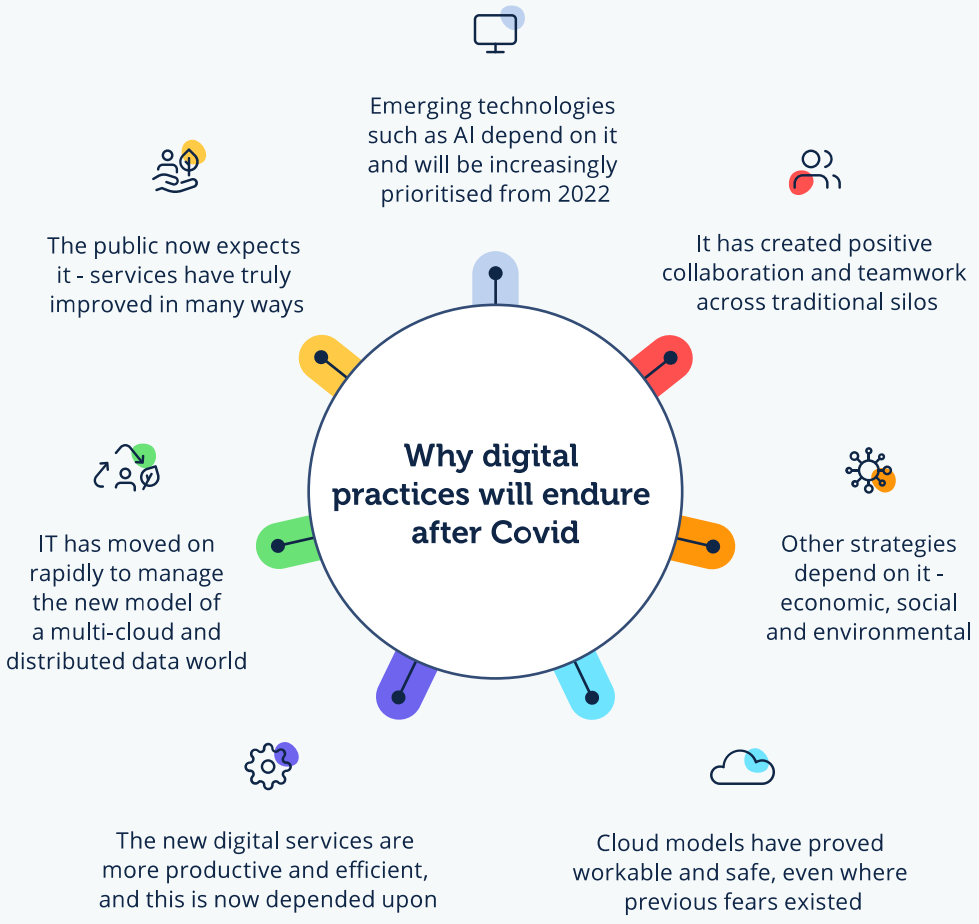
Covid: A last word (perhaps)

Whether the pandemic goes on or not, there is no going back. CIOs spoken to for this research agree that it has created unprecedented cultural change and digital acceleration that will not be unpicked, and that this is almost universally positive. Indeed, public sector CIOs have said this for some time about the benefits of faster adoption (see figure 1).

At the same time the rapid rollout of digital necessitated by the pandemic has left critical activities to deal with in 2022:

- New levels of cyber risks (data, systems, service and community) require a fundamental review and new protections beyond 'perimeter' IT defences
- Dependency on digital requires a rebalancing of business continuity and risk planning with digital transformation investments
- IT infrastructure is fragmented, putting pressure on IT teams to deal with legacy risks and constraints, whilst embracing new technologies and digital methods
- Some staff have been left behind in terms of digital skills – extra support is needed from HR to help everyone to feel confident and to become digital employees

Figure 1. Why digital practices will endure after Covid



- Digital exclusion has changed because of the pandemic – with heightened dependency on connectivity and ease of access to digital systems for everyone, digital inclusion is now something that should be embedded in everything that councils do

These are issues for *all* public service organisations, irrespective of size.

KEY MESSAGE:

In 2022, it will be important to move on from Covid, addressing post-pandemic digital legacies, but focusing more on the opportunities for better public service outcomes that build on the positive digital acceleration in 2021, whilst ensuring that nobody is left behind.

Data democratisation

The importance of 'data' in digital strategies has been reported for the last few years in the annual Socitm trends research – it is the 'fuel that drives the engine'. That trend will continue through 2022 and beyond, but there are some emerging aspects to consider:

- The role of chief data officer, or equivalent, responsible for ensuring that data as a resource is well-managed, used and controlled in a whole person, whole organisation and whole place approach.
- Recognising that data is an asset as important as other resources that have chief officer oversight (e.g. people, buildings, and money).
- Tracking and managing specific risks relating to data ethics, inclusivity, bias, privacy, trust and linkages, including protocols for data sharing and collaboration.
- Managing, sharing and integrating growing volumes of data and data types, especially in a highly distributed cloud environment.

> *"Data fuels innovation and has been vital in our response to the coronavirus pandemic. We know it is the fundamental enabler of our key strategic outcomes and public information."*
>
> **Sandra Taylor**
> Assistant Director of IT & Digital
> Worcestershire County Council

- Establishing and maintaining specific inter-organisational agreements on data sharing in areas such as public protection, health, and environmental improvement; integrated care systems will create new impetus in 2022, building on the positive example of locally developed shared care records.
- Public scrutiny will drive health and care employees to prioritise maintenance of accurate and up-to-date information about their clients/patients.
- Building compliance with standards and trust frameworks and ensuring that the public and individual citizens are in control of the data in ways that have been impossible in the past.

As the public become more aware about how their data is being used, shared and linked, they also want to be more in control, especially regarding sensitive personal data. Public services are in general committed to the principles of putting data in the hands of citizens (see Socitm data hub[1]). But in practice this can be difficult:

- Citizens are not uniformly ready for what is a fundamental shift – they will need support and systems design with a range of protections in place.
- Systems are not designed this way – they are still largely central, curated and managed by professionals.
- There are a variety of circumstances where sharing data with the citizen needs care; will it be understood? Does it need to be communicated?

Figure 2. Digital identity – Why now?

Experience
Verify and other programmes, although unsuccessful, have shown what could be achieved, if lessons are learned.

'Track and Trace'
The NHS track and trace system has shown the possibilities, but also the imperative nature of public trust of any national system.

Technology advancement
Technology progress offers new opportunities for digital ID solutions, protects citizens, joins up services and places the citizen in control.

Other countries
The UK is falling further behind on digital developments because of a lack of digital ID. Many countries have solutions, and have shown what is possible.

Integrated care
Integrated care systems (ICS) depend on a shareable digital identity spanning more than just health, and this is a high priority.

Local needs
Local government is pressing for a solution nationally and is supportive of national standards. The benefits are clear to public services and citizens alike.

Business
UK productivity, as well as the ability to compete in a global market, can be shown to benefit from an additional IT solution that works for the private sector.

NHS app
The NHS app has been launched and widely taken up, because of the vaccine 'passport' possibilities, and is now being trialled in Manchester for local public services more widely.

> *"The development of a council data strategy and accompanying action plan, has never been a greater priority for us. We need to really think about what data we hold, how we harness it, how we safely use it, creating an ethical framework to equip our staff to deliver better services."*
>
> **Alison Hughes**
> Assistant Director of ICT, Digital & Customer, Liverpool City Council

There is also evidence to suggest that many councils are still not compliant with data protection law, with only 12% being GDPR compliant[2] in processing of personal data – this is a 2022 priority.

KEY MESSAGE:

Councils that do not have a data strategy, with chief officer oversight, need to consider this as a priority for 2022.

Digital identity

A national digital identity solution for the UK public sector has long been recognised as a vital element in modernising public services. For over 20 years, Socitm and its Local CIO Council have advocated such a solution to support not just the provision of truly people-centred services but also the shift to working with people before they get into crisis; prevention rather than cure. Socitm's recent report[3] examines the public sector requirements for digital identity and sets out a series of calls to action (see figure 2).

Whilst the requirement for a solution has become ever more pressing, there has been a succession of failed digital programmes nationally, including the recent GOV.UK Verify system, on top of which these centrally led programmes simply take too long and devour too many resources with poor returns.

Consequently, local government and parts of central government have given up waiting for a national solution. In the face of growing demands they are developing

their own locally based, digital authentication solutions. This runs the risk of ending up with a patchwork of digital identity systems that typically are locked into service silos, are not shareable and are incompatible.

From the perspective of the public, in addition to having to understand many different methods of accessing secure public services online, this 'patchwork of solutions' has also been an unnecessarily costly journey for the taxpayer. Worse still, many of those who are digitally excluded find it increasingly difficult to access the very services on which they depend, especially during a pandemic.

But there is cause for optimism. The The Department of Culture, Media and Sport (DCMS) has been given a specific remit to develop a trust framework[4] for digital identity that can embrace both public and private sectors. The vision is strong and compelling. Meanwhile, the UK Government Digital Service (GDS) has stopped the Verify programme and has started a new one login project[5] that should be consistent with the DCMS framework, only offering to retrofit local government services at a later date. Elsewhere, the NHS app and Digital Identity Scotland are exciting developments, showing the art of the possible.

More importantly the public, although cautious, appear ready to accept the concept of a digital identity, provided they are in control and unaccompanied by an ID card.

Success will depend on national frameworks and solution recognising the complexity and diversity of local public services in how they are managed and delivered, not just focusing on the large transactional services of central government or the economic opportunities of the banking and retail sectors.

We expect to see the emergence of interoperable digital identity solutions for the public sector able to address the more complex relational services typically offered at a local level, such as integrated health and social care, supporting troubled families, protecting children, driving equality, and reducing crime. This means avoiding the 'developing first for Whitehall and then generalising' approach, which does not reflect diverse citizen needs, including those with no 'digital footprint' or those unable to act on their own behalf. National frameworks and solutions will also need to learn lessons from the past in terms of inclusivity and gaining high levels of public trust. This includes protecting everyone from digital fraud, abuse, or unintended errors.

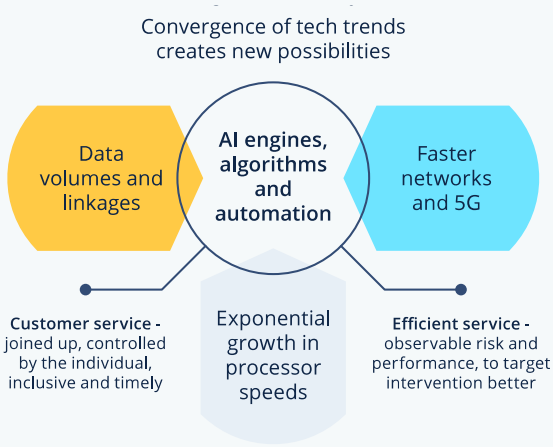
KEY MESSAGE:

In 2022, we expect to see the emergence of a common, inclusive trust framework embracing the full spectrum of public sector services and users, and providing a platform for interoperable digital identity solutions.

IoT, AI, Cloud and 5G

These four technology trends have individually been highlighted in our recent trends briefings, but 2022 looks to be a turning point in they *interact* – together they are more powerful than the 'sum of the parts'.

Figure 3. Digital delivery



IoT

The 'Internet of Things' (IoT) is a case in point. Connected sensors are already in widespread use in buildings, homes, clothing and on our streets.

But these applications have typically been 'point solutions' – for example, managing transport flows better, keeping people safer in their own homes, managing equipment and service remotely, or monitoring for environmental changes and pollution.

In 2022 IoT and associated software tools are being hooked up to more powerful processors and AI engines, with more powerful networks. This will allow the sharing of growing volumes of collected data from sensors that can then be linked and analysed for wider insight and action.

Case study: IoT supporting vulnerable residents

With demand for social care support increasing because of the Covid-19 pandemic, and more people having to self-isolate and shield, Sutton Council deployed IoT sensors to improve the safety of vulnerable residents living in social housing. The technology unobtrusively monitors and provides alerts. It is already saving lives, with scope for the further integration of remote support blended with face-to-face help.

KEY MESSAGE:

IoT has become a hugely important technology for public services in many different applications. In 2022, the greater connectivity and processing opportunities will require a coordinated approach to IoT deployment, maximise value and to control risks.

Artificial Intelligence (AI)

Artificial Intelligence and machine learning (ML) algorithms are beginning to permeate every aspect of our lives, connecting data, anticipating our needs and preferences, and automating processes at the point of delivery. It is arguably AI that can deliver the most personalised service in a digital operating model.

Adoption of AI by the public sector has been slower than in the private sector – the private sector has often been less inhibited in using personal data for commercial gain and therefore can be less worried about the ethical aspects of AI engines than the public sector.

In 2022 the private sector will, however, become more wary of AI impacts as citizens become more concerned; e.g. Facebook has recently removed its facial recognition functions, and the EU has proposed an 'AI Act'[6] to cover any AI-driven products or services. This EU Act will prohibit organisations using facial recognition in public places, and protect the vulnerable from AI exploitation, including a ban the use 'social scoring' systems. AI system providers will need to be able to demonstrate compliance before going to market.

How this would apply in a post-Brexit world for the UK remains to be seen, but there is no doubt that pressure to demonstrate appropriate use of AI will grow in 2022, especially for public service digital design where much personal and sensitive data is processed.

Most of the examples of AI use in the public sector have, to date, been limited to customer service interfaces, such as voice activation systems, automated data linkages, and service pathway moderation, or they have been individual components of automation, such as robotic process automation (RPA).

> *"I think the risk for CIOs and anyone working in tech across Government is that we are all at varying levels of maturity when it comes to data and systems we have in place. Some councils with larger budgets and resources are making some great headway to automation and playing with AI technologies, whereas a lot of smaller councils have no ability at all to invest in or run any kind of data programme or systems replacement. Without that foundation in place, the ability to leverage the next frontier of Artificial Intelligence still feels so far away. We are very much aware that we need to find a way to uplift the maturity and capability of those falling behind across the sector."*
>
> **Justine Resta**
> Chair MAV Technology (Australia) and Transformation Office Manager, City of Greater Geelong

Figure 4. Personalised service context

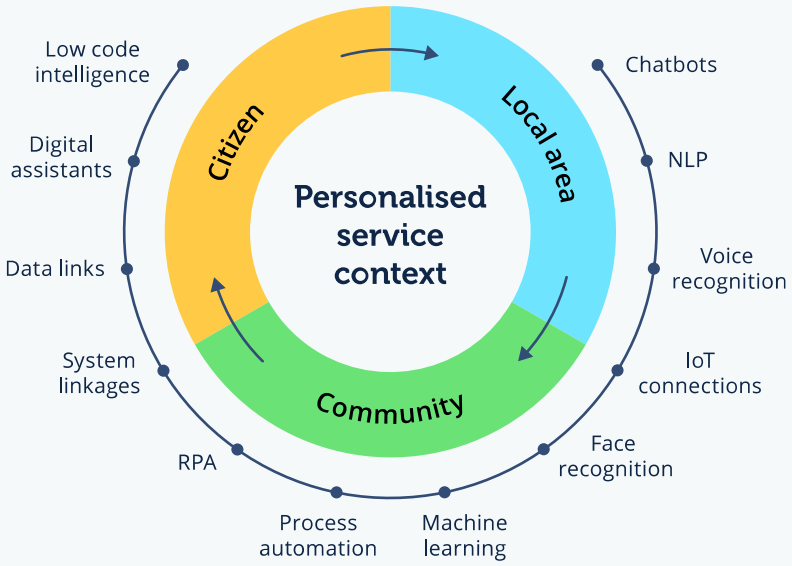
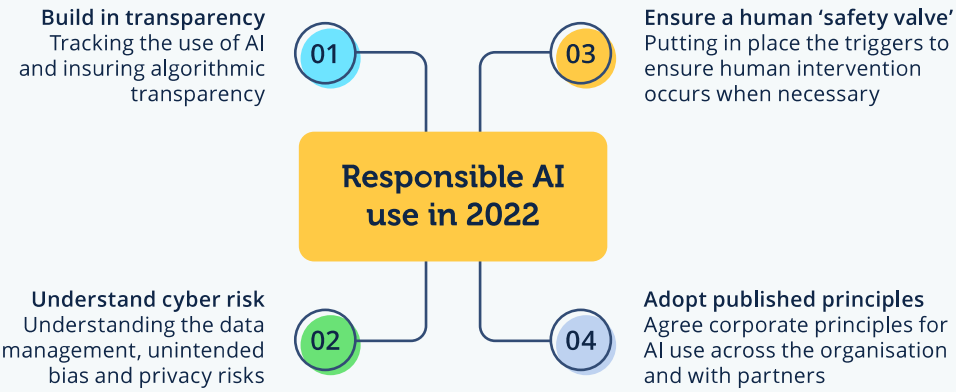


Figure 5. Responsible AI use in 2022

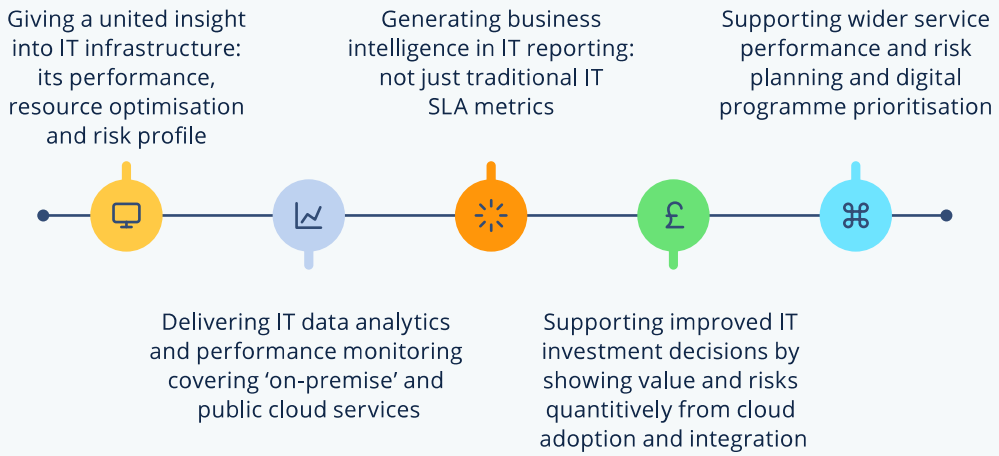


That will change from 2022. Whilst many of the AI plans of public services were temporarily held back in the need to respond to the Covid-19 emergency, in 2022 there will be an acceleration in the adoption of AI in the public sector, often linking to IoT infrastructure, and using cloud processing. The driver will be a combination of greater efficiency alongside the need to deliver more personalised services (see figure 4).

AI potential in local government may be limitless, and prioritisation will be needed, whilst ensuring principles of operation to protect data, and individuals. Nervousness exists about councils' development of advanced AI and ML in decision making processes related to individuals for fear of losing public trust if bias or error results from training the AI with inadequate quality data.

Uses likely to develop faster will be in packaged applications such as the latest cloud ERP systems for recruitment and retention, CRM systems for next generation chatbots and non-personal uses, such as Norfolk CC using AI on satellite images to ensure their 1m trees being planted as part of their net zero initiatives are growing well as opposed to the traditional approach of physical inspections.

Figure 6. Tools to manage a cloud multiverse



Subsequent stages will include low/no code developed in real time using AI engines based on human language. Although this is unlikely to be significant in 2022, the possibilities for citizens to design their own applications[7] or at least interfaces to services just by speaking, are potentially limitless.

Establishing clear principles for AI application will be important in 2022, especially where AI solutions are used in HR systems and citizen facing application that take decisions which affect people's lives (see figure 5).

KEY MESSAGE:

In 2022, CIOs, CDOs, policy makers and risk managers should understand the potential of AI to enhance public service delivery, but also how to manage the risks that this can entail. Board members and politicians should be involved in the principles guiding AI developments, with as much transparency as possible for the public.

Cloud and processing power

Cloud models are no longer an addition to traditional ways of delivering computing power but are now the mainstay of public service processing – whether public or private cloud.

In a short period, the big cloud providers have dominated the landscape (AWS, Google and Microsoft) and cloud systems have been the essential ingredient in supporting a distributed workforce during the pandemic.

In 2022 this new 'multiverse' of cloud provision includes a whole range of systems that process across domains – such as low-code applications connecting smart phones and cloud estates. This is a central component of future AI design, with distributed data and micro processes connected in real time across high-power networks and edge computing models.

Controlling and managing this increasingly complex environment will require IT departments to consider new tools and techniques that can provide insight into risk, performance and resilience of this distributed and dynamic IT infrastructure. The alternative is to end up with a portfolio of different tools (often proprietary) for different systems and environments (see figure 6).

KEY MESSAGE:

Today's processing environment is more complicated, hidden, and 'ever-changing' than before. It is beyond any IT department to manage this in traditional ways. In 2022, IT leaders need to consider the tools and techniques needed to understand, control, and interact with a 'multiverse' of cloud and other components that make up digital infrastructures.

5G and faster networks

As network speeds increase, and 5G becomes more widely available, especially in city regions, new opportunities for distributed digital developments become possible.

However, 5G will not reach the majority of the UK's diverse geography until 2028, and even then, some areas will no doubt miss out – as they do today, even in basic 3G coverage. It will also take time before most of the population own 5G enabled smart phones. Meanwhile, reducing networking costs will start to materialise as use of commodity consumer connections become increasingly the norm and as requirements change.

This presents a challenge in 2022 for digital leaders in public services, eager to develop new applications that exploit growth in network capacity, but mindful of the imperative of leaving no-one behind on the journey. Network connectivity is as much about inclusivity and access as it is about 'power and speed' and this has proved critical during the pandemic, with more remote and home working alongside cloud-based service provision and implementation of zero trust security and emerging identity arrangements.

As time passes, more people will have 5G-enabled smart phones, and new digital services will be designed that are dependent on faster and greater data interchange in real time, such as applications using AI and VR used in health and social care.

Case Study: 5G partnerships

Worcestershire County Council is the lead partner on two DCMS projects exploring the benefits of 5G. In 2020 this resulted in the launch of 'nexGworx'[8] providing 'Testbed as a Service' supporting businesses to test and trial 5G technologies. The second project, 'West Mercia Rural 5G'[9] is a partnership of public and private sector organisations exploring 5G and the potential benefits to health and social care in rural areas. The success of these projects has depended on how council teams work together with public and private partners. The result has been a huge increase in the delivery of superfast broadband as well as innovative solutions the council can deliver to its residents and businesses.

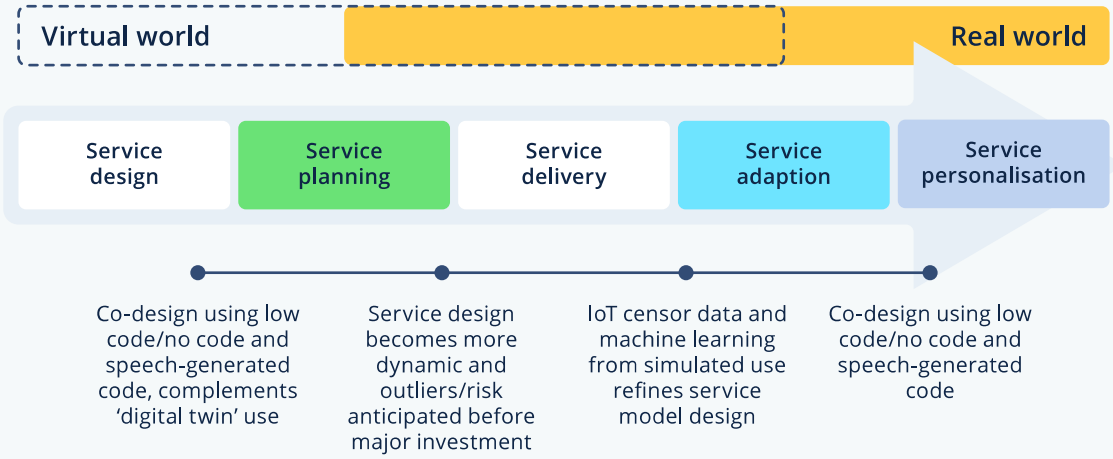
Maximising the value of 5G networks from 2022 – what councils need to consider

- Ensure wide and ubiquitous availability to 5G, not just accessibility in more 'profitable' city regions.
- Use 5G to reduce processing costs and increase efficiency of public services, not just to drive technology innovation.
- Plan for systems that can take advantage of 5G for specialist professionals working remotely.
- Consider smartphones that are not 5G compatible and ensure citizen-facing apps continue to work at lower speed.

KEY MESSAGE:

Local government must ensure that 5G rollout does not disenfranchise more rural communities, nor that development of digital applications that depend on 5G result in greater inequality in access to digital services. At the same time digital strategies in 2022 should explore the potential of increased network capacity and speeds in delivering improved services to citizens and local businesses.

Figure 7. Gamification and virtualisation tools allow real life to be simulated



Visualisation for better service design

Virtual reality has evolved fast in delivering a more immersive and 'convincing' virtual experience. The possibilities have been mentioned in previous Socitm briefings on technology trends. Now, the opportunities are starting to enter the mainstream. 'Gamification' and 'digital twins' will be used increasingly to design public services that better reflect human needs, behaviours and preferences (see figure 7).

Bringing together the possibilities of virtual reality, gamification software and IoT technology, councils can reassess how services are designed – from buildings to public spaces, workflows, service interactions and digital landing pages. These digital techniques can help to produce a more empathetic design of systems that reflect real life experiences, rather than just relying on the judgements of professionals and service leaders. It can also help to avoid the digital 'black holes' that can be so frustrating for service users.

It will be some time before Ericsson's 'internet of senses'[10] becomes a reality – but Ericsson predicts that physical and virtual realities will become interchangeable by 2030.

Case study – visualisation tools

Oxfordshire County Council is using a variety of visualisation tools including gaming to model mobility, a platform to analyse and present the impacts of active travel initiatives, facial recognition, GPS and QR codes to digitise supported transport management, digital twins for autonomous vehicle testing, and geospatial data visualisation to map reablement and domiciliary care 'dark spots'.

KEY MESSAGE:

From 2022, all public bodies should be considering the potential of visualisation methods and tools for all aspects of service design, to better reflect citizen behaviours, needs and preferences.

Cyber remains central

In 2021, ransomware attacks occurred every 11 seconds[11] globally. But beyond the implication of growing risk, what does this really mean? The main message for CIOs in 2022 is to 'be prepared':

- Risks are heightened.
- Public services are seen as a target.
- Impact has grown due to increased digital dependency.

A challenge for the public sector CIO in 2022 is that 'cyber security', and public service organisations need to review their business continuity and IT disaster recovery plans, as well as the adequacy of cyber defences.

Risks are greatest in organisations that are least clear about responsibilities and accountabilities for cyber resilience, or where they simply leave it to the IT department to manage. The message for 2022 is that councils need to ensure a holistic approach to cyber protection (see figure 8).

> *"Cyber security breaches are sadly unlikely to decrease in 2022 as advances in threat actors' resources outpace those of many cash strapped authorities who fail to invest sufficiently in the technology, skills, comms, business continuity and incident response capacity that's needed to keep their data protected. However, in England, the £80M+ allocated to the Department for Levelling Up, Housing and Communities (DLUHC) to improve local government cyber security over the next 3 years and the great work of the WARP communities and Socitm's Cyber Technical Advisory Group (C-TAG) with central government and its agencies gives us some cause for optimism that we may yet make local authorities beacons of good cyber hygiene."*
>
> **Geoff Connell**
> Chair, Socitm Local CIO Council and Chair, C-TAG

KEY MESSAGE:

In 2022, all public bodies should review their cyber practices. This is more than just IT security and access, linking through to business continuity and civic resilience in the light of accelerated digital adoption.

Figure 8. Cyber protection must be holistic to be effective

Cyber remains in the top list of priorities

Reviewing information flows and new risks from the increased cloud adoption in 2020.

Establishing new controls, responsibilities and governance for data, if required, especially where this is shared.

Re-evaluate the effectiveness of perimeter defences given the porous nature of cloud and distributed computing models.

Review and test business continuity plans for key services in the light of new digital operating models.

Review and test IT disaster recovery plans along with systems patching configuration and penetration testing regimes.

Consider a corporate risk approach to data ethics and personal data, including how AI engines are deployed.

Consider adaptations in cyber governance models - for example with stronger political and executive oversight and reporting.

Simulate cyber incidents to test adequacy of response plans - within the organisations and with partners.

Ensure a comprehensive list exists of all third parties delivering digital components, testing their cyber practices.

Be rigorous and analytical in matching risk assessment to risk appetite, addressing gaps and training staff accordingly.

Demonstrate and control all IT upgrades to systems and infrastructures and isolate non-compliant components.

Reviewing information flows and new risks from the increased cloud adoption in 2020.

Ensure a comprehensive approach to data access control, tracking and use. This will ensure risks are better anticipated.

App consolidation

From modest beginnings, the use of personalised apps in government has grown exponentially in the last few years. There are now reportedly over 100 apps covering pretty much every aspect of public service delivery, as shown by recent Socitm research.[2]

It has been an innovative and welcome development, typically designing services around user needs, increasing automation and equality of access, as well as driving responsiveness and efficiency of service delivery in many situations.

But this progress also represents a growing problem that will require action in 2022. The multiplicity of apps is becoming confusing:

- A fragmentation, rather than an integration of services, data, and access mechanisms, often driven by individual departments developing individual apps.
- A semi-digital model where gaps exist between apps that are confusing (such as having an NHS app and an NHS Covid asp).
- The lack of a full app inventory in some public bodies makes data management, access control and cyber risks difficult to monitor.
- Competing apps where there should be synergy – such as many payment methods and parking apps even between neighbouring districts.

From 2022, a rethink will be needed for those councils who have already created a portfolio of citizen-facing apps:

- Consolidating overlapping apps – for example parking apps across a local region.
- Sharing best practice rather than replicating and rebuilding competing apps.
- Reviewing the portfolio of public service apps in an area, to reduce complexity from the citizen's perspective, working with neighbouring public bodies in a region.
- Ensuring consistency in digital identity credentials and authentication across related apps and digital services.
- Building a strategic basis for future developments, including data architectures, digital identity management and cyber protection.

Case study: The NHS app

The NHS app is a highly innovative and welcome development but not been without its problems. Apart from health data quality and integrity issues that it has exposed, it is separate from the NHS Covid app and not shared with Public Health England. Yet the Covid passport depends on the NHS app – and for some people these do not link seamlessly. As app consolidation and data linkages improve between different health agencies, under the control of the citizen, the current fragmentation will be reduced making health integration much more of a reality.

KEY MESSAGE:

The growth in service-specific apps for public services will continue in 2022, but local authorities need to consider how app consolidation, especially for place-based digital services, can improve the citizen experience.

Collaboration and integration

Over the years collaboration across related public services has increased, especially in place-based service design – local councils working with police, health, community organisations and in shared services with other councils.

Socitm have researched shared services[12] on several occasions in the past few years and identified what works and what does not, even launching a 'shared services readiness assessment' tool.[13]

The benefits of sharing are usually clear (economies of scale, joined up services, shared innovation, improved buying power). The problems are numerous (decision-making, complex governance, lack of a willingness to share, politics, and commercial risk). Some of the most recognised shared services, such as LGSS[14] and the Tri-Borough[15] programmes failed after many years.

But from 2022, particularly because of the pandemic, there will be new sharing and integration models emerging, for a variety of reasons:

- **Financial drivers** – many local public services are on the brink of financial collapse, and collaboration can drive savings and efficiency.
- **Technology sharing** has become easier in a digital model, alongside new technologies such as collaborative robots (cobots).[16]
- **Integrated care systems** are proposed in all parts of the UK by the NHS Long Term Plan,[17] requiring all aspects of care to be linked.
- **'Track and Trace' systems** have been shown to work best and most efficiently where councils and health bodies work in partnership.
- **Individual organisations now work 'virtually'** (rather than in offices) which makes the next step of other virtual integrations across services boundaries easier.
- **Wider challenges** facing public bodies can only be solved by organisations working together – external partnerships are essential. This includes a range of social, economic, and environmental pressures.

A recent study[18] by frontier economics for the Open Data Institute[19] reveals that social prescribing could free up 8 million GP appointments every year, yet this is being held back by data infrastructure – collection and sharing of appropriate information.

Case study: The recent announcement of the new alliance between Boston, East Lindsey and South Holland councils[20] – the largest collaborative local authority relationship of its kind in the UK today – is a good example, and this research predicts more will follow. The driver for this and other shared services is more than tradition resource efficiency, and more about collaborating to solve complex local issues that demand political and operational integration.

KEY MESSAGE:

In 2022, there will be two main drivers for collaboration. The first will be collaboration between neighbouring local authorities for reasons of economies of scale, as well as policy driven imperatives. The second will be in health and social care integration, from the pressure on the NHS that is otherwise only going to increase.

'Green' and sustainability

Climate change and 'zero carbon' targets have been a high priority for local government for some years, and most councils have declared a climate emergency.

The implications of the recent Cop26 UN Climate Change Conference[21] held in Glasgow, have demonstrated that much more needs to be done, and rapidly, and much of this will fall to local councils, possibly more so than to national governments.

> *"Climate change initiatives will move up the priority list for IT departments in 2022, that means both reducing the carbon footprint of existing IT operations and use of Digital, Data and Technology (DDAT) to reduce the overall carbon use by the local authority and its supply chain as well as influencing public and local business behaviours. Examples will include use of dashboards, predictive analytics, video meetings and remote working to reduce travel, use of hyperscale cloud services, AI applied to satellite imaging & drones instead of in person inspections, IoT & BMS, agritech and much more."*
>
> **Geoff Connell**
> Director of Information Management & Technology and Chief Digital Officer, Norfolk County Council

Many councils are already reconfiguring working arrangements for their staff to make the most of opportunities arising from the Covid-19 pandemic, including rethinking the purpose and management of work, optimising the use of technology for home and hybrid working and using this as an opportunity to contribute to the green agenda. As public servants, the new ways of working enable staff to be even more rooted in their localities and to be able to provide services when and where communities need them. Flexible working means they are able to work from any location and enables local authorities to review their assets, including reconfiguring and rationalising their property portfolio.

Whilst technology is a significant contributor to the environmental pressures facing the world, overcoming these pressures opens up opportunities for a wide variety of place-based digital solutions:

- Using digital methods to support a low carbon agenda for all councils' activities, from street lighting, verge mowing, traffic management to pollution monitoring.
- Continuing to use collaboration tools to reduce travel overheads.
- Supporting and enabling new patterns of working.
- Harnessing immersive technologies for meetings.
- Encouraging local 'green' tech innovations and businesses.
- Considering environmental policy and impact of 3rd party suppliers.
- Developing electric vehicle (EV) infrastructures, using sustainable energy.

> *"I predict an expectation of increased availability of higher quality "immersive hybrid" AV & teleconferencing tech to ensure the meeting room experience is as equal as possible whether an attendee is physically present or joining from a remote location. This expectation will also extend to higher production quality broadcasting of democratic meetings."*
>
> **Geoff Connell**
> Director of Information Management & Technology and Chief Digital Officer, Norfolk County Council

- Considering the impact of digital programmes and technology processing.
- Helping citizens to understand the green agenda and to be part of behaviour change, supporting the council's changing service models.
- Developing education and skills programmes that support green jobs, sustainable economies, and a digital workforce.
- Working with industry and agriculture, to do reduce carbon emissions, prioritising grants, and public sector support accordingly.

- Putting pressure on utilities to set a strong 'green lead' in how technology support more sensitive environmental management in an area.
- Ensure local recycling is broad and deep, with the council's own behaviours setting a lead.
- Encouraging local businesses and food production to always adopt low travel miles.

There is much more councils can do in this respect – for example, two-thirds still have no plans in place to install Electric Vehicle charging points, according to recent research.[22]

KEY MESSAGE:

Environmental pressures and climate change will have a growing impact on digital strategies from 2022. This includes both the use of cleaner technologies and technologies to protect the environment better. Councils will have a key role in supporting this agenda and ensuring understanding and support in communities.

Social value and 'levelling up'

In the UK, social value, and the 'levelling up' agenda to reduce the inequalities across geographies, have become high political priorities. These will become important aspects of digital strategies in 2022 in several ways:

- Demonstrating digital inclusivity, as more services become available only online in a digital-only format.
- Considering the importance of trust in digital services, especially where there is a growth in the use of analytics and biometrics.
- Developing apps and digital solutions with those who are going to use them, particularly with visualisation techniques and tools.
- Encouraging technology business support and investment locally (since these are known to have low environmental impacts and high social/economic value).
- Providing 'non-digital safety valves and face-to-face contact where required in digital service models.
- Working with suppliers to broaden their contribution to social value in an area, through partnership and in contracts.
- Consider where digital developments are too fragmented or simply failed to provide the end user with a true digital experience across related services.

The importance of local government in enabling community well-being, social improvement, inclusion and equality, continues to increase. Speaking about 'levelling up', Michael Gove (Secretary of State for Levelling Up, Housing and Communities) said that it is all about *"empowering local government"* and *"allowing communities and councillors to take back control"*.[23]

Arguably, local government also holds the key to many if not all the social and community pressures in a post-Covid world, including health service reform and resource pressures in locales.

And it is digital solutions that will unlock the possibilities, if well-designed and delivered, not brave new policies, emerging technologies, or strong leadership alone. This is a clear reason why, in 2022, public service organisations need to consider the additional strategies in the light of wider community value, inclusion and social challenges, arguably more than ensuring more efficient and productive service operations.

Case study: Social value impact

The London Borough of Hounslow employs a range of social value dashboards and its 'Keep it Local' initiative to ensure they maximise investment going into the borough. Through local procurement, it aims to ensure contracts are let to local companies, employ local people and give opportunities locally through apprenticeships, volunteering training and development.

And, for technology it's more than just about donating laptops, it's thinking about how digital can be used in a meaningful person and place-based approach.

Social value impact at LB of Hounslow: bit.ly/3s8y5mr

KEY MESSAGE:

Improving social value in the way in which local public services and the private sector work together, in the interest of communities, is a high priority for the UK government. In 2022, much of this responsibility will rest with local government, particularly in the design, development and delivery of digital solutions.

Public sector CIO team impact

One of the challenges for public sector CIOs in 2022 will lie in prioritising and building business cases for digital programmes and for technology investment.

> *"I expect to see continued increase in the use of Intelligent automation technologies and the 'democratisation' of development through users becoming 'business technologists'; this also means funding of capacity by business units rather than centralised IT budgets. The result will be widespread use of robotic process automation and low code/no code configuration options. This activity will cross over organisational boundaries, such as health and care. Recruitment challenges, particularly in areas such as DDAT and social care mean that we will need to expand the number of people who can automate and digitise processes, as well as to maximise the effectiveness of our existing employees."*
>
> **Geoff Connell**
> Director of Information Management & Technology and Chief Digital Officer, Norfolk County Council

The role of councils has always been to improve quality of life and community well-being in their places. Whilst traditionally a "back-office" service, the strategic importance of the IT department in enabling authorities to achieve these goals has been put sharply into focus during the pandemic, as well as their potential to leverage their expertise and infrastructure to directly contribute to wider social infrastructure issues, individual wellbeing, economic regeneration and environmental sustainability. There is much that needs to be done, and many legacy IT inhibitors are now pressing. But making the case for significant new investment in technology infrastructure, systems, and services, especially where these are adding to revenue pressures, can be difficult.

This is not to suggest that the business case for digital and IT investment is not strong. More than ever, the case needs to be expressed not just in terms of IT functionality, resilience, supplier upgrade costs or IT growth pressures but in terms of wider public service benefit:

- Realisation of value to the public and wider public sector services.
- Addressing capital and revenue pressures across and between organisations.
- Supporting service integration and deeper collaboration around related services.
- Addressing the risk and costs of change more directly, in areas such as data quality.
- Refining prioritisation of digital plans based on outcome measures of public needs.

It also represents a challenge for digital strategies and IT plans. Many public service digital strategies, when examined closely, are just rebranded IT strategies, not true digital change programmes. This will be an increasingly limiting factor on progress in digital trends for 2022 (see figure 9).

Public sector CIOs in 2022 should consider where the main pressures come from, and how they can best address them, often by working with professional colleagues, suppliers and public service partners, alongside their IT teams:

- There are often just too many change programmes. Consistent prioritisation and focus will be needed.

- Legacy IT is not just a past problem, but continues to grow with a multiplicity of fragmented cloud services.
- Accelerated pace of change driven by Covid, IT opportunity and even Brexit will continue and add to pressures.
- Financial and wider capacity pressures will deepen – 'low hanging fruit' are all 'picked, processed and consumed'.
- Data risks will continue to expand exponentially, and need new methods may be needed to ensure controls are adequate.
- Digital requires a 'whole organisation' approach – silos compromise a digital operating model.
- Public expectations have changed in favour of digital easier, more inclusive, faster, even safer – how can public services keep pace?

Different public service organisations will have a different risk appetite in term of new technology adoption and digital 'pace'. They will also have differing constraints, such as capability, capacity, digital nativity, governance arrangements, partnerships in place and consistency in their digital models. It is these factors that will inevitably determine the speed of developments in 2022.

KEY MESSAGE:

In 2022, CIOs in public services need to take time out to review a variety of aspects of how they and their teams function, and how they can contribute, through digital and IT, to tackling wider challenges and pressures facing the public sector.

Figure 9. IT teams feel the pressure in 2022

Stronger integration of IT and service strategies is expected for organisational efficiency in true digital delivery models

More money for IT is required... but with tough business case expectations and better cost control to accompany this investment

Relating IT investment to service ROI needs to improve, and this can put pressure on IT relationships

IT performance is increasingly challenged and greater rigour and visibility are expected

IT (and other) supplier models should be reviewed to prioritise agility, flexibility, social value, 'green', and partnership, not just IT value

Conclusions

Digital trend analysis is always fraught with difficulties, and often, over-optimism. If that was not the case, we would all be living in 'smart cities', there would no longer be a need for CIOs, driverless cars would be everywhere, and we would all own 3D printers.

Whilst realism is important, the acceleration of digital delivery will continue through 2022, building on the pace created by the pandemic, fuelled by developing IT possibilities and by accelerated digital maturity.

This will bring some exciting new projects and a fundamental shift in prioritisation away from inward looking service value to wider public benefits.

But it will also bring some new tensions and challenges, especially for CIOs and digital leaders in public services:

- **Citizens will expect more**, and have become more digitally aware, and demanding in expectations of joined up digital services, often across traditional boundaries.
- **Digital inclusion has become a heightened priority**, with new types of barriers for citizens with accelerated digital roll-out.
- **Technology opportunities can look easy** on paper or as described by suppliers, but hugely complex and risky to deliver in practice.
- **Integration and sharing require cross-organisational agreements** on standards, priorities and architectures which present both technical and political challenges.
- **Legacy IT** will be increasingly challenged if it holds back digital progress, underperforms, fails, or just has unrealistic cost profiles.
- **Linking IT investments to improved public service outcomes**, rather than just better IT, can be difficult to do even when IT and services leaders work 'hand in glove'.

There is no doubt, despite the challenges, that public service digital disruption will continue and probably accelerate in 2022, including resolving outstanding issues from the rapid digital deployment during the pandemic, particularly around resilience and cyber risk.

There is also no doubt that, based on the amazing progress during the last two years, local government will continue to set a lead in 2022 in digital innovation, digital use and citizen engagement. Progress to date is to be applauded, often with fewer resources, less support nationally and a lower profile than other parts of the public sector.

> *"The role of Councils has always been to improve quality of life and community well-being. Whilst traditionally a 'back-office' service, the strategic importance of the IT department in enabling authorities to achieve these goals has been put sharply into focus during the pandemic, as well as their potential to leverage their expertise and infrastructure to directly contribute to wider social infrastructure issues, individual wellbeing, economic regeneration and environmental sustainability. During the Covid-19 pandemic, we have seen some great examples, from donations of equipment to support schools and children, partnering in the development of 5G testbeds, supporting local community schemes in the rollout of broadband to rural communities, as well as working with business leadership to help shape business priorities and IT roadmaps."*
>
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Acknowledgements

This trends briefing would not have been possible without the contribution of many practising CIOs and other professionals from around the world, and particularly in the UK. Their insight and contributions, alongside the Socitm team and the Local CIO Council members, have been invaluable.

Geoff Connell, Director of Information Management & Technology and Chief Digital Officer, Norfolk County Council

Alison Hughes, Assistant Director of IT & Digital, Worcestershire County Council

Mark Lumley, Director of ICT & Digital, London Borough of Hounslow

Giorgio Prister, President, Major Cities of Europe

Justine Resta, Chair MAV Technology (Australia) and Transformation Office Manager, City of Greater Geelong

Sam Smith, Assistant Director of IT & Digital Services, Cambridgeshire County Council and Peterborough City Council

Tim Spiers, Director of IT, Digital and Transformation, Oxfordshire County Council

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Helpful resources

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- Ethics in data, systems and digital delivery to support recovery (Socitm): bit.ly/3IsZQf7
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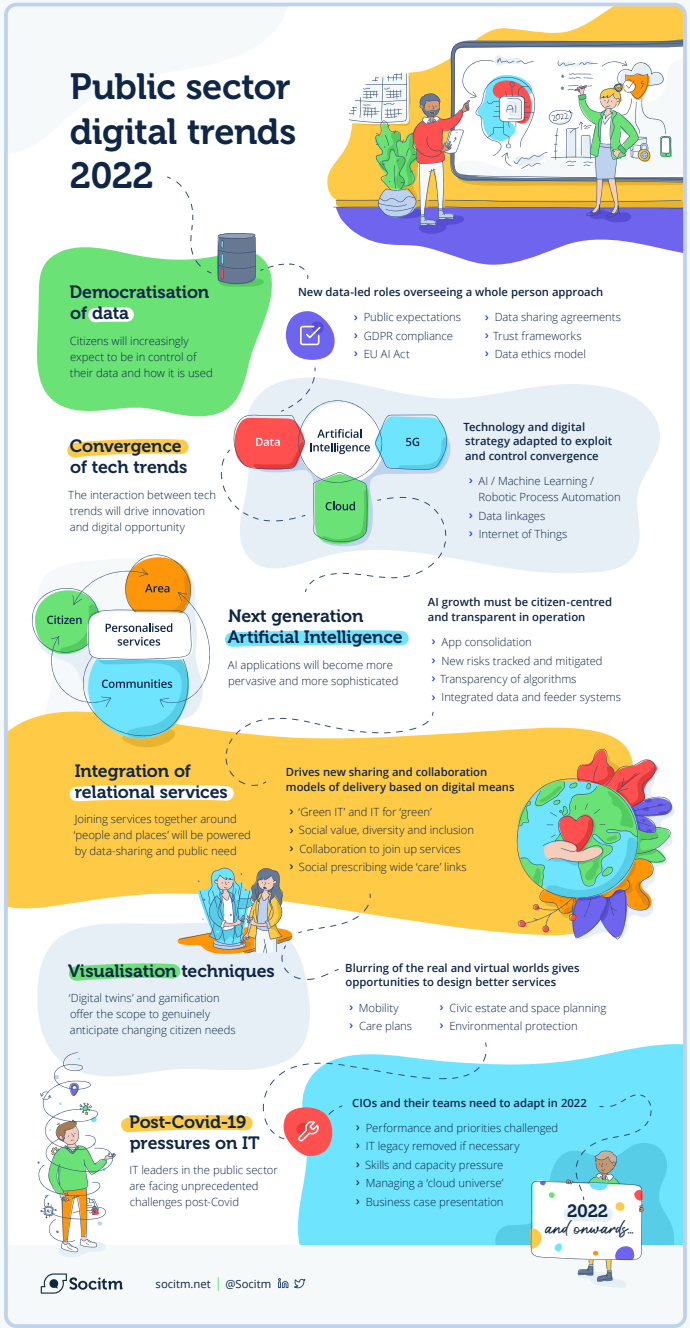
Public sector digital trends 2022 – infographic

View the infographic online: bit.ly/3JTF7ll



About this briefing

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MCE – majorcities.eu

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