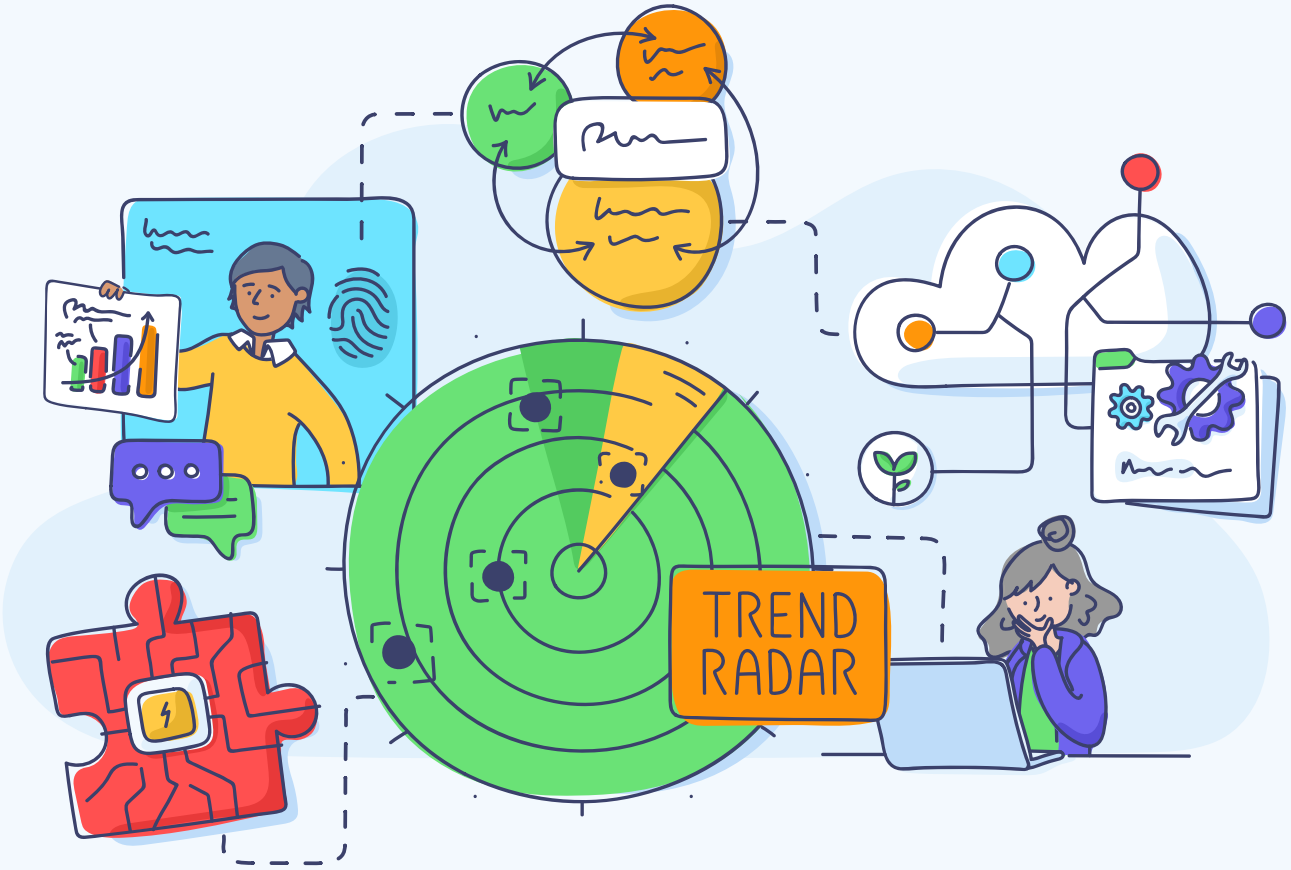


Public sector digital trends 2024

January 2024

Socitm

LOLA Linked Organisation of Local Authority ICT Societies

MAJOR CITIES OF EUROPE
IT USERS GROUP

Introduction

Socitm's Public Sector Digital Trends 2024 report is designed to help public sector leaders plan their digital journey, learning from others and applying insight to their own organisation and circumstances.

Feedback from those involved in this analysis indicates that it is a tough time, with digital demands rapidly growing and changing, whilst resources, including the availability of digital and IT skills, are constrained. Enthusiasm for new technical opportunity will therefore be tempered by the capability and capacity to realise the benefits and to moderate digital risks.

Each year we find digital themes common to all organisations and countries and which span multiple years. For example, all public bodies continue to be challenged by cyber risks and the need to improve data quality and use. At the same time, global events are less predictable and have had a significant national and local impact on public services. Examples include the Covid pandemic, economic downturn and the impact of the war in Ukraine. These types of events create a ripple effect than can disrupt digital plans and require a resetting of technology priorities.

This is why we talk about 'trends' rather than 'predictions'. 'Predictions' imply some sort of mystical prescience. 'Trends' are about enduring change – those digital impacts and technology developments that will, over time, have a lasting effect. The analysis in this year's report of what we got 'right' (and 'wrong') in past reports, demonstrates this enduring feature.

Our format also continues to distinguish between 'digital' and 'technology', whilst acknowledging that the two functions must work 'hand in glove'. The distinction is easy to describe, but often harder for public service organisations to implement:

- '**Digital'** is about new ways of working flowing from technology deployment. It is less about the 'IT' and more about business, process, and culture changes.
- '**Technology'** is about 'IT management and deployment' – harnessing new IT, managing supply chains, ensuring IT infrastructure is (and remains) resilient, responsive, accessible and available.

The distinction is important – for example, best practice IT management can mask poor digital behaviours, allowing outdated and inefficient business practices to persist.

In particular, terms such as "*digital technology*" are confusing or even meaningless. Use of the term mistakenly subjugates 'digital' to 'technology' rather than aligning digital with culture, ways of working, organisational change service design and their maturity. The positioning of 'digital' is a consideration for public bodies in 2024 as they consider new leadership models and how to drive the pace of digital benefits realisation.

Trend analysis: previous years

Making predictions is always a tricky business – 'guess correctly three times in a row, and you can be considered an expert', or so they say. But equally, circumstances often conspire to derail what might seem to be otherwise clearly defined and foreseeable trends.

This year we take a look at our success in accurately identifying trends in our last five years of reports (from 2017):

- What trends have persisted, and which are new or changing?
- What have the fundamental drivers been (such as Covid)?
- What did we get right, and why?

It is clear that whilst we did get most things right, there was over-optimism in the pace at which new technologies would be taken up, and also different public service organisations inevitably have different sets of priorities and challenges, impacting the pace of adoption. Those organisational differences relate to factors such as local geography, demography, available resources, appetite for risk, differing politics, leadership style, and capability.

There are two clear lessons to be learned from this for organisations using our research in their own planning:

1. **Events get in the way and local priorities vary**, so care and judgement are needed in how our digital trends apply in your organisation, to reflect local circumstances.
2. **Consider and learn from your organisation's journey and strategic plans**: Learning from where your plans required adjustment will allow you to build in greater flexibility or realism in the future.

Whilst our analysis shows that whilst much is changed in IT and digital capability in public services over the last five years, there is also evidence to show that most IT trends and digital practices persist year on year, taking time to develop and to mature.

The factors that have impacted the overall pace of digital and technology change from our analysis of the past five years have been:

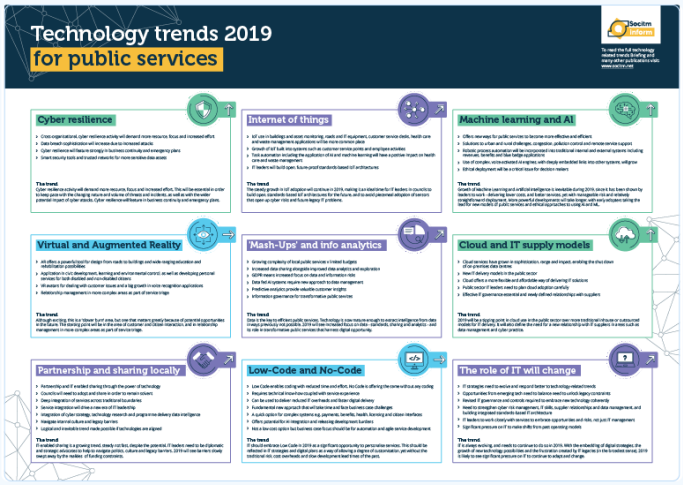
- **The rate of IT and digital innovation** in industry in general and in public service settings, showing what is possible, and helping to overcome inertia.
- **The impact of events, such as Covid**, which demand faster implementation of change and take-up of digital practices and changing public expectations.
- **Changes in economic conditions**, affecting supply chains, resources, skills retention and recruitment.
- **Significant increases in cyber risks** as the dependency of digital methods services grows, requiring a mix of technical, cultural and behavioural practices to keep pace.
- **A gradual move toward 'whole system working'**, requiring greater maturity in sharing data and systems, integrated policies and joined up and digital delivery.

Our digital trends assessments were mostly accurate, but inevitably impacted by unforeseen external events, such as Covid.

Our technology trends assessments correctly identified where adoption of new technology was likely to take longer than industry pundits and suppliers often expected (or hoped).

Year-by-year assessments

This ‘year by year’ assessment of our digital trends reports for the last five years highlights some of the key findings that proved to be accurate, and those that we did not foresee.



2019 predictions

We predicted that 2019 would be about early adoption of some of the new emerging technologies to support greater automation, along with maturing of digital transformation planning. We also expected a strong focus on modernisation of legacy IT and increasing concern about the growing importance of cyber resilience.

What we got right (highlights):

- A definition of the changing role of IT and technology supply models in public organisations, with updates of outdated IT strategies, stronger digital planning, and higher prioritisation of cyber.
- Emergence of data analytics and the increasing importance of ‘data’ as strategic priorities beyond IT management.
- The growth of low-code/no-code as a fast and low cost way of building citizen centric applications.

What we got wrong (highlights):

- We expected to see a faster adoption of partnership working and local shared services than proved to be the case. This remains politically challenging even in 2024, despite the clear business advantages.
- We correctly identified the emergence of virtual and augmented reality, along with artificial intelligence, but the pace of their adoption was much slower in practice than we expected.

2020 predictions

The 2020 digital trends report was published just before Covid struck. That was an unavoidable major oversight. We predicted a strong and growing focus on technologies such as artificial intelligence, Internet of Things, and 5G, and we expected greater adoption of digital transformation as a mechanism for exploiting greater value as resources became increasingly constrained.

What we got right:

- We accurately predicted a trend of changing workstyles (although not the extent to which Covid would impact working practices)
- The technology trends we identified (e.g., AI, IoT and 5G) becoming increasingly mainstream, including a growth in home and mobile working.
- We also spotted the emergence of new models of cross-sector working which were in practice magnified by Covid lockdown.

What we got wrong:

- We did not foresee the impact Covid would have, skewing priorities towards connectivity, video conferencing and prioritisation of remote access to services.
- Perhaps the biggest impact of Covid was the massive move towards accepting digital delivery within public services and by citizens – much faster than we could have foreseen.

2021 predictions

Still in the Covid period, and feeling its effects on digital adoption, we predicted a strong focus on digital leadership and the need to redefine digital services around people, with less focus on IT catalysts in their own right. In particular we anticipated a shift towards digital and data at the heart of service planning, and new working patterns becoming a staff well-being requirement.

What we got right:

- We foresaw the need to consolidate IT change after the response needed for Covid, particularly addressing exposed risks from the rapid adoption of digital services.
- We correctly tracked the trend towards the importance of data – noting how crucial shared and integrated data had been in response to the pandemic.
- We also spotted the need to proportionately increase IT budgets – whilst reflecting that this would still be tough on IT leaders making business cases for investment.

What we got wrong:

- We wrongly predicted a fundamental shift occurring this year towards localism and urban redesign – an opportunity flowing naturally from the impact of Covid. In practice this has proved to be a ‘slower burn’ in some countries such as the UK, where there is a reluctance to change in some services.
- We also expected to see a more rapid shift towards new supply models than proved to be the case – although this is a continuing trend; it is taking time to mature as contracts come up for renewal.

2022 predictions

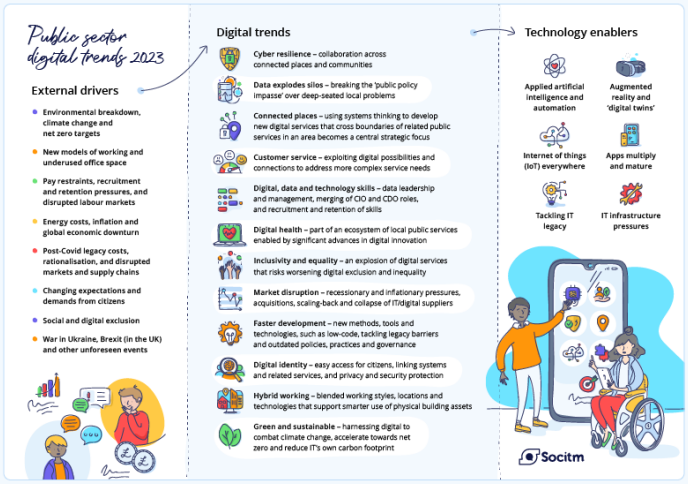
We saw 2022 as the year of significant change in service modelling in favour of digital delivery, building on the successful response to Covid. This included resetting risk models in favour of digital delivery, with a wider acceptance of online-only services. Our expectation was a surge in digital ‘pace and reach’ in the public sector, with designs that empower people, not depersonalise, or disenfranchise.

What we got right:

- We correctly predicted the growth in collaborative networks, and in prioritised development of personalised digital services.
- The need for better cyber resilience planning for communities, not just in public services or systems
- The need for a data strategy in organisations to control AI and IoT developments and to avoid a patchwork of incoherent digital systems and services.

What we got wrong:

- We did not anticipate the wider impact of economic downturn on the public sector and the tightening of finances resulting from international conflict and energy costs rises. These put a break on some projects and demanded higher return on investment with a tightening of finances.
- We also expected the emergence of a common inclusive ‘trust framework’ across public services, providing a platform for interoperability of digital identity solutions. This has proved more challenging in many countries, including the UK, and this has held back some digital public services.



2023 predictions

In last year's report, we were correct in seeing a growing expectation of 'digital' to mitigate the impact and the growing problems facing public sector leaders: austerity, global economic conditions, growing public expectations, the cost of living crisis, the need for integrated services across traditional boundaries, climate change, and recruitment and retention challenges with changed workforce expectations.

What we got right:

- We foresaw the growing prioritisation of 'channel blending' – the critical role of connecting services and providing easy to use online services to reduce inequalities.
- A nuanced approach to the challenge of legacy IT – not everything has to be replaced and there are alternative strategies that can be deployed to mitigate the constraints of older technologies.
- The fundamental role of data integration to break away from the limitations imposed by service silos, and the growth of data science as an important professional discipline.

What we got wrong:

- We expected digital health services to set the pace and example for digital services for citizens, partly because of the potential of technology, and partly because of the ubiquitous nature of health services. In practice, this is taking longer than we thought, and may still be some years away from becoming a reality.
- It is, perhaps too early to tell, but the pace of data governance maturity, the adoption of personal data vaults and integration of data across organisational boundaries appears to be taking longer than we had thought (or hoped).

We have put together a table detailing each technology and digital trend and the priority change over time that they experienced between 2019 and 2024. You can download that table in an Excel format (read only) below.

Public sector trends: a comprehensive review of previous reports

2019-2024 trends priority change over time. *Excel document (read-only)*

Contextual drivers

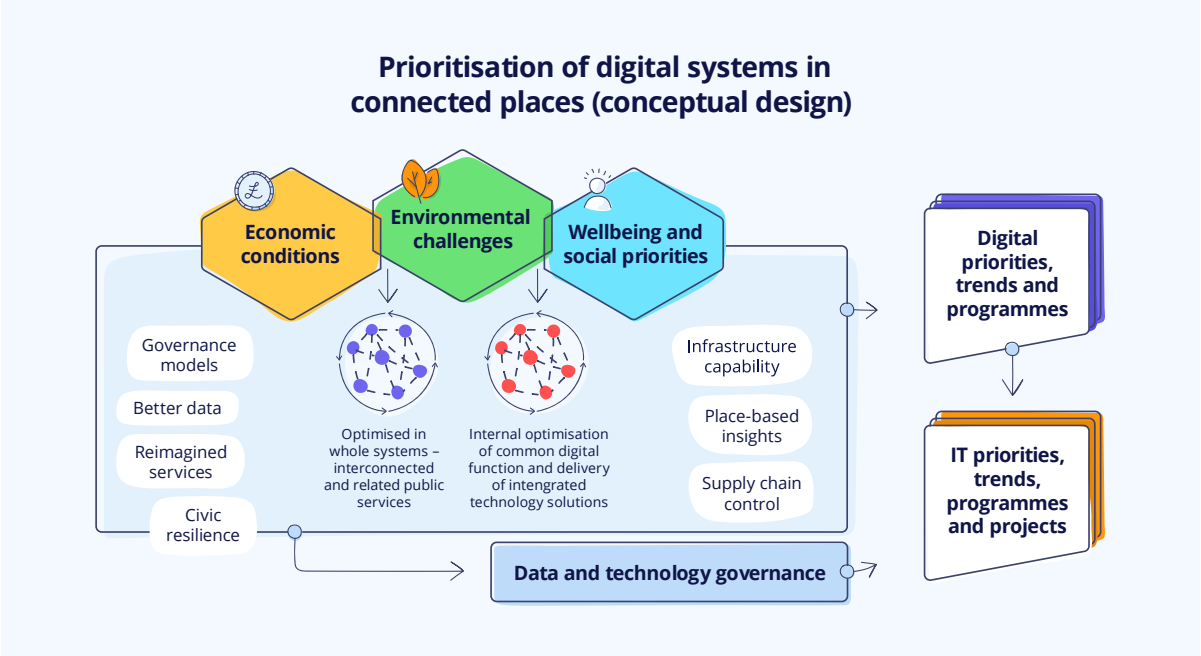
In 2024, public sector digital activity will be driven by a broad range of global and national factors, that can be impacted positively and negatively by digital and technology trends. Arguably, these external factors have never been more challenging for local public services, with a perfect storm of heightened economic, social, and environmental pressures, more constrained resources, increased assessments and inspections, political uncertainties and growing public demands.

In parallel, there has been a growing priority since the Covid pandemic for local public services to 'connect together better' to solve complex issues of 'whole system working' in 'Connected Places'.

Developing new digital capability is arguably the only possible solution to this collision of forces. In 2024, this will require public services to recalibrate, particularly in areas such as:

- Digital, skills and capability, from service delivery to board level roles.
- Community resilience, as more dependence is placed on digital systems and access.
- Innovation to deliver better outcomes for people, communities and places by harnessing data, systems and service remodelling.

Understanding how to take advantage of digital and technology opportunities in the context of connected public services will be an important shift in 2024, ensuring that digital and technology priorities are aligned, sufficiently resourced and controlled in the context of external pressures and service needs:

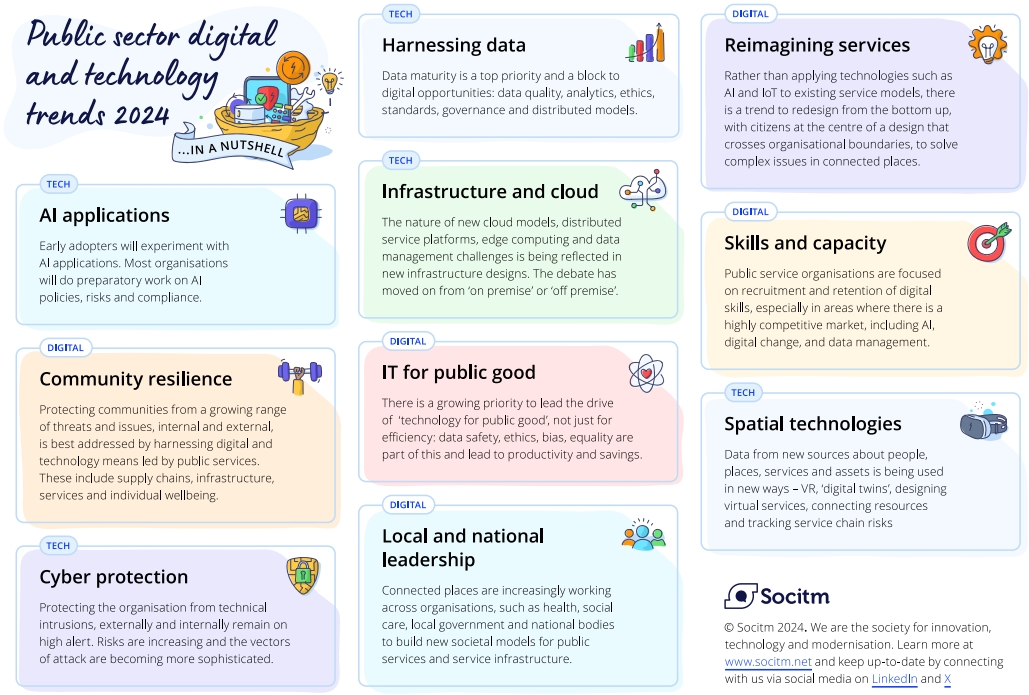


Impact case

[Trend analysis – 10 trends that affect the municipal and regional assignment]

The Swedish Association of Local Authorities and Regions (SKR) offers workshop materials for use by local governments based on its latest analysis looking towards the year 2035, describing five fields of tension and ten trends that will affect municipalities and regions in different ways. The analysis presents their top five digital and top five technology trends, set in the broader context of the pressures and drivers facing public services and the people, communities and places that they serve.

The 2024 trends in a nutshell



Digital trends for 2024

1. **Technology for public good**

There is a growing priority to lead the drive of 'technology for public good', not just for efficiency: data safety, ethics, bias, equality are part of this and lead to productivity and savings.

2. **Reimagining services**

Rather than applying technologies such as AI and IOT to existing service models, there is a trend to redesign from the bottom up, with citizens at the centre of a design that crosses organisational boundaries, to solve complex issues in connected places.

3. **Community resilience**

Protecting communities from a growing range of threats and issues, internal and external, is best addressed by harnessing digital and technology means led by public services. These include supply chains, infrastructure, services, and individual well-being.

4. **Local and national leadership**

Connected places are increasingly working across organisations, such as health, social care, local government, and national bodies to build new societal models for public services and service infrastructure.

5. **Skills and capacity**

Public service organisations are focused on recruitment and retention of digital skills, especially in areas where there is a highly competitive market, including AI, digital change, and data management.

Keep in mind that the position is more complex than this, give many given many of these digital technology aspects interact and are independent.

Technology trends 2024

1. **AI application**
Early adopters will experiment with AI applications. Most organisations will do preparatory work on AI policies, risks and compliance.

2. **Harnessing data**
Data maturity is a top priority and a block to digital opportunities: data quality, analytics, ethics, standards, governance, and distributed models.

3. **Cyber protection**
Protecting the organisation from technical intrusions, externally and internally remain on high alert. Risks are increasing, and the vectors of attack are becoming more sophisticated.

4. **'Spatial technologies'**
Data from new sources about people, places, services and assets is being used in new ways – VR, 'digital twins', designing virtual services, connecting resources and tracking service chain risks.

5. **Infrastructure and cloud**
The nature of new cloud models, distributed service platforms, edge computing, and data management challenges is being reflected in new infrastructure designs. The debate has moved on from "on premise" or "off premise".

Digital trends

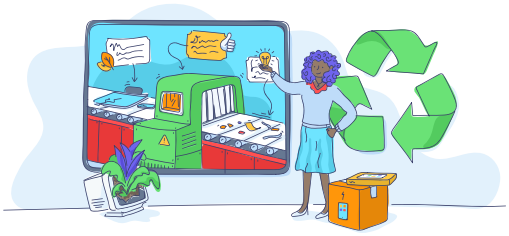
1. Technology for public good

Technology and digital services can be a huge force for good but there are also pressures that can take them in the opposite direction. For example, technology often has a significant carbon footprint, adding to global warming and electronic waste problems, many of today's biggest social challenges relate to IT abuse or dependency (such as social media and information misuse), and it has been implicated in the erosion of democratic rights.

These negative impacts have been brought into the public eye, in particular the risks and opportunities of technologies such as artificial intelligence (AI) and growing cyber risks that threaten privacy and security.

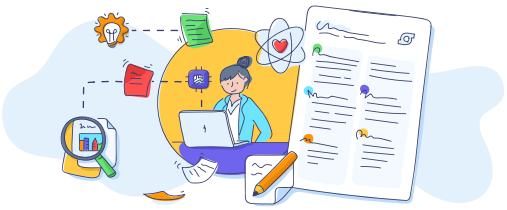
For these reasons, 2024 and beyond is like to see an increasing focus on responsible and secure use of technologies and data for public good and community wellbeing, accompanied by mitigating negative impacts. As Socitm's work on digital ethics demonstrates, organisations need to identify what is unique and different about an ethical, place-based approach to using emerging technologies and data. Whilst the same time explore how adopting a digitally ethical approach can help to design better services, leveraging benefits and better outcomes.

Making IT a force for good in 2024



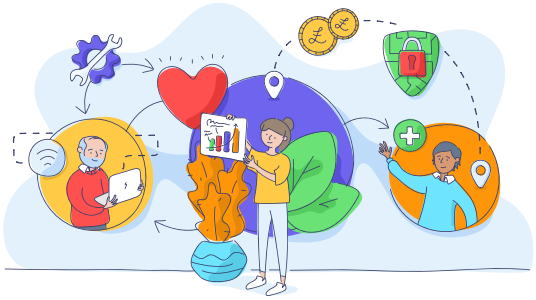
Climate change, net zero, sustainability and carbon reduction

- Tackle e-waste and ensure safe and responsible reuse, recycle or disposal, tracking carbon footprint and sustainability credentials of all IT suppliers and services
- Demonstrate the use of technologies that help with energy saving and promote clean energy industries
- Consider the impact of technology in areas of heavy processing, such as AI
- Promote good practice by being transparent in publishing data and guidance
- Consider the potential of ‘natural capital accounting’ to demonstrate the wider effects, positive and negative, of new IoT and digital practices



Jobs, skills and the impact of a digital economy

- Promote digital and IT apprenticeships in an area, linking to centres of learning. This can help to build a local skills base in new technologies such as AI, cyber and infrastructure design
- Work with suppliers who offer high social value in mitigating the impacts of digital change, and ensure that human rights are monitored in the supply chain
- Create local partnerships with organisations who share the same values and create new jobs locally
- Offer retraining and skills development for those impacted by digital developments
- Consider how local economies can be shaped to benefit digital citizens and workers



Data and information – risks and benefits

- Ensure broad and deep cyber practices that protect people, data, services and communities, and ensure an understanding and tracking of current risks
- Ensure transparency in data practices to build public trust in how data is used, shared and stored
- Be clear on the risks and benefits of 'data', through clear policies, accreditations and auditable practices, particularly as AI is introduced
- Tackle the risks of data bias, ethics, digital exclusion and inequality in how digital systems are designed, managed and promoted
- Work with suppliers and partners who support and deliver high standards in data and information management
- Always ensure digital change programmes focus on minority interests and risks, not just big efficiency or productivity gains for the majority

People (staff, residents, partners, citizens, voters, clients, users) at the heart of digital design

- Promote digital and IT innovation in areas with the biggest human benefit, and measure that benefit (health and well-being, equality and opportunity)
- Use digital and technology to protect public services for the future by strengthening business change capabilities and digital leadership skills internally
- Prioritise projects that help 'people and society', not just being driven by large suppliers, profits and narrow economic prosperity
- Encourage everyone to play their part in developing digital and technology capability and mitigating the risks that come with this
- Use digital solutions to empower people to be in more control of their interaction with public services, not constrained by outdated service models, processes and cultures

Public service organisations will be expected to take a lead on harnessing technology for public good, setting the policies and organisational standards, with which suppliers will need to comply.

Technology for public good - trend summary for 2024

Overview of the opportunity

- For public services the opportunity in 2024 is to demonstrate an understanding of the impact of digital change and technology, both positive and negative, internally, and more generally.
- This will help to protect people and the communities where they live from the impact of technology changes, building trust and setting out examples of best practice for others to follow.

Risks and challenges

- The biggest challenge comes from those who believe that harnessing digital change and technology is all too difficult or simply politically driven dogma. Being able to present a coherent story will help to mitigate this risk.
- In practical terms, unchecked technology will create negative impacts, locally and globally, particularly in areas such as mishandling of data, unethical use of AI, carbon impact of IT, digital disruption, and the human cost of embracing digital ways of working.

Early benefits

Having a clear vision for the role of technology and digital services in delivering 'public good', and mitigating its downsides will demonstrate to partners, suppliers, staff, and service users that the organisation understands the impact of change and how to harness the benefits that technology can bring.

Where to start

- Develop policies for responsible and secure use of technologies, artificial intelligence and data, digital design, supplier engagement and information handling.
- Set clear criteria for the role of IT in combating climate change.
- Set criteria for digital projects, assessing and prioritising the positive effects and mitigating their negative effects.

Application areas

- The topic areas in the section above illustrate the main application areas for 2024 (and beyond).
- There will be a focus on AI impact and how to ensure a balance in favour of benefits.
- Open engagement with the public, staff and suppliers will be helpful in explaining plans.

Advice for CIOs and digital leaders

Public sector CIOs and digital leaders will need to be careful how they articulate benefits, risks, and mitigation of IT impacts, ensuring that this does not sound like a 'voice of dissention', 'doom' or a negative brake on ambition or developments.

Impact cases from around the world

South London Partnership: InnOvaTe 'Internet of Things' Programme

The InnOvaTe Programme is using the 'Internet of Things' (IoT) to help South London Partnership boroughs manage and mitigate new challenges arising from Covid-19, drive economic recovery, and pilot solutions to help people live better and healthier lives.

Christchurch City Council, New Zealand/Aotearoa: Smart poles project

This video describes the Kōtuitui smart poles project in Naval Point, Littleton, that is designed to lace, interface, interlink and connect to enable better service provision and emergency response by stakeholders as part of a redevelopment of the area.

DuPage County, Illinois, USA: Winter weather solution

The DuPage County Division of Transportation (DuDOT) needed a solution that would provide operational awareness during snow events. ESRI's winter weather solution was able to provide a real time solution to meet the data needs for operational awareness, improved material tracking, and post event analysis.

City of Prato, Italy: Weaving the digital future in Prato

In his presentation to the Major Cities of Europe annual conference 2023, Paulo Boscolo sets out a pragmatic approach to curating a string of digital and ICT projects into a digital strategy serving the people of the city.

Socitm Says podcast: Green and sustainable IT with Alex Bardell and Nathaniel Comer

This episode of the podcast focuses on the global problem of electronic waste, the IT lifecycle emissions and the responsible disposal of electronic waste to reduce environmental impact, thereby contributing to achieving net zero targets.

London Borough of Hounslow: PETRAS – Taking IoT for a walk

Together with the digital and IT team, the leader of the council and I had a few councillors, residents and colleagues join us on a walk around Hounslow looking at sensors and internet of things devices — some real and some made up — to generate debate.

Technology for public good – beyond 2024

It is likely that 2024 will see a gradually increasing focus on this topic, but not a revolution. Beyond 2024, the topic will become more critical, for a variety of reasons:

- **Public pressure** for greater transparency, growing concerns over data risks and the demand for better digital services.
- **Emerging technologies**, such as AI, will enable new insights into the causes of a range of societal 'ills' and opportunities to redesign public services to mitigate and prevent their occurrence.
- **Worsening climate change** will be monitored by new AI, showing impacts and causes, with ever-more accuracy and predictive powers. The public will expect "green" choices to be made by the public services that serve them and their partners.
- **Digital disruption** impacting jobs and skills will grow with greater automation. Inequitable impacts on communities and places will need to be avoided.

In the next few years, public services will need to show that they are taking a lead on the use of digital, data and technology (DDaT) for long-term public good, not just short-term automation and efficiency.

For example, Forrester research predicts that there will be a big fall in trust in governments globally in the decade ahead, particularly in respect of their role in infrastructure management. Western leaders have an opportunity to set a global example in digital, data and technology infrastructure investment and how the IT industry can support new jobs, new opportunities and social value in areas such as personal data use and management.

Environmental, social and governance reporting (ESG) will develop over time and be augmented by the ability of tools, such as AI and digital and data analytics to develop natural capital accounting measures to better quantify the impact that public services have, through technology, on their populations and places.

A strong grip of this topic will drive economic, social, and environmental benefits, leading to wider prosperity and value. But the reverse is also true, so planning now is essential. There will be a key role for digital and IT leaders in this, being able to describe and lead a measured route to 'IT for public good'.

This message needs to be a positive one, balancing risks with benefits, and cost with opportunity, whilst always placing people at the heart of digital design.

2. Reimagining services

The implications of the technology trends for 2024 presented in this report are unprecedented. More than just making existing services more efficient, productive and user-friendly, these technology trends offer the possibility of a new definition of public services, built on dynamic digital and data foundations, which increase access and empower service users and workers.

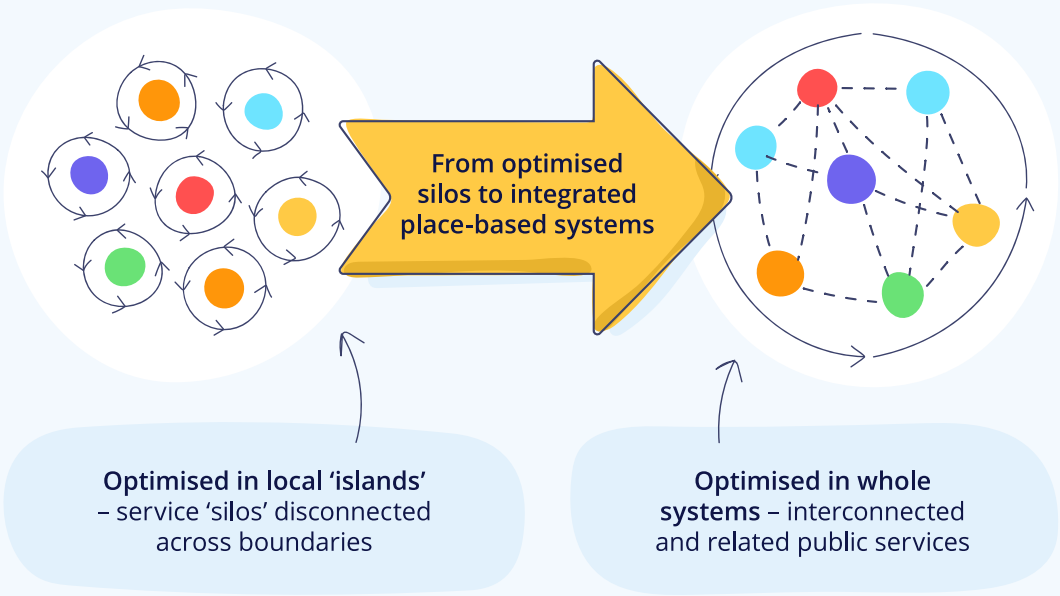
Even where services are face-to-face, such as in a hospital, they are increasingly underpinned by a mesh of digitised service components, from booking systems to tracking, diagnostics, connected and automated micro services, and sophisticated data analytics.

For example, ambient technologies which collect data in the background from multiple sources, are less invasive and 'always on', adapting dynamically in real-time to individual service user needs. This can lead to the creation of new virtual services, redesigned from the 'bottom up', unfettered by the construct of outdated organisational models.

This long-term trend of reimagining public services has already begun and will be an increasing focus in 2024 to reflect changing citizen needs, IT opportunities and economic constraints.

> "Our use of data has enabled us to adapt services and provide more tailored support to meet individual needs, but our work is not yet done. As technology continues to evolve, so must we. This strategy sets out how we will build on these successes and continue to innovate to improve services and support local people."
>
> **Cllr Margaret McLennan Deputy leader, London Borough of Brent**

Connecting local public services



Reimagining public services also lies at the heart of 'connected places', a concept and key policy theme for Socitm in 2024. Moving beyond narrow 'smart city' thinking, connected places are founded on digital models that embrace whole systems, with the aim of creating and sustaining environmental, social and economic conditions in which people and communities can thrive in any setting, urban or rural, large or small.

Socitm connected places themes

- Community resilience
- Data
- Democratic and community engagement
- Economy and business
- Education, skills and jobs
- Environment, sustainability and energy
- Health and wellbeing
- Imagining connected places
- Travel and mobility

Connected places – personalised services

Socitm connected places themes:

- Community resilience
- Data
- Democratic and community engagement
- Economy and business
- Education, skills and jobs
- Environment, sustainability and energy
- Health and wellbeing
- Imagining connected places
- Travel and mobility

Reimagining places - trend summary for 2024

Overview of the opportunity

- Public bodies should consider their role in developing 'connected places' and the contribution that digital and technology can play in delivering improved public service outcomes that cross public service boundaries.
- Redefining public services in this way is often the only option addressing resource limitations and the increasing need to connect across traditional public service boundaries.

Risks and challenges

- Complex change associated with service redesign is the biggest challenge. More than improving existing services using IT and digital methods, this is about cross-boundary working, automation and a whole system, place-based risk model.
- The lack of involvement of all stakeholders – staff, residents, suppliers and partners – insufficient consultation and lack of early involvement in design and development can compromise delivery of desired outcomes.

Early benefits

- There is an inevitability about fundamental change to public service provision enabled by digital, data and technology. Putting this off will not make it any easier, while gradual 'organic' change is likely to be too slow and generating only marginal improvements.
- Starting with overcoming boundary challenges that demonstrate collectively redesigned public services can produce early benefits.

Where to start

- Harness data to understand where to target limited resources and to reimagine service models to achieve the best possible outcomes.
- Key areas will be in relational services, where there may already be an appetite for collaborative projects that drive greater efficiency, productivity and improvements for residents and service users.
- Look at others' successes, locally, nationally, and internationally.
- The nature of 'work' is being redefined and is an opportunity to reimagine how services could be provisioned differently.

Application areas

- Consider related services, mapped against the appetite within the organisation for service redesign and partnership delivery, for example:
- Health and social care, with community services.
- Crime and its causes, linked to local government services.
- Scope for automation, enabling citizens safely to do more for themselves.
- Consider how a flexible workforce can be an opportunity for new types of service delivery.

Advice for CIOs and Digital Leaders

- There are key technologies that can stimulate this sort of change, such as low code/no code – embrace them.
- Consider wider supply chain opportunities in how data and digital services develop, both from the private sector and in how public-sector partners can cooperate.
- Help the organisation to understand the potential of technology and digital change to reimagine public services by starting the conversation in 2024. But keep grounded in reality.

Impact cases from around the world

London Borough of Brent: Tech-tastic Tale! Ctrl+ Alt+ Delivering Digital Transformation

Brent Council refreshed their digital strategy to become a digital place and a digital council. They refocus their priorities by changing the way they think and do things and prepare better for the future.

Birmingham City Council: Rethinking smart city governance

A city-wide collaboration programme that aims to equip Birmingham's institutions, communities and businesses with the digital infrastructure, data platforms and enablement initiatives required to thrive in the future.

Tauranga City Council, New Zealand/Aotearoa: City beautification project (video)

See how the council is empowering front-line grounds maintenance staff with information at their fingertips linked to the council's existing job prioritisation and allocation system.

Taupō District Council, New Zealand/Aotearoa: Energising the customer relationship experience

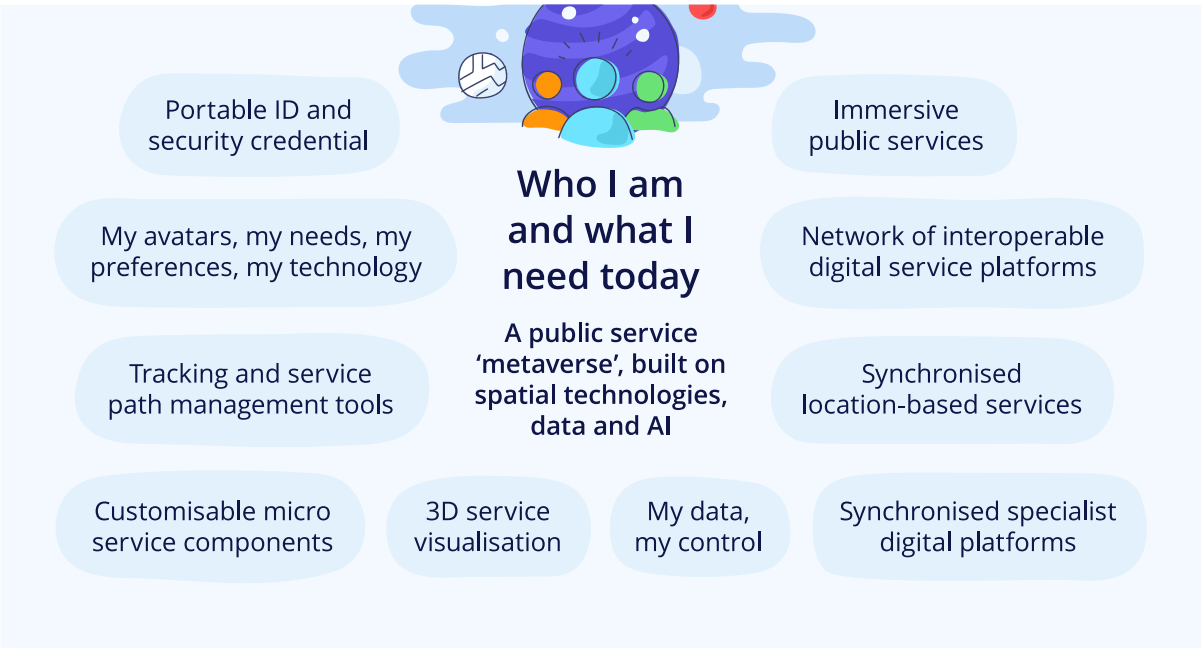
Video explaining the council's approach to virtual, hybrid working and virtual service delivery to energise the customer relationship experience for residents and tourists.

Reimagining services – beyond 2024

As virtual reality (VR) systems and artificial intelligence (AI) combine, so will the development of immersive reality, with a new range of applications that could spawn a public service 'metaverse' – imagine a world where individual citizens can build and link their own virtual services in real time, with portable personal ID security credentials, microsystems platforms and data.

Citizens already expect digital public services to be joined-up (even when they are not), easy to access on their smart phones and to generate meaningful value to solve *their* issues and needs.

Public service organisations will be expected to meet this challenge, including in how they are working towards better implementation with partners and IT suppliers to deliver a very different solution from traditional 'IT services'. This will be a big change in the decade ahead.



3. Community resilience

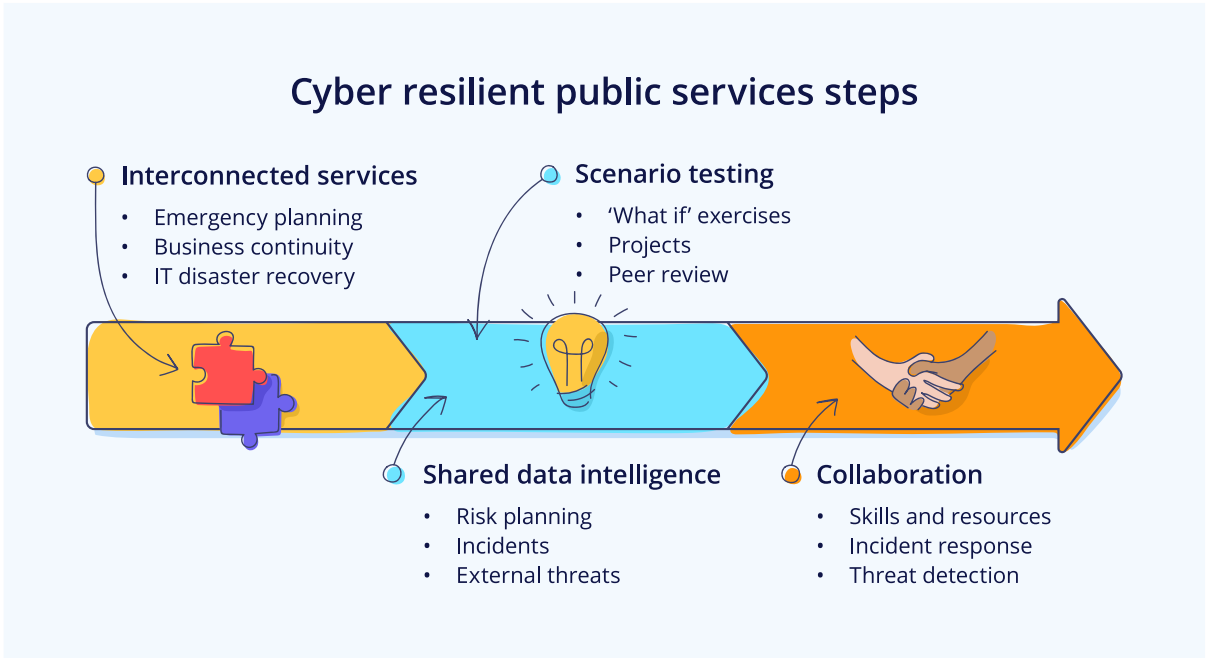
In the context of 'digital and IT', public service organisations have traditionally focused on cyber threats – protecting their perimeter network defences and being vigilant to internal malpractice. Stronger IT intrusion detection, and a better educated workforce have all helped organisations to prevent, detect and deal with cyber risks.

2024 will see a significant change in this agenda for public services, with a focus on the contribution of digital and IT to the mitigation of a community-wide risks, as public services operate in a connected system of inter-dependent services, communities, geographies, and infrastructures.

> "These new innovations are enabling emergency planners to model risks affecting the county to maximise response, improve communication and coordination and reduce, as practically as possible, the impacts on the wider communities of the county. Creating the new caravan dataset in particular will dramatically improve intelligence."
>
> **Steve Eason-Harris, emergency planning officer at Lincolnshire County Council who is also the lead officer for geospatial information and resilient communities for the Local Resilience Forum**

Protecting this wider system is key to the resilience and functioning of public services:

Therefore, 2024 will see a growing trend for public bodies to look to their digital supply chains, local partners, national bodies, and community organisations, to collaborate on digital solutions that help to build greater local resilience and community response to changing threats of all types.



Community resilience - trend summary for 2024

Overview of the opportunity

- The integrated nature of whole system working and the benefits that this integration can bring are evident in many areas. By addressing wider risks and dependencies, public services can be bolder in their digital developments, confident that community resilience and public trust are protected.

Risks and challenges

- It is no longer enough to focus solely within your existing organisational boundaries in contingency and resilience planning. Public service organisations in connected places need to work together to ensure robust, resilient, and responsive services that work together.
- Technology, data and digital infrastructures are enablers that serve and protect community interests and must themselves be treated as key risks.

Early benefits

- Early benefits always become clear if an incident occurs. However, being transparent about the risk and the benefits, and the role of digital in building stronger community resilience, can help to avoid a crisis.
- This preparation will also reduce the impact of an incident should one occur, whilst building trust and confidence in the security of community infrastructure and responses to crises for services, partners, and the public.

Where to start

- Bring emergency, business continuity, and IT disaster recovery together, across services and organisations, building an auditable, continuum of services and community resilience plans.
- Conduct desktop scenario exercises to demonstrate how digital, technology and data can provide new insights and methods to strengthen community readiness to civic disruption.

Application areas

- It is important to consider IT security and business continuity planning within the organisation, but then to consider the wider, distributed digital infrastructure that serves and protects communities.
- Consider how supply chains and key relationships with partner organisations can share data, technology and digital practices to strengthen resilience collectively.

Advice for CIOs and digital leaders

- CIOs should talk to their local WARPs and partners in public service organisations, to share experiences of where collaboration could reduce risks and costs of resilience investments.
- It is important to consider risks beyond IT and to ensure appropriate political and executive oversight. This means being able to communicate clearly, in business terms, the nature of community resilience and the role of the public service organisation in relation to this.

Impact cases from around the world

Lincolnshire County Council: Lincolnshire Resilience Forum extends use of geospatial tech in emergency planning

The council deployed image recognition and drone applications with a real time mapping dashboard to identify static caravans in the event of emergencies such as flooding and severe weather.

London Borough of Barnet: Barnet net zero campaign

BarNET ZERO is a borough-wide campaign with ambitions to achieve a net zero council by 2030 and a net zero borough by 2042, this initiative showcases a ground-up commitment to sustainability, stands as a beacon of transparency, innovation, and resilience.

Bristol City Council: Bristol One City

The Bristol One City Approach brings together a huge range of public, private, voluntary and third sector partners to work together to make Bristol fairer, healthier and more sustainable.

Christchurch City Council, New Zealand/Aotearoa: Smart Christchurch Strategy

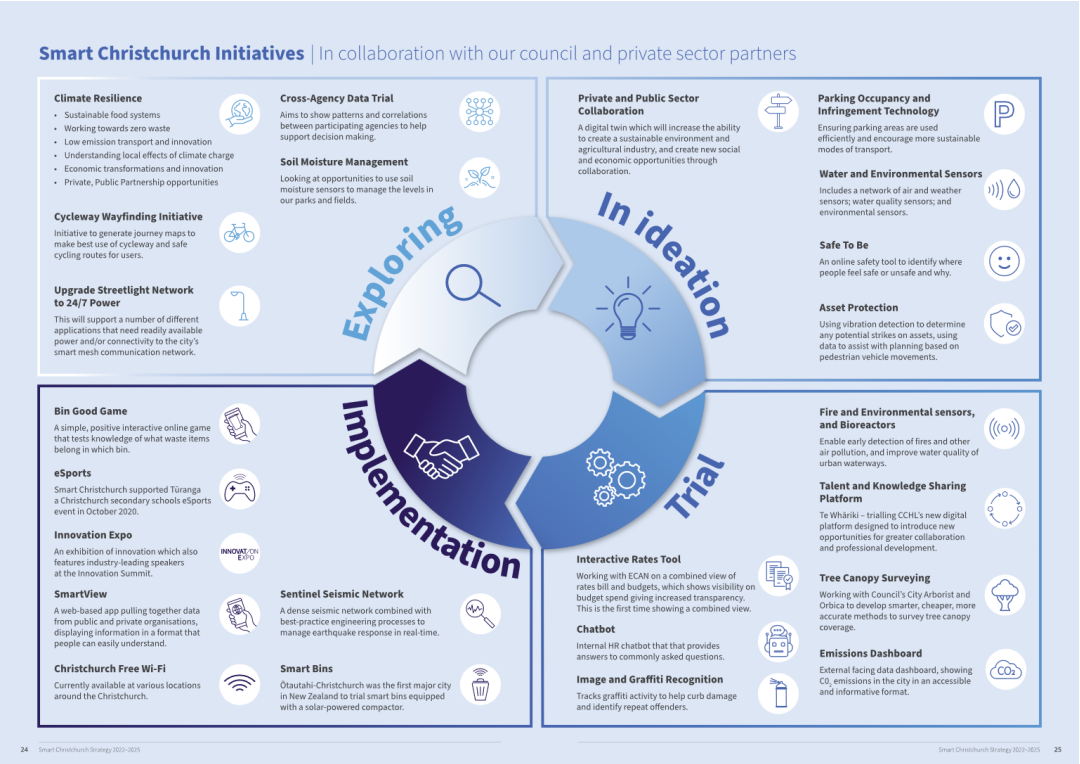
New technology, innovative citizen engagement and strategic solutions to help make the city a smarter, safer and more resilient place to live, work and play.

Wellington City Council, New Zealand/Aotearoa: Climate adaption digital city model)

Video describing how the city council is employing a data-driven climate adaptation roadmap to engage communities and stakeholders, using compelling digital tools and visualisation technologies to help build resilience.

Catapult, Connected Places: Best fit climate innovation – Solutions for India, Mexico and Peru

The Morgenstadt Global Smart Cities Initiative (MGI) worked with three mid-sized cities to co-designed prioritisation metrics and implemented solution across buildings, mobility, and urban planning sectors in three innovation districts.



Source: Christchurch City Council Smart Christchurch Strategy 2022–2025

Guidance

Department for Science, Innovation and Technology (DSIT)
Secure connected places international evidence project

The report provides an overview of the initiatives that countries have adopted at a regional, national, and international level.

Community resilience technologies – beyond 2024

The unceasing migration towards digital public services, whether replacing direct human-to-human interaction or enabling it, and the growing dependency on connected community infrastructures built on digital foundations, mean that the role of digital and IT in community resilience planning will continue to grow and mature.

Public service organisations have a central part to play in this beyond simply the provision of their own digital services on a resilient and secure basis. Their role will extend to the use of technology and digital methods to mitigate wider risks to social, environmental, and economic stability for the communities that they serve.

4. Local and national leadership

In 2022, the Central Digital and Data Office (CDDO) released a whitepaper, titled 'Transforming for a Digital Future: 2022 to 2025 Roadmap for Digital and Data,' outlining a unified vision for digital transformation across central government by 2025.

This roadmap outlines the ambition to drive efficiency, to improve digital skills and to modernise the way government services are delivered – an example of strategic vision for digital services being developed by national governments everywhere.

However, the real challenge with digital strategies, 'roadmaps', 'playbooks', and 'blueprints' lies in their implementation. That is the task for public services in all countries in 2024, balancing:

- The needs and interests of citizens
- Hyper-local services
- Regional development
- National government interests

This implementation challenge in 2024 brings together national, regional, and local priorities in joined-up digital projects, and depends on a range of factors, such as:

- **Skills and capability**: Do we have the necessary skills and understanding to implement complex change programmes that reflect national ambition and local needs? More than simply being able to buy in skills, a range of internal capability and experience is required that understands digital and IT opportunities from a national and a local perspective.
- **Authority to act**: The pace of change generates a need for governance and decision-making processes that can move in an agile and confident fashion. These require appropriate reward structures, as well as accountability for decisions, that cross traditional service boundaries. And they require sufficient devolution of ownership from 'central' to 'local'.

- **Resources and money**: Often seen as a limiting factor, the realignment of scarce public sector resources towards digital development and technology investment is not easy, depending on business cases that are difficult to construct and learning lessons from past problems. Underinvestment in both digital and IT remains a challenge for public services in 2024, along with a tendency to over-centralise.
- **Place-based leadership**: The need for strong, place-based digital leadership, within a national and regional framework, and local implementation teams, is critical for digital success of public services in 2024. Digital programmes that lack strong sponsorship from executive leaders, nationally and locally, are often held back by politics or practical challenges that could have been avoided.
- **Joined-up policies**: Connected places and 'whole system' working require national and local policies to be joined up across traditional spans of responsibility: geography, organisations, services, and systems. Sometimes national policies and developments fail to understand the complexity of local implementation. Local implementations can be constrained by undertaking them through the lens of specific services or institutions.

Public service organisations in 2024 will need to focus collectively to address digital planning, programme delivery, holistic policies, leadership, and governance spanning different tiers of delivery. This is central to maximising '*IT for public good*', '*community resilience'*, and the '*reimagining of public service*s' trends prioritised for 2024.

Local and national leadership - trend summary 2024

Overview of the opportunity

- In a post-Covid world, with the emergence of a range of new and rapidly maturing technologies, and a desire to redefine public services to optimise digital operation, 2024 presents an unprecedented pantheon of possibilities requiring careful consideration and leadership.
- This depends less on technology prowess than it does on strong, experienced and forward-thinking leadership that can span national, local and community interests.

Risks and challenges

- There are many risks and challenges in this area, particularly regarding the ability to break out of traditional hierarchies and spans of control, often with centralised resources, and decision-making.
- New governance models will challenge both individual leaders as well as the traditional powerbases on which their organisations have operated.

Early benefits

The benefits of collaborative and modernised leadership of digital developments are clear to see in regions that have made most progress.

Where to start

- Start in areas where there is a clear link between national and local priorities and identify the policy dependencies. For example, integration of health and social care at a local level was shown to work during the Covid period and, in many countries, is being enabled by new strategies, organisational and funding arrangements.
- Describe the models of leadership that work, the skills required and the governance arrangements that can make a difference, respecting but clarifying boundaries of responsibility.

Application areas

There are many areas, but the most commonly emerging in 2024 include:

- Health and social care
- Transport
- Environmental and economic regeneration
- Data sharing and common interests

Advice for CIOs and digital leaders

- This is a challenging area for CIOs and digital leaders since it depends on change outside their usual sphere of influence. However, starting conversations, which focus on the possibilities and best practice examples, can help to demonstrate the benefits.
- Within the scope of responsibilities of CIOs and digital leaders, there are opportunities for changing arrangements and engagement across regional and national digital leadership to encourage change.

Impact cases from around the world

Matt Masters, former Chief Executive at South Lakeland District Council: The Truth about Local Government by Matt Masters

Podcast talking about the need for fundamental transformational change within local government. The factors that need to be addressed before true change can take place and why change has not been widespread engaged with at this point in local government.

Region of Tuscany, Italy: Digital innovation in Tuscany

Gianluca Vannucinni sets out a digital roadmap for the region, working with a wide range of stakeholders including citizens, local governments, regional agencies and national organisations in his presentation to the Major Cities of Europe annual conference 2023.

West Midlands Combined Authority: West Midlands Plan for Growth

The West Midlands Authority has been working for some years to integrate transport, health and social care and other public services to benefit people living in connected communities. This has been dependent on new models of governance that combine local and national leadership, policies and decision making.

Local Government Management Association, Ireland: Digital Local Government – Working for Everyone (video)

Irish local authorities provide more than 1,000 services. To harness the power of digital to deliver our services more efficiently. Better services for the public, better ways of working for our staff.

Guidance

Department for Science, Innovation and Technology (DSIT)

Secure connected places playbook

Resources to help local authorities secure connected places ("smart cities") from cyber risks. This alpha release is subject to further testing and iteration.

Local and national leadership – beyond 2024

It is difficult to predict how things will change in this area, but there is a growing realisation that the success of national digital strategies depends on local, place-based implementation, and local digital programmes depend on externally focused leadership.

This means that the design and delivery of national systems, policies and standards must have sufficient involvement and influence at a local level at formulation, not as an afterthought to ensure consultation has 'ticked the boxes. New models of devolution that maximise the potential of digital, whilst ensuring compliance with national standards and regulations, can empower local communities to develop and implement digital services that reflect their own unique position: geography, politics, demography, population, health and density, and a mix of economic, social, and environmental priorities.

5. Skills and capacity

The dependency of public service organisations on digital skills and capacity has become a major challenge moving into 2024, in all countries. This is driven by:

- **Market pressures**, where demands for scarce digital and technology skills are outstripping supply.
- **Technology developments,** such as AI, cyber and data science, which require new skills and job roles.
- **Lower pay** in many public service organisations compared with the private sector, sometimes because these skills are undervalued or misunderstood.

Public service organisations in 2024 are combatting this challenge in a number of innovative ways:

- **Pay**
  Innovation in rewarding talent and performance, recognition and awards, performance pay, pensions, position impact of job with suitable benchmarking.
- **Marketing jobs**
  Role of IT, dependency and impact of digital, location, exciting projects with real public impact, imaginative adverts, winning awards.
- **Digitally mature**
  Leading edge work is attractive to IT and digital specialists. Led from the top, strong vision. Modern vibrant 'digital business delivering public service'.
- **New roles**
  Data science, AI, digital architects and engineers, agents of change – IT and digital jobs are maturing, changing and important.
- **Flexible working**
  Don't force 'back to the office', promote part time, support outside work interests and partnership working, balance work and life, offer new contracts models and job share.
- **Training and skills**
  Job share, apprenticeships, career development and planning, mentoring and coaching, time for skills transfer and growth, secondments

By keeping with of digital, technology and data developments, public services organisations are more likely to build and to stimulate innovation, creativity, and digital leadership.
Simply paying more for scarce digital and IT skills is not likely to be an answer. For most organisations, other tactics must be deployed to make public services attractive: marketing benefits, career opportunities, positive cultures, flexible working, valuing contributions, and innovations.

For many people pay is not the main or only motivator; they are often looking for a great place to work, to live, to bring up a family and spend their leisure time. They want flexibility and exciting work with prospects. Power lies with employees, especially younger members of staff, and things such as employee productivity monitoring with flexible working, should be treated with care.

Skills and capacity - trend summary 2024

Overview of the opportunity

- Being creative can attract and build a dynamic and capable digital and IT workforce, blended with external resources.
- This is an opportunity requiring imagination from HR, politicians and digital leaders to promote the benefits of working in the public sector and to be creative about recruitment, pay and working practices.

Risks and challenges

- If public service organisations misunderstand the role or value of digital and IT in a modern public service organisation, they will struggle to recruit and retain the skills they need.
- Outdated HR practices – pay, recognition, flexible working, career progression – are the biggest barrier to being able to compete and to avoid the costs of dependent on bought in services.

Early benefits

Sufficient capacity and capability in IT and digital will provide immediate value, particularly in optimising IT infrastructures, cyber and information protection and delivery of successful digital programmes that generate service and public value.

Where to start

- Digital leaders need to ensure that the Board has the knowledge, experience and understanding of the difference between ‘digital’ and ‘IT’, and why skills in both professional disciplines are needed.
- Consider IT itself – both internal and external: its current capability and benchmark performance. Is it a blocker or barrier? Why? What needs to change?
- Be clear on digital accountability of individual leaders across the organisation, including in the separation of technology outcomes and digital performance.

Application areas

- Flexibility and organisation of recruitment, retention and recognition of policies relating to digital and IT.
- Consideration of where skills are lacking and what needs to be done about this: for example AI, data science, infrastructure, cloud and cybersecurity.
- Onboarding of apprentices.

Advice for CIOs and digital leaders

- 2024 will be challenging for digital and IT leaders. Skills will be hard to come by, staffing budgets will be constrained, and external costs will increase. An imaginative and flexible approach will be needed to complete and to deliver what is required.
- The benefits of recruiting, retaining, and recognising digital IT skills needs to be explained to the Board, positively. CIOs need to balance ‘digital’ and ‘IT’ and explain the difference in business terms.

Impact cases from around the world

Norfolk County Council: Apprenticeships to provide a talent pipeline

The apprenticeship programme can help to increase the number of work opportunities, improve the services we deliver ed by the council and increase digital skills across the county.

Public Service Commission, New Zealand/Aotearoa: New Zealand's spirit of service

The Public Service Commission promotes the "spirit of service" which is underpinned by the country's Public Service Act 2020 and since 2018 has included an annual public service day and an awards programme.

Skills and capacity – beyond 2024

Ensuring that the public sector has the resources it needs to fuel its development of complex digital programmes, including internal digital and IT skills, will continue to be a challenge. Over the next few years, there will be strong competition for skills in areas such as data science, cyber, artificial intelligence, and complex infrastructure management. This is in addition to the ongoing need for project, programme, and supply chain management.

Public sector organisations need to determine what skills they need to retain in-house, and where it would be more cost-effective to use co-hosted skills, apprentices, contractors, or private sector partners, dependent on factors, such as size of organisation. Failing to address digital and IT skills planning will result in an expensive dependency on external resources.

Local partnerships can potentially be used to share scare skills and roles across organisational boundaries, and greater clarity on the difference between IT and digital can allow more precise identification of resource needs, accountability, and prioritisation.

Technology Trends

1. Artificial intelligence

Artificial Intelligence (AI) is arguably the key technology trend for 2024, in almost every sector. Barely a day goes past when we do not read about the amazing possibilities, or the significant new risks that this technology poses.

Governments around the world are responding in different ways: the global conference on AI held in the UK in November 2023 at Bletchley Park, EU AI Act and US President's Executive Order.

Meanwhile, Socitm has instigated a St George's House Consultation on the threats and opportunities presented by AI for local public services.

Generative AI in particular (creating new insights or materials from the data on which an AI tool was trained), and large language models (LLMs) promise huge value to the public sector, creating a radical shift in how connected data sets can be analysed, summarised, and used.

This offers a potential key to unlocking productivity within public service organisations. 2024 will start to see public service organisations using AI already embedded in existing applications and office tools. Socitm, and most public sector CIOs see AI as a transformation force for good, if the threats are controlled and other concerns are addressed.

> "At a time when we are trying to further develop and revamp the area, VivaCity's sensor's data is crucial in helping optimise travel and safety for all."
>
> **Dean Hubbard, project engineer for Dudley Metropolitan Borough Council**

Despite the hype, it is nonetheless difficult to predict the pace of AI adoption in the public sector. According to the Public attitudes to data and AI: Tracker survey *"The public is optimistic about the potential for AI to streamline everyday tasks, and to improve key public services including healthcare, policing, and education. Nonetheless, a spectrum of risks is recognised by the public. Most notably, there is widespread concern that AI will displace jobs, particularly among non-graduates, and that AI will erode human creativity and problem-solving skills"*. Alongside unquestionable opportunity, there are risks that will need to be addressed (such as made-up content – so-called *hallucinations* – bias, and new cyber threats), and the pace is likely to be dictated by two factors identified in this research:

- **The capability and capacity to take on complex AI projects** in the public sector, given many other pressing priorities and challenges, and limited AI experience. Projects are emerging, but they tend to be in specific and bounded applications, such as health diagnostics and customer service.
- **Compliance and regulatory concerns**, data quality, procurement policies, risks of bias, transparency of algorithms and concerns about liabilities will add to the barriers for public sector organisations and will need to be addressed.

This year's digital trends research indicates that, whilst AI is undoubtedly a significant development and the coming year will begin to see use of AI in diverse areas, the majority of public service leaders will take a cautious approach. Most will be undertaking preparations, reviewing guidance, measuring the benefits and risks, undertaking compliance assessments, developing policy frameworks, introducing governance arrangements and prioritising project planning. 'Data readiness' will be key to success, and another reason why 'data' is now such an important trend for the public sector.

Early application will be in areas such as: health diagnostics, customer service, data consolidation and reporting, property maintenance, road maintenance and traffic, office service automation, risk management, education and learning, legal services, auditing, procurement processes and more – the list will grow in 2024.

> "Policymakers need to know how many houses they must decarbonize, but they often lack the resources to perform detailed audits on every house. Our model can direct them to high priority houses, saving them precious time and resources."
>
> **Dr. Ronita Bardhan, head of Cambridge's Sustainable Design Group**

This means that in 2024 the use of AI in most public sector organisations will be exploratory, focused on specific areas and trials, such as voice recognition, data analyses and diagnostics, while developing polices to procure and manage AI and that contain its risks.

Optimising workflows and AI-supported decision-making will begin in 2024 using objective data analyses to make the decision basis more transparent. AI will begin to streamline processes where teams of professionals, committees and decision-making hierarchies currently ensure a collective responsibility and understanding of the impact of decisions.

There are many factors for public service organisations to consider in adopting AI in 2024:

- Analyse vast amount of data
- Balancing risk and benefits
- Cost management and efficiency
- Data integration and triangulation
- Data readiness
- Enhanced decision-making
- Internal staff productivity
- Prediction and prevention
- Process automation
- Sharing best practices
- Skills required
- Streamline processes
- Tech for good

Artificial intelligence - trend summary for 2024

Overview of the opportunity

- Specific application areas, broadening from public service interfaces into wider opportunities where trialling will begin.
- Analysis across disparate data sets to gain new insights, and potential individual and team productivity improvements.

Risks and challenges

- Managing the unintended bias, error, ethical concerns and reputational risk (noting that AI can sometimes simply ‘make things up’ if not checked).
- Skills shortages, both within and outside technology areas.
- New cyber risks from AI used as an attack vector.

Early benefits

- Mostly in increased service automation, but this will gradually grow in all areas of public service.

- Insight into opportunities for early intervention and preventative services.
- Exploring how AI can help to improve outcomes by understanding complex data relationships in a range of cross-service functions.

Where to start

- Ensure there is clear policy, ownership and understanding of AI and its implications in the organisation before deploying at scale.
- Undertake a risk analysis of AI (including new external cyber risks), and ensure human intervention is always present as a 'safety valve'.
- Develop in-house skills and senior/political awareness and leadership.
- Consider AI in monitoring and reporting.

Application areas

- Citizen service interfaces and workflows can be improved and automated, creating new and more engaging ways of working across a range of connected public services.
- Specific applications, for example, in health diagnostics and customer services – 'big data analysis' and the use of 'chatbots.
- Embedded in other applications and tools.
- Gradually, all services will need to consider the possibilities of AI.

Advice for CIOs and digital leaders

- Do not be swept along with the hype from suppliers and consultants; AI will take time, and care is needed.
- Develop a good understanding of AI opportunities, risks, and the functioning of generative AI, to be the organisation's 'expert advisor' on AI.
- Consider how the risks associated with AI are best controlled and be the expert in this area.

Socitm Says podcast – Episode 5: Generative AI with Kurt Frary and Sam Nutt

Impact cases from around the world

Derby City Council: Phone-based AI assistance

The innovative journey of Derby City Council and their use of phone-based AI assistance to dramatically streamline their customer service operations. AI assistants have efficiently handled over 100,000 queries, deflected 43% of calls away from human advisors, and contributed to an impressive budget savings of £200,000

Dudley Metropolitan Borough Council: AI sensors to tackle congestion hotspot

The installation of a network of 65 VivaCity sensors to tackle an ongoing congestion issue. The data collected from the sensors has allowed Dudley Metropolitan Borough Council to make a data-driven decision to tackle congestion.

State of Pennsylvania, USA: GenAI pilot for state employees

A partnership with OpenAI to pilot generative AI tools for state employees and to guide responsible future use and development of the tools in the public space.

Amazon Web Services (AWS): Business value of Generative AI

Examples demonstrating reinvention of customer experiences, productivity enhancement, creativity and content creation and process optimisation.

State of Maryland, USA: Revolutionizing the digital experience using AI

Plans to overhaul IT services in the state include new AI regulations; policies ensuring ease of access to state platforms; a collaborative approach to cybersecurity; and a new office dedicated to user-centric digital innovations.

Auckland Transport, New Zealand/Aotearoa: IM – Automating digital records management using AI from Auckland Transport

A video describing how Auckland Transport is using AI to automate appraisal, archiving and disposal of records, improving accessibility, transparency and legislative compliance.

Microsoft M365 Copilot: Videos of practical scenarios

The impact case videos demonstrate how M365 Copilot can enhance various situations, such as making meetings more efficient, increasing productivity, creating rapid business cases, modernising recruitment and optimising schedules.

Cambridge University: Pioneering AI project finds heat-loss houses

The model is designed to help local authorities and other bodies make decisions about which houses to target when they are trying to reduce heat loss from buildings.

Technology for public good – beyond 2024

2024 will be a turning point in the necessary preparations, plans and infrastructure designs to exploit AI in the public sector. Looking beyond 2024, AI is one of the most exciting, transformative, and potentially challenging technology developments for the public sector, leading to enhanced decision-making, and improved 'human-to-human' interface in public services, especially in surfacing complex data relationships:

1. **Identifying**
   Identifying risks and benefits of early interventions, and driving team and individual productivity, by linking and analysing complex data sets across systems, services and organisations. This includes complex business and service diagnostic capabilities.

2. **Automating**
   Automating customer service journeys, connecting related services around individual needs, preferences

and changing circumstances. Project processes will also be automated, especially as office/administration software will have AI capability pre-embedded.

3. **Analysing and demonstrating**
   Analysing and demonstrating the wider effects of service decisions and risks. For example, connecting the impacts of decisions in measurable ways across domains (environment, health, social well-being, and economic factors). New governance and processes will be needed to exploit this capability.

Local public services typically operate in complex environments, managing sensitive situations and data, often related to vulnerable people with complex and diverse service needs. With relevant safeguards in place, these are all areas where AI can offer significant future value, with a new data insight, better risk management and joined up service delivery.

Examples include tracking the causes and impacts of pollution and waste, identifying people at risk and strategies to protect them better, health and well-being diagnostics leading to earlier interventions, at lower cost.

AI in the public sector from 2024 will enhance rather than replace human activity. Designing simpler processes, automating project and resource allocation, helping to determine interventions and investments, and providing 'trigger alerts' when risks or deviations from 'the norm' require further investigation all offer opportunities to for better targeting of resources, services and outcomes.

Over time this will lead to the development of entirely new public services that it would not be possible to deliver today. Already there are early examples of quantum computing using AI in health research, and 'Natural Capital Accounting' to identify the wider costs of human activity to replace short-term business cases, leading to a fundamental change in how public services operate.

Ultimately, AI has the potential to play a significant role across the whole spectrum of public services, becoming a partner rather than a de facto replacement.

2. Harnessing data

The importance of 'data' is not a new trend. However, the focus on harnessing data in 2024 will intensify, as the extreme pressures on public services finances continue to grow. More and more public service organisations will recognise the need to treat data as a critical resource to target resources, address financial shortfalls and manage rising demands and needs.

This recognition will encompass:

- **Data quality risks** are magnified with the use of AI and automated analytics.
- **Data sharing** across organisational boundaries depends on data quality, standards and matching.
- **Data errors** or incorrect analysis leads to significant organisational liabilities, and potentially penalties.
- **Data is the key to greater productivity**, efficiency, workflow optimisation, and risk control.
- **Data in public services is often relational** – relating services, individuals and circumstances.
- **Data as a resource** requires new skills in data science, and data analytics, more than data protection.

Notably, for many digital and technology trends found in this research, data is often the foundation stone that needs to be put in place as the key to success. It is also a reason why public service organisations need to ensure that have a senior level lead for data in their organisations, above and beyond a 'data protection officer'.

Harnessing data - trend summary for 2024

Overview of the opportunity

- Data is the key to using many emerging technologies, such as AI and also to driving improved internal productivity and overall efficiency in public services.
- Data needs to be treated as one of the highest priorities in terms of skills, governance, and resourcing (data quality, protection, and use).

Risks and challenges

- Data represents a huge challenge. Creating massive 'data lake' projects without specifying the clear path to benefits realisations is a big risk.
- Data risks include bias, abuse, loss and misinterpretation. These will need to be mitigated with relevant training, plans and management.

Early benefits

- Ensuring a strong policy for use of data, not only helps to mitigate cyber risk but is an essential preparatory step for adoption of new opportunities such as AI.
- Creating flexibility and efficiency in reporting – performance data in particular.

Where to start

- Data assets of the organisation need to be understood – quality, appropriateness, value, and cost.
- Develop access to data skills and senior level responsibility for data across the whole organisation.
- Focus on data quality and consistency in standards and use across application areas.

Application areas

- Areas with the biggest data risk and business value. These may be in managing the growth of data from applications such as IoT and care systems or sorting out known data issues.
- Focus on data quality can help to exploit the potential of data matching, including in areas such as cross-organisation, working and special data analysis.

Advice for CIOs and digital leaders

- If your organisation does not have board level responsibility for data, consider how this might be achieved, and what data governance is needed.
- In particular, consider data outside the organisation on which services depend (e.g. knowing what data has transitioned to the cloud) and define a corporate and place-based data architecture accordingly.

Impact cases from around the world

Social Progress Imperative: The Social Progress Index

SPI draws together a wide range of datasets from different sources to better understand the root causes of inequalities and deprivation in order to redirect resources to support wellbeing, inclusion and better outcomes for people and communities.

Leeds City Council: Inclusive Growth Leeds

The tool helps measure how well Leeds is doing in terms of Inclusive Growth. It helps understand what's happening in different areas of the city (ward based) by looking at multiple parts and offering us a clear and unbiased measure of overall wellbeing in the city.

London Borough of Barking and Dagenham (LBBD): Tackling food insecurity

The council wanted to tackle the problem of food insecurity, as well as its relationship with homelessness by developing a "Community Food Club". By using the SPI scorecards, the council identified a ward with the highest potential demand and worked with local partners to establish the new service.

Digital Flanders: Data-driven, evidence-informed decision-making with and by citizens

Lieven Raes presents a citizen science approach to collecting and harnessing data to inform better and more targeted decision-making on air quality and mobility – Major Cities of Europe annual conference 2023.

Edinburgh City Council, Scotland: Our Smart City programme

The Smart City Operations Centre harnesses analytics to create useful data sets, such as pedestrian, cyclist and vehicle counts, as well as transport heatmaps. They are using these data sets to help better understand how people move through the city and interact with the built environment. This helps identify congestion, pinch points, desire lines, providing valuable information to support decision-making across the council.

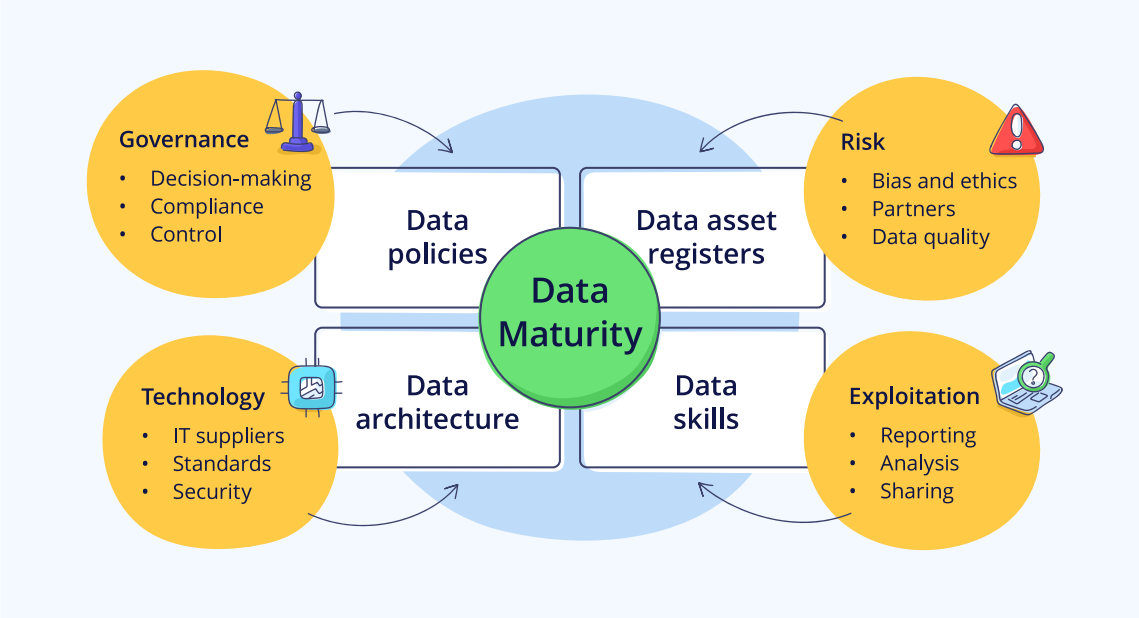
Kyiv City Council, Ukraine: How data can save lives and Kyiv Digital app

Anatolii Vovniuk sets out the approach being taken by Kyiv City Council to harnessing data through its City Command and Control Centre and the Kyiv Digital app to protect its citizens from man-made and natural disasters, including air raids and power blackouts – Major Cities of Europe annual conference 2023.

Harnessing data – beyond 2024

During and beyond 2024, the public sector will gradually establish the priority for data within the organisation, beyond the IT department and the Data Protection Officer (DPO).

This will include a range of functions and practices:



As data moves to become potentially the most critical resource in any organisation, ensuring its quality, standards and a consistent corporate data architecture are a basic starting position.

Many public sector organisations have more to do in this respect, and it is likely to be a task that will take more than 12 months in 2024 to achieve, given the need to adapt policies, governance, practices, behaviours, and many disparate data sets contained in proprietary applications.

In the longer term, the ability to link desperate data sets across organisations and systems will lead to new applications, such as natural accounting, that will allow decisions and actions to be based on a wider understanding of their implications and impact.

A growing market for data services will see the emergence and scaling-up of standardised approaches to curating, analysing, and interpreting data for deployment in ecosystems of local, place-based public services.

3. Cyber protection

Protecting the organisation from unauthorised access to data and systems and the potential for data loss or leakage, remain high on the list of priorities for CIOs in 2024.

Perimeter defence is no longer sufficient, particularly following the rapid deployment of remote devices during Covid and the exponential growth of IoT devices that are often unregulated, alongside up to date maintenance and patching of all system components. The task, in 2024, will be to keep pace with new threats and risks, such as AI, distributed cloud models and increasing use of IoT devices.

Re-testing IT disaster recovery with business continuity plans and controlling compliant processes for ‘on boarding new’ systems to tests for cyber weaknesses, is part of this.

> “The ‘Protective Domain Name Service (PDNS) for Schools’ offer will benefit education settings across the UK, protecting them automatically from a huge volume of malicious content which can cause huge disruption, remediation time and costs to schools.”
>
> **Sarah Lyons, NCSC deputy director for economy and society**

The challenge in 2024, especially for smaller public service organisations dependent on a wide range of different IT services and suppliers, is non-trivial, and it will be important not to neglect the priority of cyber protection in the absence of a cyber incident galvanising action.

There is also likely to be greater use of independent advice and external audits in 2024, in order to help organisations to address new and changing risk profiles objectively.

> "I am delighted to see this direct and focused support to help improve and strengthen cyber resilience across the care sector in Wales."
>
> **Reg Kilpatrick, director general Covid recovery and local government in the Welsh Government**

Cyber protection - trend summary

Overview of the opportunity

Cyber security is an opportunity, not just a risk, and that is how it should be positioned. Good cyber hygiene practices lead to lower costs, improved management of digital resources (data, systems, processes, workflows) and greater public trust in (and take up) of digital solutions.

Risks and challenges

The biggest overall risk is arguably to 'keep pace' with a range of new technologies, digital change and systems dependencies. Keeping pace requires investment in capacity and capability, as well as increasing the digital understanding and maturity within the organisation.

Early benefits

- Getting cyber security 'right' removes significant barriers to modernisation and digital progress. It reassures staff, partners, suppliers and digital users that systems and data are safe and reliably available when required.
- The modelling and scenario-testing of different threats can also help to identify wider risks or dependencies in digital service provision.

Where to start

- Keeping pace requires constant reassessment of the threats and changing risks. Working with suppliers, local public service partners such as WARPs and ISACs will help.
- Board level reporting of cyber risk in the context of services and partnerships will also help, especially if changing risks are corroborated through independent advice and audit.
- Maintaining a strong policy framework for cyber practices and associated board level reporting is a key starting point.

Application areas

- There is a wide selection of tools to assist with cyber protection, but the main application areas continue to be focused on people: staff, partners and systems users – vigilance is essential.

- Additionally, there needs to be early consideration of changing risks from new technologies such as AI and new cloud-based platforms.

Advice for CIOs and digital leaders

- CIOs must protect applications and network infrastructure from unauthorised access, while also ensuring that cyber resilience is seen in a broader context in the organisation – e.g. the link between IT disaster recovery, business continuity planning, emergency response and digital service dependencies in wider civic resilience.
- Involvement and leadership of the Executive Board and (in government bodies) politicians is essential – in 2024 the topic cannot be left to IT. CIOs have a role in making this happen and in ensuring business-led cyber reporting.

Impact cases from around the world

National Cyber Security Centre (NCSC): Cyber security service for schools
The Protective Domain Name Service (PDNS), which is already in place for other parts of the public sector, is designed to help prevent cyber-attacks on schools.

The Cyber Resilience Centre for Wales (WCRC) and Welsh Government: Welsh social care sector gets free cyber security training
The Cyber Ninjas training scheme – which is being rolled out by the WCRC and delivered by Matobo Learning through its platform – provides funding for 2,500 social care training licences in cyber security.

Guidance

National Cyber Strategy 2022
Department for Science, Innovation and Technology (DSIT)
This document covers key elements of cyber security from implementation to building a resilient and prosperous digital UK.

Secure Connected Places: Cyber Security Playbook
The Department for Science, Innovation, and Technology (DSIT)
A new resource offering practical and accessible support to improve the cyber security of their connected places, or 'smart cities', across the UK. National Cyber Security Centre (NCSC).

Connected Places Cyber Security Principles
National Cyber Security Centre
This guidance recommends a set of cyber security principles that will help ensure the security of a connected place and its underlying infrastructure, so that it is both more resilient to cyber-attack and easier to manage.

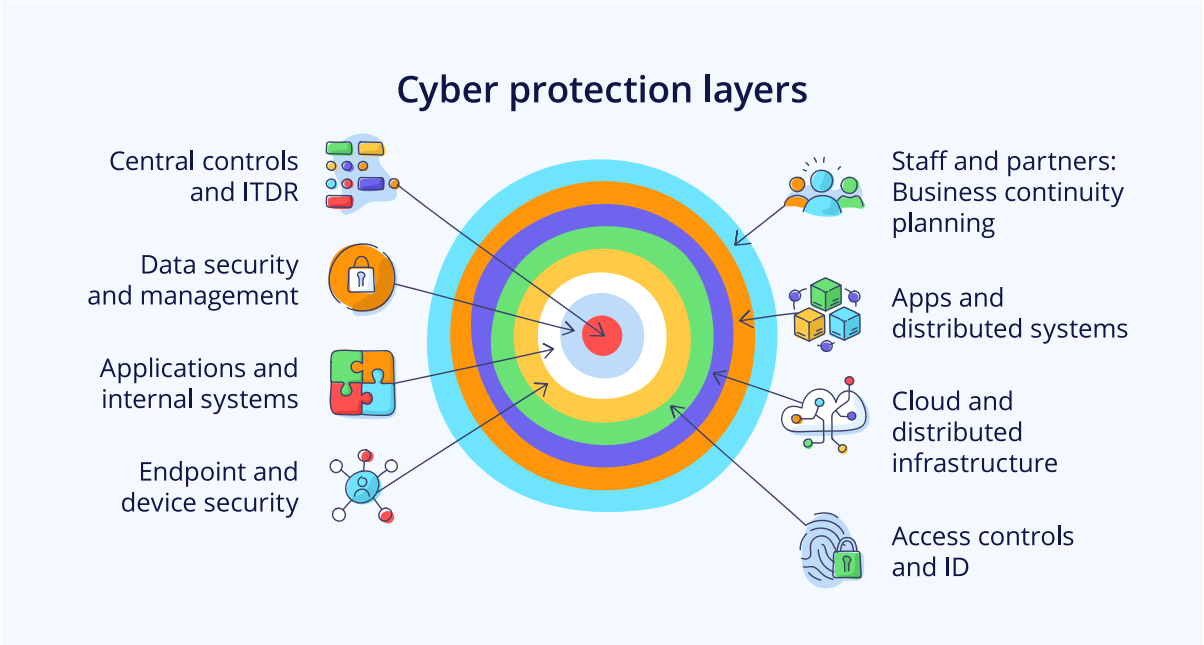
Building a cyber resilient service: A guide for directors of children's services
Local Government Association (LGA)
Support for directors and their senior team to develop proactive, protective strategies and capabilities to enhance the cyber resilience of their service; some recommendations are technical, some organisational and some are about your people.

Cyber protection – beyond 2024

As cyber management becomes more sophisticated and far-reaching, it will be important for public services to consider how the enhanced risk is best managed. An ongoing concern regarding cyber risk will remain the misuse of data, disrupted access to data and the loss of critical or sensitive information. But it will increasingly lie in the response of partners too.

Combating this requires an approach that includes using internal and external reviewers, with IT and non-IT responsibilities, and across linked organisations (such as health and social care), if not already in place. Cyber compliance and threat protection services, increasingly enabled by AI, will become more commonplace, but their deployment should not be at the expense of linked organisations taking responsibility for cyber protection.

A joined-up approach to cyber resilience within and between public service organisations, will help to ensure a collective contribution from public services to wider civic community protection:



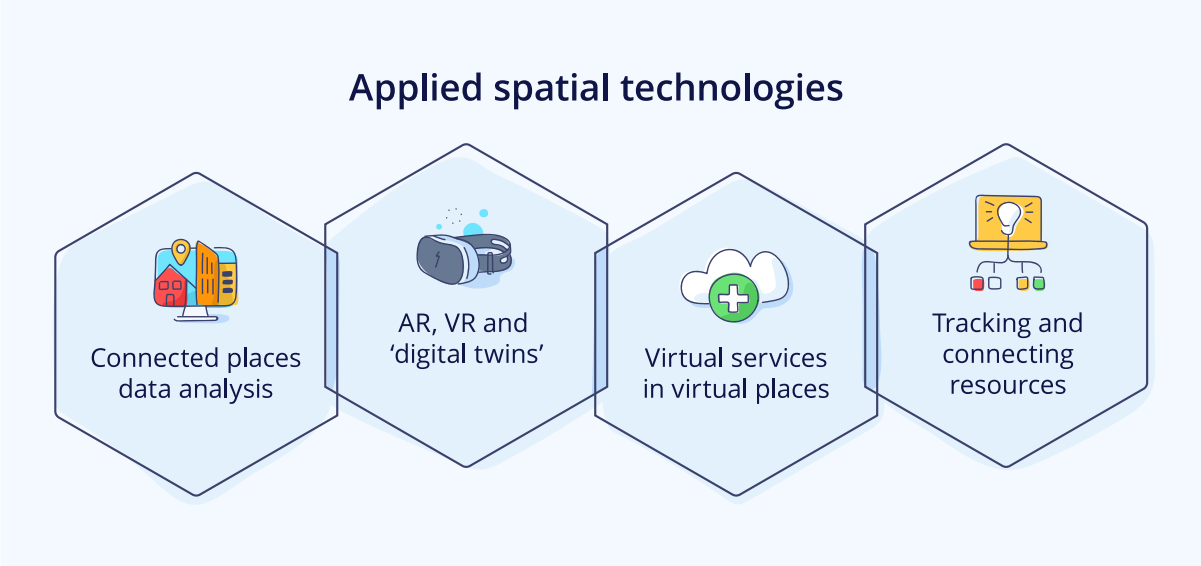
4. Geospatial technologies

It is debatable whether this theme is a ‘digital’ or a ‘technology’ trend, but for this 2024 report we added it to ‘technology’ because it comprises some key technologies utilising data related to place and space.

Over recent years our reports have assessed the opportunities of Virtual Reality (VR), Augmented Reality (AR), gaming technologies and ‘digital twins’. All of these technologies continue to gain ground with an increasing number of applications in public services.

> "Our Earth Observation pilot is aiming to keep the UK in its high geospatial orbit, increasing public sector capability and the demand for market innovation through testing new applications of EO data and technologies."
>
> **Thalia Baldwin, director, Geospatial Commission**

Rapidly reducing costs of satellite and drone technologies are opening up new possibilities for collecting and using geospatial data to address hitherto unsolvable problems. When connected to geographic information systems (GIS), IoT data, artificial intelligence (AI), and global positions systems (GPS), these 'spatial reality' tools can use data and information in new ways to solve problems:



Applied spatial technologies:

1. **Connected places data analysis**

   The move beyond 'smart cities' towards whole system working and 'connected places', whether rural or urban, is a major shift for public service design in 2024 and beyond, connecting data and services in new ways around citizen needs

2. **AR, VR and 'digital twins'**

   Augmented reality, virtual reality and the ability to use 'digital twin' modelling to test virtual services and scenarios before designs are finalised has become a powerful tool for public services

3. **Virtual services in virtual places**

   There is much talk about 'virtual hospitals', but all services can increasingly be designed in new ways that do not rely on geography or traditional service boundaries

4. **Tracking and connecting resources**

   Assets and resources are increasingly diverse and connected – utilities, buildings, equipment, sensors, street furniture and more

With a growing demand for location-based intelligence systems and availability of data, the deployment of geospatial technologies will be a growing priority for 2024.

> "We are delighted to be working with the Geospatial Commission on this initiative and we look forward to seeing how public sector bodies will work with our satellite data to support the delivery of critical public services."
>
> **Paul Russell, head of intelligence UK, Airbus**

Geospatial technologies - trend summary

Overview of the opportunity

- Understanding opportunities, such as infrastructure and asset tracking, service modelling and virtual service design can help to optimise a wide variety of public services, as well as well as exposing and managing connectivity vulnerabilities and barriers.
- Using the idea of special technologies, offers new ways of viewing, delivering and managing services, with more insightful place-based metrics.

Risks and challenges

- This remains a relatively new area for public service, despite much experience in the use of geographic information systems.
- Risks with this developing area lie more with the data quality and interpretation than the technology itself so improving skills and awareness of data management will help greatly.
- Sharing data insights and best practice publicly will help to mitigate the risks for others embarking on this area.

Early benefits

Early benefits will lie in being able to understand data insights and their benefits in a range of planning areas – civic space planning, infrastructure risks, and testing different virtual scenarios of new service designs.

Where to start

- Understanding the possibilities is a good place to start, linking the topic to short, medium and longer-term value planning. For example, using VR and AR to help with planning of virtual services and spaces, and geospatial data to help map community assets.
- Pick specific application areas that will deliver tangible benefit in the short term, whilst building a picture of long-term possibilities.

Application areas

- Harnessing geospatial technologies and data presents possibilities in a growing number of areas for local governments. 2024 is the time to start identifying the priority areas that align to business priorities.
- Examples include monitoring and managing pollution, infrastructure services and public assets, and in the way physical and virtual services can be redesigned.

- There is good evidence available to demonstrate how the use of address and street data in particular can generate significant return on investment for public bodies

Advice for CIOs and digital leaders

- CIOs need to prioritise this topic and consider the potential in the context of the business and digital strategies. This includes making the connections between individual technologies such as VR, AR, AI, IoT, and methods such as digital twins.
- Evaluating how this theme or the component technologies could impact existing digital and IT strategies in 2024, should start conversations with service and digital leaders about the possibilities.

Impact cases from around the world

GeoPlace: Nottingham City Council predicts impressive 6:1 ROI on use of address and street data

Nottingham City Council is seeing impressive returns from its investment in geocoded address and street data, and the use of that data across the organisation. Results of an in-depth study show the council generated an estimated Return on Investment (ROI) of over 4:1 between 2018 and 2022.

Department for Science, Innovation and Technology (DSIT): UK to pilot use of innovative EO technology for public services

The Geospatial Commission pilot will see public sector bodies able to access and test high resolution Earth Observation (EO) data and services.

Major Cities of Europe: How technology can help manage climate change

This presentation by Dr Alan Shark to Major Cities of Europe's annual conference (2023) sets out how technologies such as VR, AI, visualized data and advanced data capture can help to mitigate and manage the impacts of climate change.

The Association for Geographic Information: Deeper Understanding of Customer and Neighbourhood

They undertook a range of analyses and produced a series of thematic maps, an overall "index of vitality" to help advise on areas that had potential for development or better neighbourhood development.

Geospatial technologies – beyond 2024

This area of digital development, however it is described and named, will continue to grow as an exciting area of innovation, powered by increasing amounts of location-based data, above and below ground, which can be used to reconfigure and even invent new services, to better meet the needs of people and the communities where they live and work.

The challenge in public service application will be to retain public trust in these increasingly personalised, localised, sophisticated and portable digital services, and how the influence of the big tech is harnessed and controlled.

5. Infrastructure and cloud

IT infrastructure will have a higher focus for CIOs in 2024, as it comes under increasing pressure to cope with new volumes and demands for flexibility and resilience. In many public service organisations, and in the wider communities, where they work, there will be a need to reassess infrastructure, needs and capability in 2024:

- **Interoperability** requirements across systems, organisations, cloud platforms, and data sets are requiring a reassessment of the flexibility, standards, and structures for distributed infrastructure. Modern IT infrastructures are distributed, complex and depend on new tools to offer security and performance across distributed cloud networks.
- In many organisations **investment levels in IT infrastructure have not kept pace** with demand and digital developments. It can be hard to persuade business leaders of the need to invest until something goes wrong, whilst infrastructure costs are increasing.
- Well-designed infrastructure is the basis **for managing a complex patchwork of data sets across different cloud and internal systems**. Increased complexity, with a growth in apps, systems and new technologies, such as AI and IoT, require a reassessment to ensure coherence and consistency for compliance and reporting.
- IT infrastructure architecture design is **the key to simplified, flexible and secure access** to an increasingly complex mix of data and systems. The demands for increasing flexibility to enable new styles of working, and security in the face of growing cyber threats, requires continued focus. A key requirement is ubiquitous wi-fi, mobile and broadband access for all, not just focusing on 5G and beyond.
- As many **IT suppliers offer a cloud-only service**, it is essential that public sector IT infrastructure can embrace this, without compromising compliance, security, or data controls. At the same time, organisations need to be able to retain in-house services where they choose, particularly to control cost and maximise value.
- The **growth of digital services, and the dependence on these**, coupled with the **explosion of data and information** from new technologies, is driving unprecedented levels of data processing, straining existing IT infrastructure to its limits. Often a complete reconfiguration is required, not just upgrading infrastructure capacity.
- **New technologies are available to optimise IT infrastructure**, such as MPLS networks, delivering a level of observability of IT performance, opportunities for cost savings and risk mitigation that might otherwise be hidden. Increasingly complex, distributed, dynamic, intelligent and self-managing infrastructure services typically require reconfiguration and modernisation of traditional IT infrastructure.

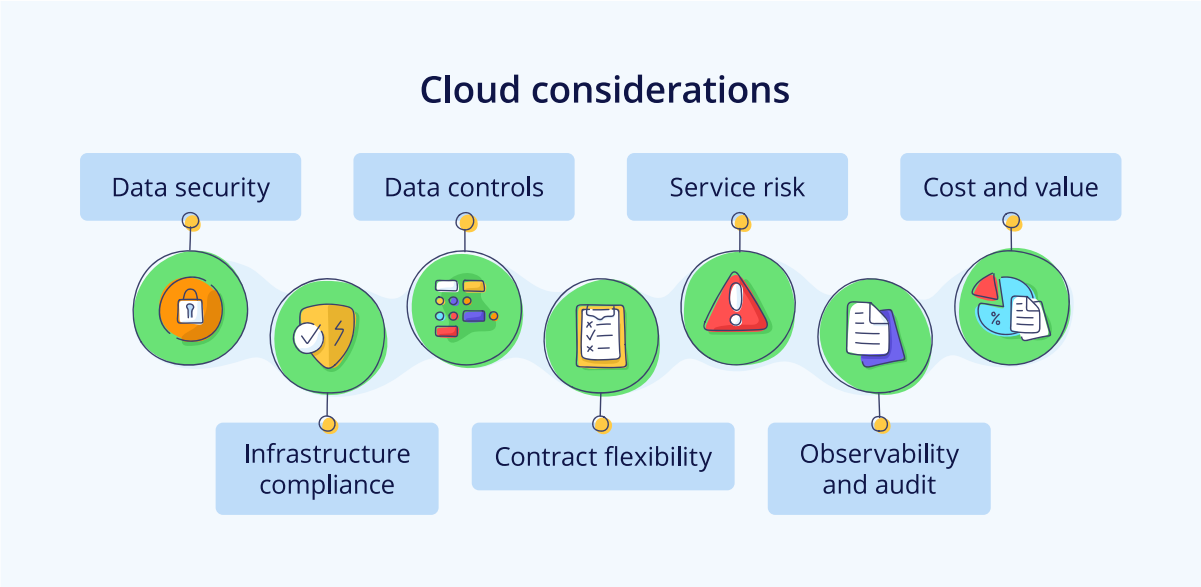
Over the last few years, the use of cloud computing and its potential to transform public sector IT infrastructure has changed significantly. In 2024 the debate will move beyond whether or not cloud is a safe way of processing data and hosting systems in the public sector as it is now an integral part of all technology architectures.

Many CIOs will be reviewing their chosen cloud services during 2024 to fit with changing infrastructure needs and to contain costs. This is driven by post-Covid working practices (anywhere, anytime, any device), software suppliers moving to a 'cloud only' delivery model and by the use of new 'heavy-duty' processing applications, such as generative AI, which cannot be run in traditional ways.

Public sector CIOs report not only that they are migrating to primarily cloud-based infrastructures, but the way they do so is governed by issues such as cost, resilience, and data control as much as cyber security.

> "Effective management of our asset portfolios is a priority for the council; access to accurate and reliable data will enable us to make evidence-based decisions and is essential to successfully deliver our objectives. Civica's cloud platform will support our dynamic nature and provide a truly flexible and adaptable solution."
>
> **Cllr Tony Costigan, East Hampshire's portfolio holder of property**

In 2024, CIOs will need to ensure a degree of control of hybrid and distributed (shadow) IT, since this can create huge hidden costs, risks, and inflexibilities for the future. In particular, public service organisations need to control devolved authority to buy new systems that do not comply with governance, data standards, security requirements, or deliver wider corporate value. Strong internal policies that control the choice of solutions and how they are used, including cloud-based systems will be important in 2024.



Cloud considerations for 2024

1. **Data security**

How are cyber practices and incidents reported (including near misses)? What tests are carried out and how frequently? Are staff cyber-trained and will they comply with the expectations of the client for high levels of data probity (e.g., 'cyber essentials+'). The same time, avoid being locked into portrait, proprietary cloud, data models.

2. **Cost and value**

Has the total cost of ownership of the cloud service been considered, including indirect costs? Does the contract restrict the supplier from hiking up service charges? Are there hidden costs or constraints such as data migration? How is this measure and reported on a regular basis by the supplier?

3. **Data controls**

Does the platform, the supply chain and supplier practices exhibit the necessary controls and protections reflecting the nature of the service and the data held? How are data controls checked and reported.

4. **Observability and audit**

Are there limits on how the client can review performance and data management practices of the supplier? How will audits be undertaken (as if it were an 'on-premise' IT function)? Can the totality of IT infrastructure and data use be understood, or has it become invisibly fragmented?

5. **Service risk**

How does the hosted service link to other services, systems and data stores within the organization? How are these interdependencies managed? How have business continuity plans been aligned and tested? What IT disaster recovery plans are in place?

6. **Contract fexibility**

How much flexibility is there in the contract – growth or increases, adding systems or partners, exit clauses, performance improvements? It is important that a growing range of cloud contracts for public bodies can easily be managed as whole, with consistency of practice and expectations.

7. **Infrastructure compliance**

Does the infrastructure, design comply with the clients' standards, practices and the regulatory framework within which it needs to operate? Does it compromise any part of data architecture, access controls or networking protocols supporting wider mobile flexible working?

Infrastructure and cloud - trend summary

Overview of the opportunity

IT Infrastructure can sometimes be taken for granted in public service organisations outside IT. It's something "under the bonnet" or "in the data centre". The opportunity in 2024 is to explain the unique and critical connection between IT infrastructure and the delivery of front line digital public services.

Risks and challenges

- The dependency on infrastructure, its resilience, as well as its flexibility, is becoming a significant risk and challenge for public service organisations.
- IT disaster recovery with business continuity plans should be tested every year against a variety of different scenarios. The key dependencies on IT infrastructure and potential vulnerabilities need to be visible at Board level.

Early benefits

Effective management of IT infrastructure to ensure its resilience, performance, security, and adaptability, will be a key enabler of some of the digital trends described in the report. Without this, it can undoubtedly become a significant barrier to progress in 2024.

Where to start

- IT estate and infrastructure need to be clearly documented, including the inter-dependencies, in order to understand and to manage risk.
- Planning ahead is key – capacity planning, and the linking of digital plans to the IT infrastructure implications.

Application areas

- Fibre to the home, easy to access and secure wifi in public places, and strong mobile network coverage everywhere are as important as 5G projects.

- Reviewing existing cloud applications, foundations (policies, supplier criteria, data requirements, compliance) and data dependencies to identify opportunities for optimisation, efficiency, or resilience improvements.

Advice for CIOs and digital leaders

- Ensure your IT infrastructure is well-documented, and that it is controlled, whether or not provision is internal or external.
- Ensure also that infrastructure development plans are signed off at board level and planned in advance, anticipating likely upgrades, costs, changes, disruption and the value that infrastructure investment can bring to wider digital opportunity.

Impact cases from around the world

East Hampshire District Council: East Hampshire Council plans new cloud deployment
The council is preparing to move the management of its property, estates, and asset information onto a single cloud platform.

The Icelandic Ministry of Finance and Economic Affairs: Digital Iceland
An ambitious initiative to accelerate the digital transformation of public services in Iceland in 2019. The overall goal was to streamline the way citizens and businesses access government services by creating more efficient, effective, and user-centric digital services and infrastructure.

Infrastructure and cloud – beyond 2024

This theme will continue to grow in importance beyond 2024 to encompass support for an increasingly complex inter-connected array of data sets, systems, cloud platforms and networks. This will include intelligent and self-managed infrastructure solutions, as well as dynamic infrastructure that manages a distributed network of technology resources within and beyond the organisation.

Some of this 'infrastructure as a service' (IaaS) will be driven by cost and the practicalities of demands on IT. But much will also be driven by data: the need for flexible and connected data access across multiple physical domains connecting the interests of individuals and their communities.

This means that in 2024 organisations must ensure that they have a proper grip on IT infrastructure planning and management, not just relying on the marketplace to deliver whatever is necessary to support their commissioned service offerings.

Local public services need to work together to ensure resilient, secure, and ubiquitous access to sufficient infrastructure capability and capacity to support digitally connected places. In some countries and in many cities, this is already well advanced. But in other places, and in many rural areas, the focus on urban development (and new technologies such as 5G and 6G) has left some communities behind.

Other trends

There are many other technologies and potential digital trends not listed here that we came across during research for this year's report. It's not that these are unimportant, just that they appear lower down on the list of priorities and practice.

For example, here are a few of the technology trends that we have covered in previous years:

- **Low Code/No Code:** Increasingly used in many organisations as a 'business of usual application' to build faster and better software applications, often associated with other functionality. It's useful and continue to grow and mature during 2024.
- **Quantum computing:** Beginning to appear in specialist application areas, such as research, although issues over environmental costs of processing require attention.
- **Blockchain:** Regularly featuring in articles, it still has a relatively low profile in the public sector, and significant concerns over processing costs remain.
- **3D printing:** This was promoted as a technology that would appear in every home and business. That never happened, but it is now an important application in a range of industries.
- **Driverless cars:** Whilst five years ago some predicted that public services would need to adapt transport planning to accommodate driverless cars, we correctly foresaw that regulation, risk and trust issues would take a longer time to resolve
- **Drones:** Drones are a widely used technology, mostly for surveillance and spatial planning applications. Expansion into, for example, home delivery using drones, we continue to predict is some time off.
- **6G:** Upgrades of mobile networks will continue, but the focus for most public bodies is on consolidating existing capacity (3-5G) and fixing areas with very poor or no coverage.
- **IoT:** 'Internet of things' is imbedded in many of our digital and technology trends for 2024, but as an individual trend it has become 'business as usual'. Its role in connecting networks of data is a powerful part of the digital trends that we identify in 2024.
- **Biometrics:** This is a technology of increasing importance. However, it did not appear strongly in the research that we undertook for 2024. It is more likely to be embedded in a range of new applications, especially around portable identity.
- **DNA and bio-tech:** This is becoming increasingly relevant in a range of health informatics applications such as gene therapy (more than just paternity suits and ancestry testing).
- **Social Networks:** These are ubiquitous but are also growing in the range of options available. It does create some confusion in how public authorities can best harness social media for better public service engagement and delivery in 2024, and beyond.
- **Apps:** Far from a new technology trend, the development of citizen-focused apps has become commonplace. However, the key challenge for public service organisations is to manage the growing array of task-specific apps, such as parking, health, and other place-based service apps ('my town', 'my council' etc).
- **RFID:** A technology that was a significant development when launched, RFID tags are now everywhere, implanted in assets from equipment to livestock.
- **Video conferencing:** Used to be a key trend until Covid, when almost overnight, everyone started using it. It is now a business as usual application, but still has got considerable potential to improve public services, as the technology becomes better than 'Teams' and 'Zoom'.

- **GPS:** Hyper-accurate GPS is included in our 'spatial technologies' trend. An accuracy within a few millimetres is opening up new possibilities in a range of digital applications.
- **RPA:** Robotic process automation is a trend that we have used before, but, like IOT, it is becoming Integrated in other applications, rather than a technology trend in its own right. The opportunities are considerable in digital automation.

Harnessing digital innovation in public services in 2024

All of our digital trends, and a number of the technology trends require a degree of research, experimentation and risk-taking in order to be successfully deployed. One of the challenges in 2024 for public service organisations is how to make space for innovation in the face of a growing array of operational day-to-day pressures.

Ironically, it is the unprecedented pressures on public services that generate digital innovation to change and transform operating models. However, taking on new and innovative projects, with their risks, uncertainties of success and investments needs, can prove difficult to justify.

From our research for this report, creating the right climate for digital innovation is the starting point, and will not only increase the likelihood of success, but also help to identify the right target projects and the basis for benefits realisation. Four themes standout from the leaders involved in our research:

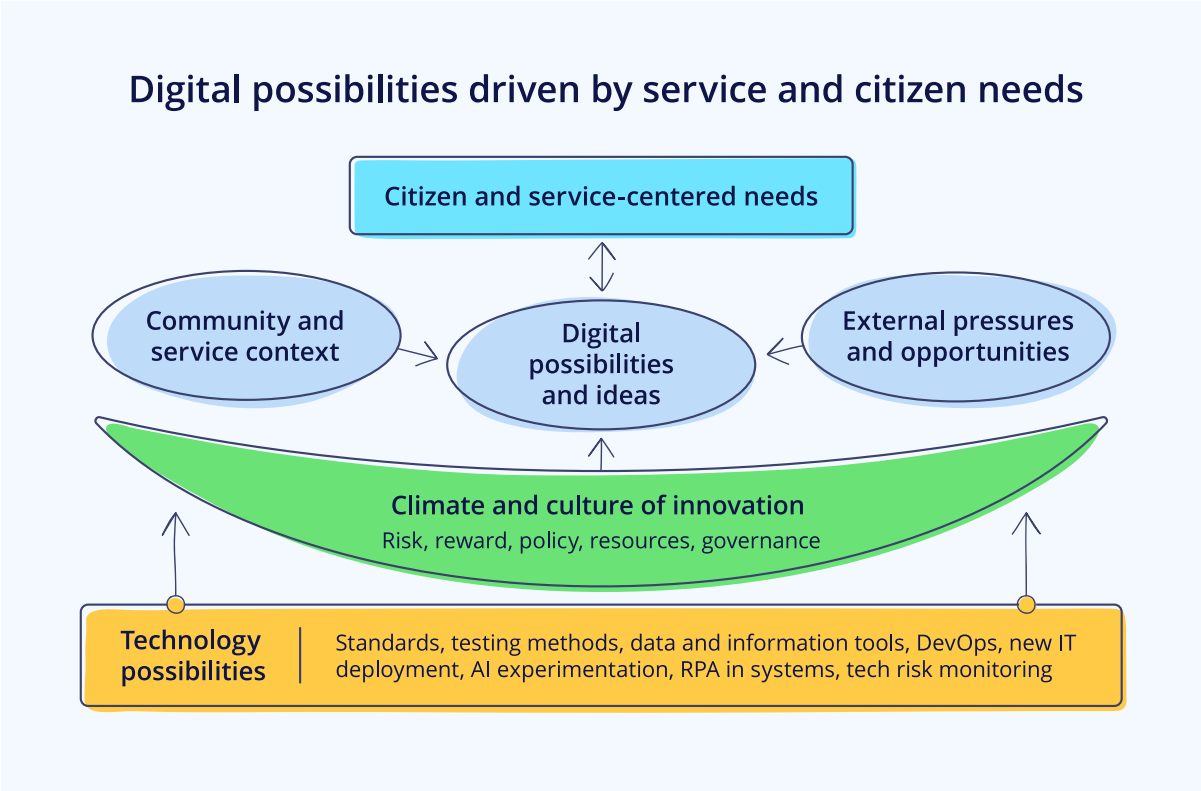
Having an appropriate **risk model** agreed at board level which defines appetite for risk. This means having structures that allow mistakes and waste withing boundaries of accountability, and with strong tracking and monitoring to trap problems early and stop major failures.

Creating the space for less structured digital projects and testing of new ideas. For example, allowing an informal approach to 'small works', a small budget for experimentation, rewards for 'good ideas' that can be delivered, avoiding the suffocation of over-engineered controls.

Developing appropriate **governance models** that track projects but tolerate flexibility. This may require a new approach from PMOs, board reporting and benefits tracking. Building 'centres of innovation' is not necessarily the best approach, since innovation can occur in any part of the organisation.

Promoting a culture that encourages digital experimentation and appropriate risk taking. This means defining the boundaries of acceptability in innovation works and how it should function in the context of the organisations priorities. Securing successful digital innovation advantage has a huge value to an organisation and few leaders are capable of delivering this. It therefore also needs appropriate reward and incentivisation.

Creating this climate, requires a clear understanding of the distinctive contributions of 'digital' and 'technology' innovations:



Public sector CIOs and digital leaders in 2024

Prioritisation, strong communication, and familiarisation with new technologies will be key to success for public sector CIOs and digital leaders in 2024, avoiding problems with technology projects that all too often afflict public services.

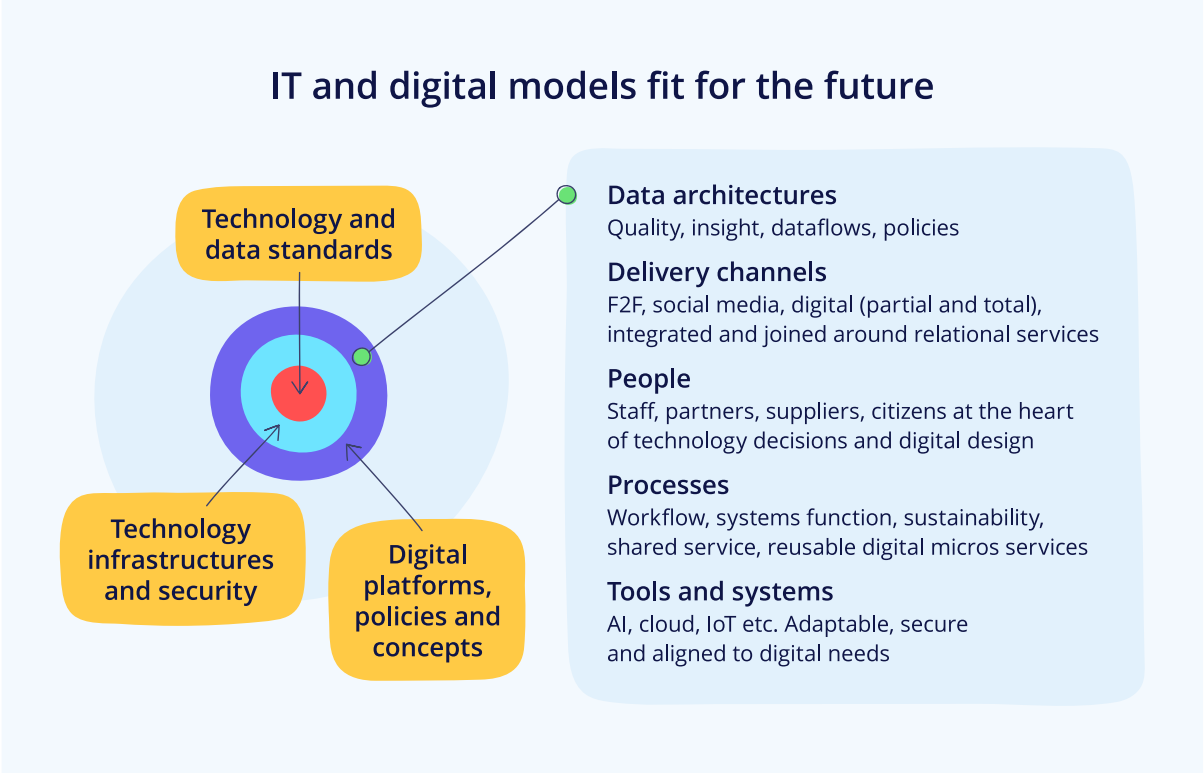
One area that CIOs will need to consider in preparing for the future, is the organisation of technology delivery models, including skills and governance. A new approach is needed on a number of aspects in preparing for the future. This will depend on wider organisational digital maturity.

CIOs and digital leaders can do much to encourage necessary change:

1. Consider digital and IT capacity and succession planning, and the balance between internal and external skills, especially in areas that will be required to exploit some of the new technologies.
2. Consider how IT and digital performance and business cases are reported, including risk modelling and benefits realisation. This includes an objective assessment about whether internal IT models and strategies are fit for the future.
3. Become the organisation's expert in new technology areas, such as artificial intelligence and some of the other key technology trends described in this report. Notably, ensure you have a sufficient grip on cyber risk across the organisation.
4. Ensure there is adequate focus on cloud and infrastructure, with appropriate architecture plans (digital and IT) to anticipate infrastructure pressures.
5. Do not blur the distinction between "digital" and "technology". It's tempting for CIOs to see their career direction in becoming a CDO, but care is needed to ensure digital maturity is not masked by technical competence.

6. Hone your political and communication skills – success in IT depends on the ability to persuade and influence others, especially in the need and value of investing in digital and IT.
7. Put in place an agreed technology architecture and digital architecture, being clear on the distinction in the governance model surrounding each these.

The following diagram captures the key elements to consider in how IT and digital sit in the wider construct of the organisation's activities and plans:



The pace of digital and technology change in the public sector in 2024 will have a significant impact on skills (a trend we identify this year as prominent). Simply buying in external capacity and specialists on a contract and consultancy basis is not always the best route. Apart from the cost, the lack of continuity, problems with team cohesion, and limited availability on the market can all create obstacles to digital programmes.

CIOs and digital leaders will need to assess the skills they need for the future, internally and externally, and consider some of the new roles likely to be sought after:

- Cloud Architect
- DevOps Manager
- Digital Risk Analyst
- Automation Engineer
- VR/AR Designer
- Chief Security Officer
- Digital CX Designer
- RPA Designer and Engineer
- Chief Data Officer
- AI Engineer and Architect
- Digital Product Designer
- Data Scientist

- Digital Architect
- Technology Architect
- Business Intelligence Analyst
- Digital Supply Chain Manager
- Cyber Security Specialist
- Security Automation Engineer

With so much digital activity, and so much potential from new technology, 2024 will be a challenging as well as exciting year ahead for digital and IT leaders in the public sector, requiring recalibration and adjustments to be prepared for what lies ahead.

Conclusions

Ranging from new technology adoption such as AI, to personalisation of services and faster and deeper automation, the 'pantheon of possibilities' revealed by our research a fast-paced and an exciting time for public sector organisations and their digital leaders in 2024.

But we also expect it to be a tough time, with significant pressures on IT and digital capacity, skills, resources, growing cyber risks and a need to act collaboratively.

Collaboration and joint working will be increasingly important in redefining digitally-based service models in connected places. Public sector organisations that resist changing old ways or remain insular will find it progressively difficult to solve their digital and service problems.

'Whole system' working in connected places will depend on significant change to organisational structures and their governance. We identify a dependence on national and local leadership working together in this respect.

We also see 2024 as being a turning point. The watershed shift to 'digital by default', or however else it may be described, occurred as a result of Covid. The challenge for public service organisations in 2024 will be to set a lead in how this digital momentum can be harnessed to ensure no one gets left behind, human interaction exists when needed, and that digital operating models work collectively to combat problems facing modern societies, their economies and the wider environment.

These fundamental shifts will demand political and executive leadership. Public sector digital leaders in 2024 will understand the distinction between 'digital' and 'IT', ensuring that these two important activities work closely together. They will show how to work across traditional organisational boundaries in how future digital services are designed and delivered while creating the conditions for sufficient IT investment that is astutely prioritised to ensure resilient infrastructure and systems. With new data insight and analytic tools, they will navigate a complex environment and build best practice examples that others will be able to follow.

In particular, the leaders in 2024 will have a strong grasp of how to manage technology, data and digital services for public good, not just for organisational efficiency, or following IT fashion.

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About the Author

Jos Creese is an independent digital consultant, researcher, and analyst. As an associate director of Socitm and a past president, he has undertaken a range of activities and research projects for Socitm, including researching and writing this Trends report for the past seven years. He has worked for several LOLA organisations and helped over 300 public and private sector organisations on their digital journey as a business consultant.

Feedback

If you have any feedback on the report please feel free to contact hello@socitm.net with your suggestions