Policy and Sustainability Committee

10:00 Tuesday, 22 October 2024

Digital and Smart City Strategy 2024-2027

Executive/routine
Wards

1.   Recommendations

1.1   It is recommended that the Committee approves the Council's updated Digital and Smart City Strategy.

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Report

Digital and Smart City Strategy 2024-2027

2. Executive Summary

2.1 The purpose of this report is to propose the Council's updated Digital and Smart City Strategy for approval by the Committee.

3. Background

3.1 In October 2020, the Policy and Sustainability Committee approved the Council's new Digital and Smart City Strategy 2020-2023 which set out our ambition to become a digital council.

3.2 This Strategy described how we would embrace innovative technical solutions to meet rapidly evolving and changing business needs, respond to the changing shape of the organisation, provide value for money and enable us to respond to opportunities and demands for joint working with our partners.

3.3 The principles within this Strategy provided a framework for how our future technology services will be designed, sourced and delivered enabling us to support new, safe and secure collaborative ways of working.

3.4 The updated strategy covering 2024-27 builds on the work of the previous strategy.

4. Main report

4.1 The Digital and Smart City Strategy 2024-27 builds on the work of the previous strategy and highlights the key achievements of the 2020-2023 Strategy.

4.2 The Strategy supports and aligns with the strategic priorities within Our Business Plan.

4.3 The Strategy sets out our approach to the provision of technology services for a modern efficient local authority operating in a digital age. This includes reviewing our current technology landscape and defining our future technology delivery model.

4.4   The Strategy focuses on providing secure, stable and accessible information systems to support the work of the Council and interconnects with our Data Strategy to enable the Council to better use and improve the information and technology we have to model and shape our services, focusing on positive outcomes for our citizens.

5.   Next Steps

5.1   Digital Services will report on the progress of the implementation plan to Governance, Risk and Best Value Committee annually as part of the regular Digital Services update.

6.   Financial impact

6.1   There is no financial impact arising from this report.

6.2   There will be costs attached to the implementation of the Strategy and that, where appropriate, individual workstreams identified in the implementation plan will require business cases to be approved before work can commence.

7.   Equality and Poverty Impact

7.1   This report is an update to the Digital and Smart City Strategy. Where appropriate, individual projects, contracts and programmes related the Strategy will have their own Integrated Impact Assessments.

7.2   The Strategy is aligned to the Council Business Plan objectives including the objective to end poverty in Edinburgh. This theme is throughout the Strategy and, in particular, the section on Digital Inclusion highlights the wider Council's approach to the use of technology to support this.

7.3   The theme of accessibility is also referenced throughout the Strategy and includes information on work undertaken so far and our commitment to ongoing assurance around accessibility standards compliance on our website.

8.   Climate and Nature Emergency Implications

8.1   This report is an update to the Digital and Smart City Strategy. Where appropriate, individual projects, contracts and programmes related to the Strategy will have their own Integrated Impact Assessments.

9. Risk, policy, compliance, governance and community impact

9.1 The Council's Corporate Leadership Team (CLT) risk register formally identifies digital capabilities, cyber security and information governance as a risk and ensures that sufficient mitigations and active management of risks continues to be undertaken.

9.2 The Council's Strategic Change Board actively monitors and tracks progress on all Council wide programmes including the ICT programme.

9.3 Digital Services and the Corporate Risk Team continuously review and update existing risks in relation to technology.

10. Background reading/external references

10.1 Digital & Smart City Strategy 2020-23.

11. Appendices

11.1 Appendix 1 – Digital and Smart City Strategy 2024-27

Digital and Smart

City Strategy
2024-2027

July 2024

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THE CITY OF EDINBURGH COUNCIL

# Contents

Executive summary

This Strategy is a revision of the Digital and Smart City Strategy 2020-23 and clearly defines how Digital Technology and Smart City Innovations can be used to transform the Council whilst supporting Our Business Plan strategic priorities:

1. Create good places to live and work
2. End poverty in Edinburgh
3. Become a net zero city by 2030.

The Strategy directly aligns with and supports the objective in the Business Plan to "Modernise and streamline the Council's core business processes to deliver better outcomes for citizens, and a more secure and efficient organisation".

The Strategy builds on the achievements of the 2020-23 Strategy and sets out our approach to the provision of technology services for a modern efficient local authority operating in a digital age. This will include defining our future technology delivery model.

The Strategy focuses on providing secure, stable and accessible information systems to support the work of the Council and interconnects with our Data Strategy to enable the Council to better use and improve the information and technology we have to model and shape our services, focusing on positive outcomes for our citizens.

Create good places to live and work

End poverty in Edinburgh

Become a net zero city by 2030
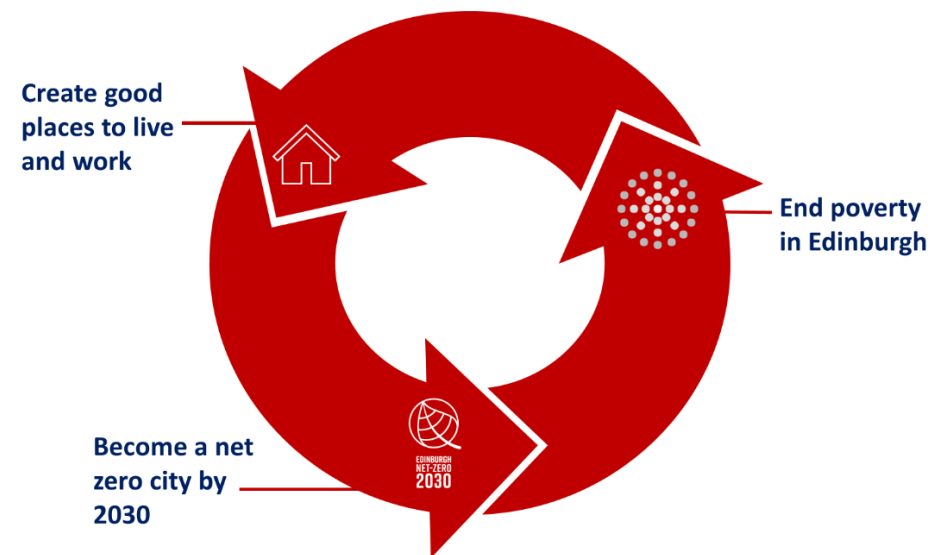
Overview

This Strategy sets out the City of Edinburgh Council's approach to the sustainable and transformational development and delivery of technology in order to

- support the Council's strategic priorities
- build on the Smart City initiatives already delivered.

The strategy will cover the period 2024-2027.

Over the last 3 years, technology has played a vital role in transforming and supporting the way our employees work, how our young people learn, how we engage with our citizens and in the operational and strategic delivery of Council services. It is a key enabler for change and improvement.

This Strategy describes how we will review our technology delivery model to ensure that we

- continue to provide solutions to meet rapidly evolving and changing business needs
- focus on Cyber Security to meet a complex and growing threat landscape
- respond to the changing shape of the organisation
- provide value for money
- enable us to respond to opportunities and demands for joint working with our partners
- improve our resilience
- ensure accessibility of technology is at its core
- align with national initiatives.

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The principles within this Strategy provide a framework for how our future technology services will be designed, sourced and delivered enabling us to support new, safe and secure collaborative ways of working.

The Strategy covers all aspects of technology services including the Council's approach to national initiatives and modern digital technologies and details some of our key achievements over the last 3 years such as channel shift, cloud and mobile computing. We have also moved to hybrid working during and post pandemic without investment in new tools, technologies, or resources by making better use of those we already had such as M365.

It is recognised that investment is required to transform our technology and we will create an investment plan as part of the wider implementation plan to provide a strategic and structured approach to technology change and support our technology delivery model.

The Strategy puts our citizens, and our staff, at the heart of service design and development. It aims to ensure that the effective use of digital and data technology is integral to service planning and delivery across the Council.

Digital and Smart City Strategy 2020-2023 – Key Achievements

The Digital and Smart City Strategy 2020-2023 set out an ambitious vision for the Council and some of the Key Achievements from this include:

- Delivery of the Digital Print and Mail Strategy including Follow Me Printing
- Data Strategy
- Smart City Initiatives
  - 11,000 bin sensors
  - 1500 environmental sensors in homes
  - Environmental Sensors in schools
  - Smart City IoT Platform
- Empowered Learning
  - 1 to 1 devices for all P6-S6 and staff
  - 1 to 5 shared devices for all other learners in P1-P5
  - Enhanced Network Provision
- Significant enhancements in Customer Digital Enablement
  - Omni Channel access to services
  - Integration with communications platforms
  - Integration with housing repairs
- Enhanced security landscape
  - Hardware/software currency programme
  - Public Sector Network (PSN) accreditation
  - Improved cyber security by adoption of National Cyber Security Centre (NCSC) Defence tools
  - Mandatory Cyber Training Programme
  - Regular Penetration Testing of our core networks

- Progress with Cloud Migration and 'Cloud First'
  - Increased use of M365
  - Move to a new MDM, consolidating use of M365
  - Planning and Building Standards
  - Rent Collection & Analysis
  - Asset Management
- Focus on Digital Inclusion
  - Enhanced Website Accessibility standards
  - Empowered Learning
  - Digital Skills work in Libraries
  - Employee Gateway to Orb (Intranet)
  - Use of translation tools on our website
- Delivery of Transformational Programmes
  - ERP
  - Business Intelligence
  - Health & Social Care Mobile rostering
- Improved Technical Architecture
- Resilience responses
  - COVID-19 – improved tools and architecture for mobile, home and hybrid working including softphones, extension to VPN and MS Teams use
  - Support for Ukrainian refugees
  - Operation Unicorn
- Upgrade of People's Network
- Improved Governance arrangements for technology delivery
- Improved internal request system used by several service areas
- Technology enabled to multiple new Council facilities including two new Care Homes, and School, Early Years and Library buildings.

Ambition

This Strategy is developed in line with the strategic priorities of the Council.

Our Business Plan highlights that **Our Future Council will be…Digitally enabled and accessible** and that **People can access public services locally and digitally in ways that meet their needs and expectations and contribute to a greener net zero city.**

We will embed this approach in our technology to ensure this becomes a key enabler for the transformation of both the Council and the city.

We will do this by:

Empowering Colleagues – ensuring that they have the right technology to do their jobs and the skills to use this

Placing Communities and Citizens at the centre of our digital transformation – by keeping digital at the core of service redesign

Improving Connectivity – both for our citizens and for the Council

Digital Leadership – fostering a culture of using digital tools and empowering all our leaders to be Digital Leaders

Focusing on Pre-existing Technologies that can be utilised to help the city improve its environment

Utilising Innovative Technologies – increased and secure use of sensor technology, Internet of Things (IoT) and Artificial Intelligence (AI)

Providing a secure and stable security environment – continuous improvement in the security and currency of our technology

Improving Use of Data – implementation of the Digital Strategy to enable us to confidently use the data we have as a Council

Enhancing our Technology Roadmap – engaging with services to align their service plans with our technology roadmap

Planned Investment – ensuring that the money we invest in technology is planned and forms part of the wider technology roadmap, including funding to support both currency and innovation

Governance – focusing on governance and risk management for our technology both internally and with key partners and suppliers.

Principles

Principle	What this means for Edinburgh
Re-Use, before buy, before build (for software solutions)	• We will leverage existing capability where appropriate, seeking to simplify the ICT estate • Where customisation is required, we will seek alternative solutions where possible • We will look in the marketplace for off the shelf products delivering the capability required • As a last resort we will build solutions
Focus on citizen and customer centric requirements	• We will consider the citizen or customer first • Where rationalisation and simplification of the IT estate can be achieved by implementing Enterprise-wide solutions we will seek to do so
Be reliable, resilient, secure and performant	• We will only consider solutions that improve service • We will ensure that solutions are designed to be resilient, secure, stable and efficient • We will gradually rationalise solutions which do not meet these criteria.
Focus on the strategic over the tactical/reactionary	• We will focus on delivering new or changed capability in strategic solutions • We will avoid implementing tactical solutions where possible, recognising there may occasionally be a need to do so • Solution decisions will be logged and any technical or service debt will be maintained in an architecture risk log

Principle	What this means for Edinburgh
Balance delivery, quality, best value and scope	• We will focus on ensuring the delivery of quality solutions that offer best value and meet requirements • We will implement solutions that fit the needs of the business and take account of the wider estate and strategy
Work within agreed standards and be compliant with legislation	• We will align solutions to agreed standards, Council policies and legislation
Continuous improvement and innovation	We will • Improve existing systems • Leverage proven successes • Embrace modern collaboration • Share tools • Improve accessibility of technology and data for citizens and colleagues • Adopt agile approach to technology • Adopt more rapidly created systems that require little to no coding knowledge • Promote a cloud first approach • Encourage more use of secure artificial intelligence, robotics and machine learning

Aligning with National Vision

This strategy is not just about City of Edinburgh Council but aligns with wider Scottish, UK and industry initiatives including:

- PSN/NCSC
- Edinburgh Health and Social Care Partnership
- Public Sector Cyber Resilience Framework
- City Region Deal
- Scottish Cities Alliance
- Scotland's Digital Health and Care Strategy
- Industry and sectoral best practice
- Accessibility standards.

The Scottish Government published its latest Digital Strategy 'A changing nation: how Scotland will thrive in a digital world' in early 2021 and this covers seven key themes which are also embedded within this Strategy:

- People & Place
- No One Left Behind
- An Ethical Digital Nation
- Digital Education & Skills
- A Strong Digital Economy
- Digital Government & Services
- Public Services Working for Us All.

The Strategy also outlined the eight principles which were required to achieve a Digital Nation. We are committed to designing our digital systems to integrate with national solutions/common platforms and the emerging national digital identity programme.

- provide excellence in customer service
- represent value for money
- continue adoption of cloud technologies through a 'Cloud First' approach
- continue to improve security and compliance
- support business transformation
- provide responsive and up to date technologies
- support innovation and Smart City technologies
- recognise the value of high-quality data to the organisation
- improve accessibility of our website and systems
- remove perceived friction and optimise delivery paths
- ensure that digital services and projects seek to address quality issues including digital inclusion
- provide alternative provisioning options.

Objectives

The objectives of this Strategy are to ensure that our approach to digital and technology will:

- be a key enabler of business
- respond proactively to the technology needs of the Council
- implement flexible and agile systems and infrastructure
- connect to align with the strategic principles of the Council
- align with the changing needs of the business

The implementation of this Strategy will enable the Council to:

- better support new ways of working
- help transform the customer experience
- better manage, plan and direct resources where they will have the greatest impact
- align front-line services including enabling user self-service

- utilise high quality data as an asset, providing faster access to, and sharing of, data within the Council, with our customers and partners
- listen and engage with our internal customers to deliver the maximum business benefit from our technology and embed champions within business areas as appropriate
- reduce costs and achieve savings
- maximise return on IT investment by getting the most from our systems and contracts
- provide an opportunity to:
  - improve service delivery
  - reduce demand for ICT resource
  - standardise and streamline technology
  - improve customer interaction e.g. self-service
  - innovate with technology and delivery mechanisms
- continue to develop a culture of continuous review and improvement.

Governance

A range of governance measures are already in place to provide assurance that the technologies we implement, and the investments made to put these in place:

- serve the strategic principles of the Council
- align with the business needs of Services
- drive performance improvement
- align with this strategy.

The Enterprise Architecture Board has been reformed and:

- ensures that we have an agreed baseline architecture
- guides technology investment decisions
- will be integral in focussing future technology funding
- reviews technology standards, processes and procedures
- makes recommendations for the implementation plan and future technology strategies
- help deliver the future technology delivery model.

All complex/significant proposed changes, projects and programmes must have an associated business case and the appropriate funding available to implement and maintain the change through the likely lifetime of the proposed solution.

Investment will be related to individual projects or programmes and provided by the Service responsible for the change or as part of any future technology funding arrangement.

To further enhance the governance model and to ensure that all technology investment and innovation aligns with the Strategy and the principles within it, we will form a Digital Steering Group chaired by the Chief Digital Officer with representation from all Directorates and the Edinburgh HSCP.

Additionally, we will take forward:

- updated cloud, acceptable use and cyber security strategies
- review of current governance and security arrangements for 'shadow IT' and make recommendations on its future governance model
- implementation of the Data Strategy in collaboration with Business Intelligence and Information Governance colleagues
- participation in national and regional programmes
- digital programme portfolio
- collaborative working with partners and suppliers
- strategic alignment with Council goals and vision.

Digital Leadership

We aspire that all our Leaders will be Digital Leaders and aim to create a digital culture, building change around current and emerging digital opportunities.

Our Digital Leaders should:

- encourage use, awareness and understanding of digital tools
- effectively communicate change
- appreciate the value technology adds to the organisation, our citizens and our city
- be open minded to innovation
- encourage change and improvement
- encourage growth of new digital and data skills
- lead technology change in an inclusive and adaptable manner
- help increase adoption of technology solutions by promoting engagement locally within teams – where appropriate developing business/service-based technology champions
- have the capacity and skills to manage people through disruption and change
- understand that new technologies are fundamentally changing the skills our people need and take responsibility for continuously developing the knowledge, insight, and behaviours we need to transform our organisation.

Skills Required for Digital Leadership

- Digital Learning
- Communication
- Strategic Thinking
- Adaptability
- Innovation
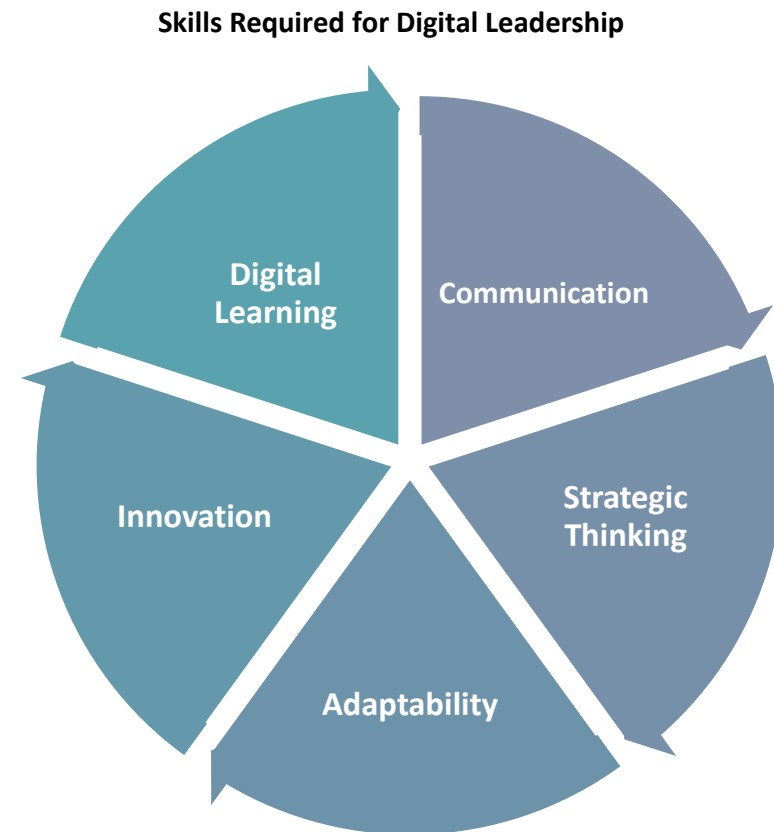
Standards

Performance Management

We plan to measure performance to improve our service both strategically and operationally.

Our primary metrics will be:

- incident response and resolution
- customer satisfaction/feedback
- critical business service availability – monthly statistics for availability of our core applications and systems
- service desk performance tracking.

We will deliver success by:

- agreeing operational performance priorities with the relevant partners and meeting those priorities
- ensuring good governance through the enterprise architecture framework
- providing a vision for technology that is aligned to our business
- promoting continuous improvement and innovation in technology.

Service Management

We will focus on transforming service provision to better meet the changing requirement of the organisation and a modern workforce.

We will deliver good service management by providing:

- an online catalogue of our services and hardware to provide transparency and clearer pathways to customer choice
- improved contract management with our suppliers
- improved performance measures and management
- opportunities to channel shift our internal customers to self-service options through the portals
- improve communication to and with our internal customers
- further expansion to other Services of the Halo service desk platform.

Using the industry standard Information Technology Infrastructure Library (ITIL) set of practices for IT service management (ITSM) that focuses on aligning IT services with the needs of business approach, we will continue to deliver:

- improved service delivery and customer satisfaction through standardised offerings
- reduced costs of service delivery though improved resource utilisation
- greater transparency of ICT costs and assets through a Cloud based business model
- improved management of business risk and service disruption or failure

- a stable service environment to support continuous business change.

We will continuously improve service and reduce failure demand. Through a combination of investment, feedback from our customers and good business intelligence we will consistently redesign and improve the services we deliver.

Investment in technology and resource has led to improvements in incident management over the term of the last strategy.

Technology Resilience

To maintain service quality, we will continue to focus on improving the ability of systems to recover from unexpected disruptions by:

1. developing a rolling schedule of disaster recovery tests on all key systems
2. promoting a proactive approach to resilience with our IT partners
3. acting swiftly and with resolve on lesson's learned from previous disruptions
4. improving technical resilience measures such as auto failover and failback, geographical separation, improved redundancy, distributed back-ups and adherence to standards.

Change Management

We will apply a blended approach to project change management which will bring together the best elements of the Prince2, Waterfall and Agile methodologies.

This provides us the flexibility to apply more formal clearly defined project management goals and outcomes, with the complementary option to adopt more agile approaches for projects that will deliver incrementally through short development cycles -known as "sprints".

Complex and significant change requests are assessed and coordinated through the Joint Change Review Board. The board ensures that requests have a supporting business case and align to our enterprise architectural principles and technology roadmap. Project deliveries are prioritised based on business value and captured in a Single Programme of Work which will ensure the changes are well communicated and dependencies are carefully managed. The change process will include options to fast-track legislative and emergency requests.

Our primary metrics will be:

- alignment of technology investments to the business need
- project/programme management – providing data on the open, completed, cancelled and pipeline projects including how well we are meeting timescales and budgets
- ensuring that all projects comply with cyber security standards and website accessibility guidelines
- a single Programme of Work to ensure projects are strategically aligned, well communicated, and are delivered on time and within budget.

We will deliver success by:

- managing projects and priorities consistently
- aligning business need to our architectural principles wherever possible
- ensuring good governance through the change, project and programme boards
- effective management of project risks and plans, and regular highlight reporting
- application of project quality gates to evaluate, authorise, and monitor projects as they pass through the project lifecycle
- leveraging experience through post project lessons-learned reviews, for subsequent projects
- working with our ICT delivery partner on a change improvement plan which will drive process improvements to assist business areas in delivering both new and enhanced digital solutions
- undertaking Data Protection Assessments and delivering Security Assurance Statements for all projects that impact systems which hold personal data
- undertaking website accessibility audits and publishing website accessibility statements
- providing a vision for technology that is aligned to our business.

Core Technology and Platforms

Our core platforms, systems, hardware, and devices must be fit for purpose. This includes our end user devices. We will:

- continue to embed a Cloud First approach to technology change
- seek to implement a flexible security model using a 'risk aware not risk averse' approach whilst maintaining compliance with NCSC security and data protection requirements.
- ensure that mobile and flexible is the standard and that our systems and approach to security reflects this
- increase opportunities to support use your own device (UYOD) and end user device virtualisation for staff where it is secure to do so
- maximise the potential of the M365 platform across our corporate estate
- increased adoption of more cloud-based Azure pay as you go services using templated architectural models
- explore low code Council-based innovation and development (Digital and power user-based)
- support and enhance M365 operationally for use in learning and teaching in delivery of curriculum, engagement with parents/carers and strengthening of wider community links.
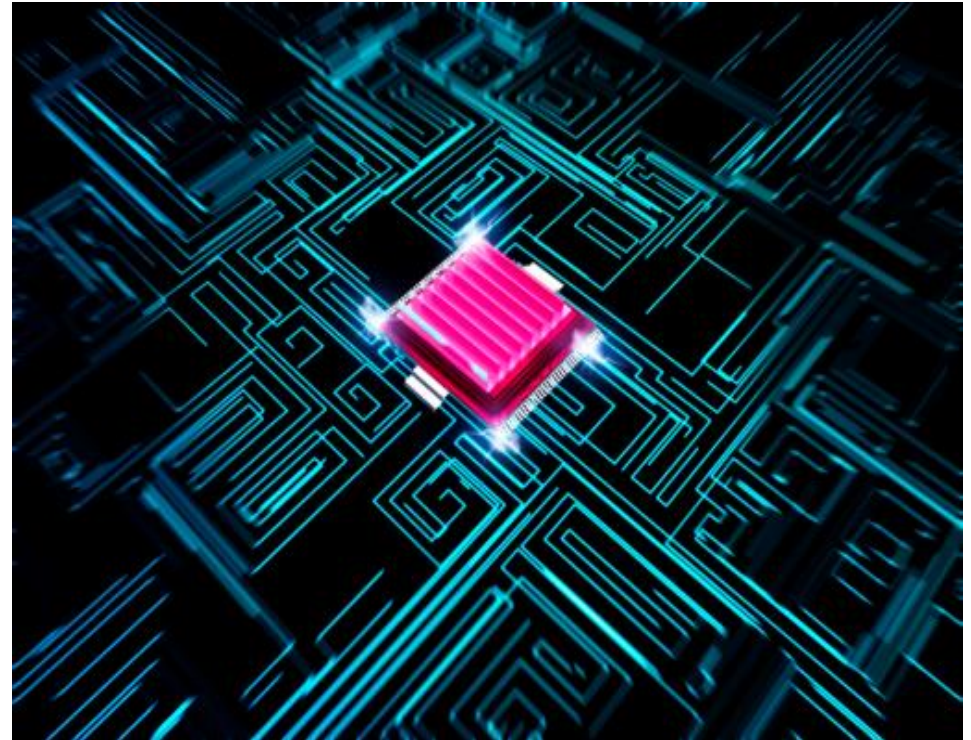
Technology Delivery Model

The Council has embraced a primarily outsourced technology delivery model for over 20 years. The way we use technology has changed and grown exponentially since the origins of this model were defined.

Our current IT partnership model contract expires in 2029 and we will review the options for technology delivery in advance of this date.

The review will encompass the principles outlined in this strategy and include

- review of current technology estate
- areas for improvement and/or transformation
- options for future delivery models
- improvement of current landscape
- future sourcing and resourcing models to support the delivery model
- funding implications.

The review will focus on outcomes including:

- agility – to be more responsive and demand led
- adaptability – ensure our systems are supported and secure
- innovation
- a secure and stable service
- value for money
- being demand led.

Business Solutions

As well as changes to our infrastructure and fostering a culture of digital transformation, we must continue to position our line of business systems to be an engine for change. This means:

- ensuring that the systems are fit for purpose
- ensuring that the data we hold is the data which we need and is accurate and up to date
- developing system and staff capability to be responsive to changing business needs
- rationalising our application portfolio wherever practical to reduce datasets and costs and to improve sharing of data across the organisation
- using the data we have as an asset to inform business decisions
- using analysis and prediction techniques to turn data into information and then knowledge
- focusing on good quality management information available instantly as required
- keeping pace with technological trends and taking advantage of them
- moving away from solely having large-scale, high-cost, high-maintenance database applications and embracing more agile and customer focused apps to support improved digital engagement with our citizens
- using open industry standards where possible. Open standards prevent over reliance on single software vendors and other artificial barriers to interoperability between systems. They also promote choice between vendors and technology solutions and can reduce operating costs.

- using enterprise architecture standards and principles as benchmarks for existing and new systems
- adopt the approach of reuse before buy before build for new system requests
- introducing self-service systems with flexibility for user-driven administration.

User Experience

As we improve the systems we have, the tools we provide to our workforce and the digital engagement with our customers, we need to assess the look and feel of our systems and how usable they are to the intended audience.

We will focus on the seven areas noted below and align with the Scottish Government's 'Inclusive, Ethical and User Focused' principle and work to conform to accessibility standards (WCAG2).
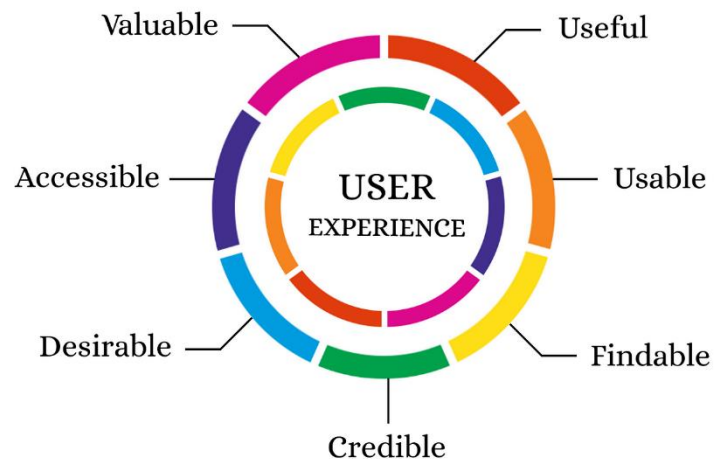
Device Review

The review of our end user devices will create a roadmap for the future device replacement schedule.

A single large refresh programme does not best meet the needs of the Council and does not make best use of devices on our estate. From both a financial and sustainability approach, devices will be used until they are no longer supported or become unsuitable for the work they are required to do.

The focus will be on having fit for purpose devices and systems access which are maintained securely.

Laptops will be the standard device for corporate users and encouraged across the Council for flexibility – with desktops by exception/agreement. There will be a standard device build across the Council.

The device review will focus on devices that cannot be upgraded to Windows 11 as Microsoft is withdrawing support for Windows 10 in October 2025.

Programmes of work for the Device Review will commence in 2024 for both in corporate and Learning & Teaching.

Cloud

Over the course of the previous strategy, we have actively promoted our 'Cloud First' principle for new and updated software used across the Council. We have also strengthened the Cloud and Web Hosting Protocol and will continue to evolve this.

The M365 toolkit is extensively used in Learning and Teaching and is being rolled out gradually across the corporate estate.

Cloud-based computing services offer many benefits to the Council and support the transformation of our business and the changing way we work. They will most likely play a significant role in the review of the technology delivery model.

The use of cloud services will help us to:

- be environmentally sustainable
- operate efficiently and cost-effectively
- be flexible and responsive
- decrease delivery time
- reduce risk
- increase resilience
- strengthen cyber security.

Over the course of this Strategy, we will be moving our main document storage to the cloud.

Cloud Computing Benefits

Flexibility · Automatic software Updates · Increased Collaboration · Security

Disaster Recovery · Pay as you go · Document control · Location Independent
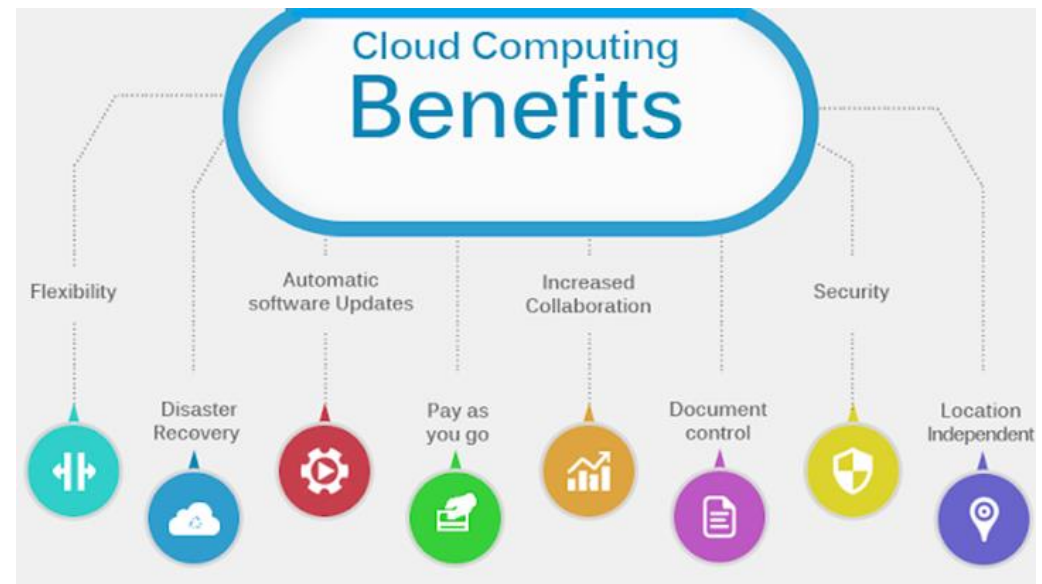
Storage and EDMS

The Data Strategy highlights that our need to create, use and rely on an ever-increasing volume and variety of data as a Council means we need digital solutions that help us maximise its value and manage it in a manner fitting with our policies and procedures.

Getting the right solutions will allow us to reduce clutter, save staff time, lower costs and improve our customer service.

For some of our data, this will mean acquiring and using case management systems to create or link to key databases and enable a single view of an individual, property, or issue.

However, for our 'unstructured' data (e.g., Word docs, Excel spreadsheets, PDF files and images) currently held in our shared drives and other repositories, this will mean designing and implementing a single Enterprise Content Management (ECM) solution for the Council.

Over the course of this strategy to deliver this we will:

- Maximise the use of existing technology to help our colleagues manage and use information more effectively by adopting Microsoft 365 as our primary ECM solution for all Council business activity.

- Invest in Microsoft 365 so it has the right architecture, applications and functionality to support our business needs and meet our statutory public records obligations.
- Develop in-house capacity to design, implement and support Microsoft 365 applications so they remain effective and appropriate for us to use as they evolve.
- Utilise Microsoft 365 applications and third party integrated applications to support and expand both internal and external collaboration opportunities.
- Establish site lifecycle management processes to ensure our Microsoft 365 architecture remains relevant and appropriate.
- Create and implement a migration plan to shift our existing unstructured content from network storage to Microsoft 365
- Develop and maintain a range of different storage options for us to use – from Azure storage for large datasets to Microsoft 365 for short to medium term digital records and a digital archives repository for longer term and permanently retained records.

Enterprise Reference Architecture

At the heart of this Strategy is a Enterprise Reference Architecture that lays out the fundamental design and *capabilities* of the Council's Digital Services now and into the future.

Using the Local Government Reference Architecture our digital capabilities are defined in eight layers – Front Office and Self Service, Line of Business Services, Back Office, Enterprise Productivity Tooling, Enterprise Data and Analytics, End User Infrastructure, Hosting and Storage, and Networks and Telephony. In turn, each item within these layers covers a capability that is associated with a specific system or number of systems, with security capabilities encapsulating all layers.

The City of Edinburgh Architecture Summary Report produced by our ICT partner will provide complete versions of the Reference Architecture covering current and future capabilities, and more specifically, will help us more easily identify where system investment, extension, consolidation, containment or simplification is required.

In summary, these layers and capabilities are vitally important to the Council in helping us achieve an accessible, scalable, flexible and functional architecture.
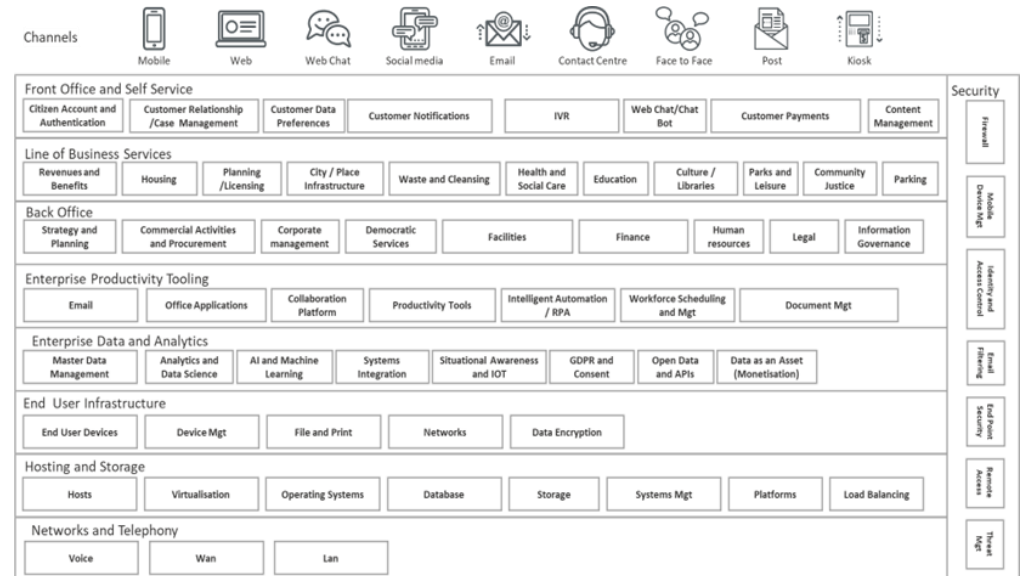
Security

The threat landscape for Cyber Security changed markedly over the period of the previous strategy. New and emerging threats from across the world have created a greater challenge than we have previously experienced.

Over the last 3 years we have expanded and improved our cyber defences by implementing new controls and policies, introducing new tools and removing legacy systems from our estate. We have also introduced monthly mandatory cyber security training for all computer users.

To ensure that we continue to keep our networks and information assets secure, we will build on this work by:

- Enhancing our protection from the threat posed by phishing
- Continued implementation of NCSC cyber defense tools
- Improved resilience and incident management
- Improved vulnerability management
- Delivery of secure file transfer technologies
- Yearly external assurance testing of Incident Management Plans
- Yearly penetration testing of all networks
- Continued assessment of M365 tenancies against national standards
- Enforcing an enhanced password policy and multi-factor authentication
- Removing legacy applications
- Implementing a Zero tolerance approach to unsupported systems/applications
- Continuing our move to cloud-based services.

We will also focus on Governance and technical controls including:

- Strengthened User Access Management Controls
- Improved Cloud / Immutable Backup Solution
- Disaster Recovery / Business Continuity
- Zero Trust, Zero Tolerance
- Employee Awareness - Engagement and Training
- Risk Management
- Regulatory Compliance
- Supply Chain Security
- Cloud Monitoring Tools.

We will continue to work with partners across the public sector through participation in the Cyber Security Information Sharing Partnership (CISP) and the Scottish Local Authority Information Security Group (SLAISG) and collaboration with the Scottish Government and NCSC on the Public Sector Cyber Resilience Framework. The internal Cyber and Information Security Steering Group (CISSG) also continues to meet every six weeks.

We will continue to seek accreditation to the PSN on an annual basis and to undertake security assurance from third parties on all new systems.

We aim for continuous improvement and ensure auditability of our cyber defences.

All new systems must be Secure by Design and have Defence in Depth.

Customer Digital Enablement

The people and communities who engage with us to receive services or information form a broad group that includes citizens, learners, external and third sector partners, communities, businesses, and visitors.

Historically, many of our customers have chosen traditional engagement routes with the Council. However new technologies now give us the opportunity to provide them with multiple contact choices and 24/7 access to public services through digital platforms.

We aim to ensure that our services are:

- digital by default – we will implement a digital approach to the delivery of services and the way that we work and learn
- mobile first – we will give priority to ensuring that services can be delivered through mobile technologies
- omni channel – continually develop channel shift opportunities to maximise the proportion of accessible digital transactions and reduce wherever possible the need for face-to-face (F2F) transactions
- citizen centric – we will put citizens at the centre of what we do by engaging them in the design and delivery of services so that the outcomes delivered are the ones that really matter to them.

During the term of this Strategy, we will focus on customer data quality and move from holding data, through holding information to recognising that we are holding knowledge. We will also look at the way our customer accounts work to ensure that digitally transacting with us is more streamlined and the first choice for our citizens.

Under the previous Digital Strategy, the Council delivered on its commitment to provide online forms around its top citizen transactions through its new Customer Relationship Management (CRM) system. From 2024-2027, the Customer Transformation programme will look to build on this work by replacing its citizen authentication portal with an improved and more user-friendly platform.

This will:
- link our customer-based business systems using the unique property and customer numbers as key identifiers
- be a single source of the truth on the customer and the services they consume
- enable personalised and localised services to be delivered
- support pro-active grouping of services around user needs.

Customer Transformation will support Council environmental and sustainability targets by providing reliable paperless options around annual billing. Accessibility tools, which are in place to ensure citizens have the right support to engage with Council services, will be expanded upon as we continue to support digital inclusion.

Data Strategy

The Council has an ambition to be a data driven organisation using the information and data it holds and collects to create better services, navigate budget cuts, enhance our smart city programme and allocate resources to where they will have the greatest impact.

Data and information are vital assets of the Council; we need them to be accurate, relevant, and available:

- to manage services
- for accountability
- to prioritise and ensure the best use of resources
- to improve outcomes for our citizens
- to report as part of our performance and benchmarking.

To meet the changing needs of our city and citizens, and ongoing budget challenges, we must use the data and information we hold and access through partners to shape the services we provide now and in the future. However, the Council acknowledges that there are inconsistencies in the way we collect and manage our data and information – and that we need to provide an overarching strategy to improve its quality, management and use across the organisation.

The Council's Data Strategy consists of five themes:

- Information Principles
- Data Foundations
- Using Information
- Managing Content
- Leadership and Culture

which cover our overarching information principles, and our high level aims and commitments around data creation, using information, managing content and supporting our people to be confident data and information creators, users and managers. Its purpose is to provide the direction and impetus necessary for our senior leadership and wider staff to develop the Council's capabilities and effectiveness in these areas.

The Council's Information Board will drive and monitor the strategy's implementation, which will be governed by an implementation plan.

Key elements of this plan will also be incorporated into the annual work plans for all relevant services.

The implementation of this four-year strategy, across all our services and all of our data and information, is the starting point of a complex and challenging journey towards improvement.

Our current data and information landscape is vast and has often grown without regard to quality, accessibility, compliance, or governance.

The implementation of the strategy will take time and require resources to ensure that we are making the best use of our data and information. It will, however, pay dividends as we become better able to take advantage of the opportunities of rapidly evolving technology while meeting the challenges of our ever-changing financial, legal and regulatory requirements with greater confidence.

Digital Learning

The City of Edinburgh Council supports and promotes the appropriate and effective use of digital technology within education to give all City of Edinburgh learners the opportunity to improve their educational outcomes and to develop digital skills that will be vital for life, learning and work in an increasingly digital world.
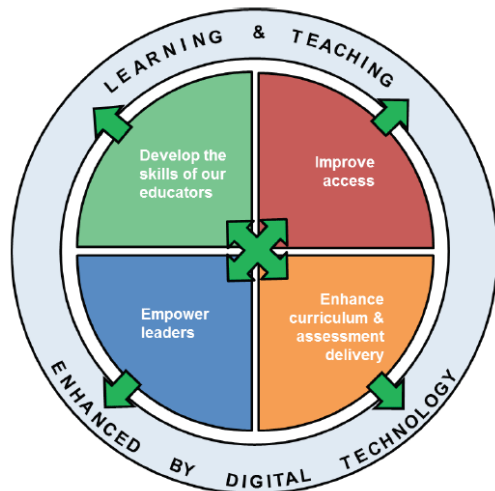
In order to realise our vision, partners at both a national and local level will work together to achieve all four of the following essential and interrelated objectives that are central to successful digital learning, teaching and assessment:

- further develop the skills and confidence of educators in the appropriate and effective use of digital technology to support learning, teaching and assessment

- improved access to digital technologies allows opportunities to further embed digital resources into curricular activities
- ensure that appropriate digital technology is a central consideration in all areas of curriculum and assessment delivery
- empower leaders of change to drive innovation and sustainable investment for the enhancement of digital technologies within learning, teaching and assessment.
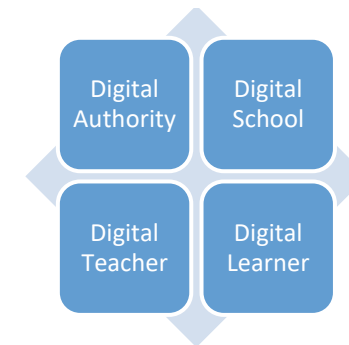
Digital Skills

The growth of consumer technology has created a new era in digital where many consumers expect 24/7 access to services online, and options to engage with organisations via social media. Consumer expectations will continue to radically change the ways in which we work and the work that we do.

The expansion of consumer technology and move to digital channels for many services over the COVID-19 pandemic, has also increased the need for consumers to develop confidence in their own digital literacies and cyber resilience skills. In order that our customers engage digitally with the Council they must first feel confident and empowered to do so.

To be the Digital Council we aspire to be we will need different skills and knowledge and enhancing the digital skills of colleagues is a key action within the Council's People Strategy 2024-27.

We will need:

Council

- leaders who understand the value our technology adds to the organisation
- leaders who develop digital skills in order to become digital leaders
- a digitally skilled workforce who engage with professional development to further build and enhance digital skills.

Customers

- citizens who feel confident in their digital skills and secure in their ability to promote their own cyber resilience

- citizens who engage with Smart City and Digital Council initiatives providing feedback that helps to shape future improvements.

Schools and Lifelong learning

- learners who engage with opportunities to develop their digital literacies
- learners who develop their understanding of their own cyber resilience to be safe and secure when using digital tools
- learners who are aware of their digital footprint and how to protect their privacy
- learners who have digital skills for life, learning and work
- teach skills that will empower them to become the digital citizens and workforce of the future
- education colleagues who utilise digital tools to support their working will develop high-quality teaching and effective assessment methods.

We will do this by:

Council

- designing services and support capabilities that deliver digital inclusion for all our citizens
- embracing social media as a tool for engagement and communication both internally and externally
- developing our employees to be comfortable with the technologies we use to deliver service

- providing and promoting e-learning to enhance digital skills.

Customers

- providing and sign-posting a wide range of digital support tools and materials
- providing adult learning opportunities using e-learning opportunities
- delivering digital inclusion learning opportunities for citizens via our libraries.

Schools and Lifelong learning

- supporting schools and early years to access and deliver a 21st century educational experience
- empowering school leaders to drive innovative changes within their setting
- providing professional learning opportunities for staff and ensuring equity of access to such opportunities by embracing e-learning
- providing up to date infrastructure, hardware, and software to ensure learning to enable learning that provides the best future life chances for all learners
- embracing our core platform MS365 to ensure continuity of resources, allow networking between settings and safe interactions with external partners
- focusing on STEAM subjects to ensure learners are prepared with a digital toolset fit for future life and workspace
- providing access to digital communication tools that provide parent/carers easy, consistent access to digitally interact with school day practicalities
- signposting and providing access to a range of materials for parents/carers that support them to develop knowledge and

skills enabling them to confidently support their child in digital literacy, digital safety and positive practices.

Digital Inclusion

Digital inclusion is about ensuring the benefits of the internet and digital technologies are available to everyone. This is important not only to ensure that citizens can access Council services, but also to support the Council's central priorities to ending poverty and create good places to live and work across Edinburgh. The work of the Edinburgh Poverty Commission, for instance, describes how lack of access to appropriate digital equipment or skills is a significant barrier to people's ability to escape from poverty. Digital exclusion results in higher living costs, and limits opportunities to find employment, access support or connect with community networks.

People can be digitally excluded for several reasons. Some may not be able to afford a reliable broadband internet service or the internet enabled devices that meet their needs. Some may be excluded due to literacy or numeracy challenges, or a lack of skills, confidence and motivation to engage and use digital technologies. These factors all disproportionately affect people from ethnic minority communities, low income households, people with disabilities, and older adults.

We aim to ensure that no-one is left behind digitally. We will ensure that all our citizens have access to digital connectivity and that we can provide support for our citizens to gain digital skills and the confidence to use them. We will:

- ensure free internet connectivity is available in our community spaces including libraries, schools and in early years settings

- ensure citizens can access resources including computers, the internet, printing, and Wi-Fi connectivity for customers who wish to use their own devices within our libraries
- ensure citizens can access learning opportunities to further their digital skills and cyber resilience abilities
- ensure that digital literacies are embedded into all aspects of the curriculum
- improve accessibility of Council systems and data
- foster positive relationships between families and early years settings/schools allowing for support opportunities to be identified
- provide equity of access to digital resources for all learners in schools
- ensure that Council tenants in HMO (House in Multiple Occupancy) have access to full fibre digital networks wherever possible
- seek to improve Wi-Fi connectivity in Council managed residential facilities including Care Homes and Young Persons Centres
- work with third sector partners to promote access to affordable digital equipment
- ensure that citizens on low incomes are involved in the design and development of digital services that matter to them.

Smart Cities

What is a Smart City?

A Smart City is an [urban area](#) that uses different types of Internet of Things (IoT) sensors to collect data then use insights gained from this to manage assets, resources and services efficiently, in return using that data to better improve the operations across the city. Our vision for a Smart City is the application of data and technology to increase efficiency, minimise costs and enhance convenience.

Our aim for Edinburgh
Our aim for Edinburgh is to:

- make the city more livable, workable and sustainable
- have world class connectivity
- manage the city resources effectively and intelligently
- deliver world-class citizen-centric city services
- underpin a continuous process of reinvention, transformation and creativity
- support economic development and long-term prosperity
- improve resilience
- empower citizens to become Smart/Digital Citizens
- empower our Smart/Digital Citizens of the future.

Over the last 3 years, Edinburgh has invested in a number of Smart City initiatives:

- 11,000 bin sensors
- 1500 environmental sensors in homes
- CO2 sensors in our schools
- Digital CCTV Infrastructure
- Creation of SI360 data platform for our sensor data.

We will continue to review and invest in our Smart City capability to expand the portfolio of Smart City projects working with partners and suppliers to ensure interoperability and provide shared frameworks for city transformation plans.

We will continue to develop and expand the SI360 data platform and ensure that the data collected is used to enhance the city.

We will work with partners on funding opportunities to expand and grow the portfolio of Smart City initiatives.

Connectivity

Edinburgh has the ambition for world class mobile and fixed connectivity for its citizens, businesses and visitors which will help to

- stimulate economic growth
- improve digital participation
- support digital skills initiatives
- reduce inequality
- facilitate access to public services.

The City of Edinburgh Council area has Full Fibre or Fibre to the Premise (FTTP) broadband connectivity to almost 80% of premises and 98% of the premises can receive 'superfast broadband' (defined as speed of at least 24Mbps).

We will work with providers and Government bodies to encourage the expansion of fibre broadband and tackle the areas defined as 'not spots' as part of the Reaching 100 Programme.

We will encourage the expansion of 5G connectivity by enabling use of Council assets for small cell technology to deliver 5G across the city.

Innovation

We will use innovation to help us to transform into a digital Council by implementing emerging digital technologies.

Digital innovation is the adoption of modern digital technologies to improve the way the Council provides services to our citizens, partners, and visitors. It can enable citizens to access the services they need quickly and at their own convenience, whilst also facilitating more efficient and effective processes for our people.

We have already implemented innovative sensor technologies as part of our Smart City programme, process automation and a number of innovative chat and translation tools as part of our customer facing offerings on our website.

Over the course of this strategy, we will:

- support culture of innovation across the Council
- enable third parties to pitch innovative concepts to the Council
- ensure that Innovation is a standing item on the Digital Steering Board
- provide a structured mechanism for the Council to explore and manage its technology innovation portfolio
- encourage cross-departmental re-use and sharing of systems/resources.

IoT/AI

The Internet of things (IoT) describes devices with sensors, processing ability, software and other technologies that connect and exchange data with other devices and systems over the Internet or other communications networks.

Artificial intelligence (AI) is the intelligence of machines or software, as opposed to the intelligence of humans or animals.

The Council has already introduced some sensor and AI technologies and new AI systems such as ChatGPT have the power to automate and improve some of our frontline service offerings. These technologies can drive efficiencies and improved data, going beyond the current scope of our Smart Cities programme and be used, for example for energy use and monitoring across council buildings to reduce waste and help to meet carbon reduction targets.

To ensure the secure and ethical use of these technologies and to ensure that the Council can leverage business change through their use, we will prepare a standard for their use within the Council.

Technology sustainability

The City of Edinburgh Council has set an ambitious city-wide target to become carbon neutral by 2030.

Digital Services and our delivery partners for technology and Smart Cities are committed to contributing to this target in several ways including reducing:

- energy use
- carbon emissions
- the amount of waste generated
- the effects of climate change.

To date, we have:

- reduced carbon emissions by implementing an automatic shutdown of PCs in pilot areas across the Council in the evenings and over weekends
- installed multi-function devices to replace printers and copiers across the Council
- chosen technology solutions with virtualisation of servers or cloud hosting where possible to promote better value, save energy and reduce heat output and comply with the European Code of Conduct for the operation of data centres energy efficiency
- disposed of hardware responsibly and in accordance with the waste electrical and electronic equipment (WEEE) Directive and recycled equipment where possible

- extended the lifecycle of PCs and other hardware assets to take advantage of both cost savings and reducing waste
- implemented home/remote working solutions that reduce travel between sites and between home and work.

Over the coming years, we will:

- ensure that greater significance is placed on choosing energy saving devices when choosing new equipment
- choose cloud-based solutions utilising best practice in sustainability
- further investigate automatic shutdown and startup of equipment using software tools
- promote electronic records to minimise unnecessary printing
- work with Services to help reduce carbon emissions wherever possible
- ensure carbon neutrality is embedded in our contracts
- support mobile and flexible working to reduce our carbon footprint.

Strategy delivery and implementation

This Strategy is a three-year plan running from 2024 to 2027.

An implementation plan will be prepared to support the Strategy and will be reviewed and refreshed annually to ensure that all projects are included and that targets are being met. This plan will show:

- where projects have been completed
- the status of ongoing projects
- reasons for delays or cancellations for projects.

The initial implementation plan will be reported to Corporate Leadership (CLT) with annual updates on progress also reported to CLT.

Appendix A – Technology Standards

The technology standards roadmap is created to show how all our technical capabilities align to support the Council and our citizens.

Technology Standards Roadmap

	BUSINESS ALIGNMENT					
GOVERNANCE	Council Objectives Digital & Smart City Strategy	Strategy. Governance and Reporting	Business Partnering	Enterprise Architecture	Security, Risk Management and Quality Assurance	Financial Planning & Control
SOURCING AND SUPPLIER MANAGEMENT	Technology Delivery Model	Sourcing and Vendor Strategy	Category and Technology Management	Supply Chain Security	Supplier Relationship Management	Performance Management
PROJECT MANAGEMENT	Project Portfolio Management	Business Case (Linked to Enterprise Architecture & Strategy	Planning and Commitment	Design. Develop and Implement	Deployment, Testing and Training	Business Benefits Realisation
SERVICE MANAGEMENT	Business Continuity Management	Service and Structure Development	Service Strategy and Design	Performance Management	Service Operation (including Self Service)	Continuous review/ Service Improvement

Appendix B – Strategy Implementation Plan

Strategy Implementation Plan

TIMESCALE	2024	2025	2026	By end 2026
Cloud	AIM/ACR migration SWIFT Replacement G-Drive to MS SharePoint Further Application Cloud Migrations -Scope, Plan, Execute Improved self-service portal	SWIFT Replacement G-Drive to MS SharePoint Expanded use of HALO Further Application Cloud Migrations –Scope, Plan, Execute	SWIFT Replacement G-Drive to MS SharePoint Further Application Cloud Migrations –Scope, Plan, Execute	All major systems cloud based with plan for remaining on premise applications
Security	Continued BAU Security enhancement Enhanced e-mail controls Focus on Cyber Incident response	Continued BAU Security enhancement BackUp Review Focus on mandated cyber training	Continued BAU Security enhancement Security model review	Review all security operations and activity
Applications & Data	CRM/Web Enhancements Core Apps Developments Expanded use of M365 Power BI Developments	CRM/Web Enhancements Core Apps Developments Expanded use of M365 Power BI Developments	CRM/Web Enhancements Core Apps Developments Power BI Developments Expanded use of M365 Application review and consolidation	Consolidated application estate with improved governance
Governance	Change Improvement Plan Digital Steering Group formed Digital & Smart City portfolio Data Strategy implementation Shadow IT review Improved performance & management of Service	Change Improvement Plan Digital Steering Group Digital & Smart City portfolio Data Strategy implementation Shadow IT review Customer Satisfaction Review	Change Improvement Plan Digital Steering Group Digital & Smart City portfolio Data Strategy implementation Enhanced Shadow IT Governance	Governance, customer satisfaction and service delivery improved. Governance model updated to reflect the technology delivery model
Technology Delivery Model	Review current technology estate Review options for future delivery models	Review options for future delivery models Future sourcing model Future funding model Future resourcing model	Delivery and implementation plan for the Technology Delivery Model	Implementation of Technology Delivery Model
Network & Infrastructure	Mail Filtering Replacement Firewall replacement DNS Redesign Device Review PSTN Retirement Programme Telephony Review WAPs & Switches replacement Power / UPS Resilience	PSTN Retirement Programme Telephony Review Device Review Core Network Upgrade WAPs & Switches replacement Power / UPS Resilience Enhanced Smart City Capability	New telephony solution Enhanced Smart City Capability Future device review model	Continued improvement and enhancement of our network and infrastructure