Policy and Sustainability Committee

10.00am, Tuesday, 6th October 2020

Digital and Smart City Strategy

Executive/routine	**Executive**
Wards	**All**
Council Commitments	

1. Recommendations

1.1 It is recommended that the Committee

- approves the Council's Digital and Smart City Strategy;
- endorses the governance approach and operational reporting of the implementation plan to the Corporate Leadership Team on a quarterly basis.

Stephen S. Moir

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Report

Digital and Smart City Strategy

2. Executive Summary

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

3. Background

3.1 The City of Edinburgh Council's previous strategy for ICT and Digital, known as "Empowering Edinburgh" was approved in November 2013. This strategy was underpinned by more detailed implementation plans in 3 waves, through to 2015/16, which culminated in the procurement process to award our current partnership arrangements to CGI UK Limited.

3.2 This Strategy endorsed the focus on customer and business drivers for the technology we use and laid the foundations for the new Digital and Smart City Strategy.

3.3 The Digital and Smart City Strategy sets out the City of Edinburgh Council's approach to the sustainable development and delivery of technology to support the Council and enable Edinburgh to become a Smart City, covering the period 2020-2023.

3.4 Many of the initiatives detailed in this strategy document are already underway or have completed a first phase programme of work, such as Customer Digital Enablement. For initiatives which have still to be started, these will go through a full scoping review and business case process to understand the return on investment, both financial and non-financial and to ensure rigorous operational scrutiny.

4. Main report

4.1 This Strategy describes how we will 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.

4.2 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.

4.3 The Strategy will support the Council in the delivery of the Council's Business Plan and the commitments within this and adopts the principles of the Edinburgh 2050 City Vision.

5. Next Steps

5.1 The Council will develop and maintain an implementation plan to accompany this Strategy throughout the lifetime of the document.

5.2 Digital Services will engage with all Services, stakeholders and partners in the preparation of this plan.

6. Financial impact

6.1 There is no financial impact arising from this report.

6.2 For initiatives which have still to be started, these initiatives will go through a full review and business case process to understand the ROI to ensure financial approval.

7. Stakeholder/Community Impact

7.1 Digital Services will work with all Services, stakeholders and partners to ensure that the technology we provide meets the needs of staff, citizens and the Smart City programme.

8. Background reading/external references

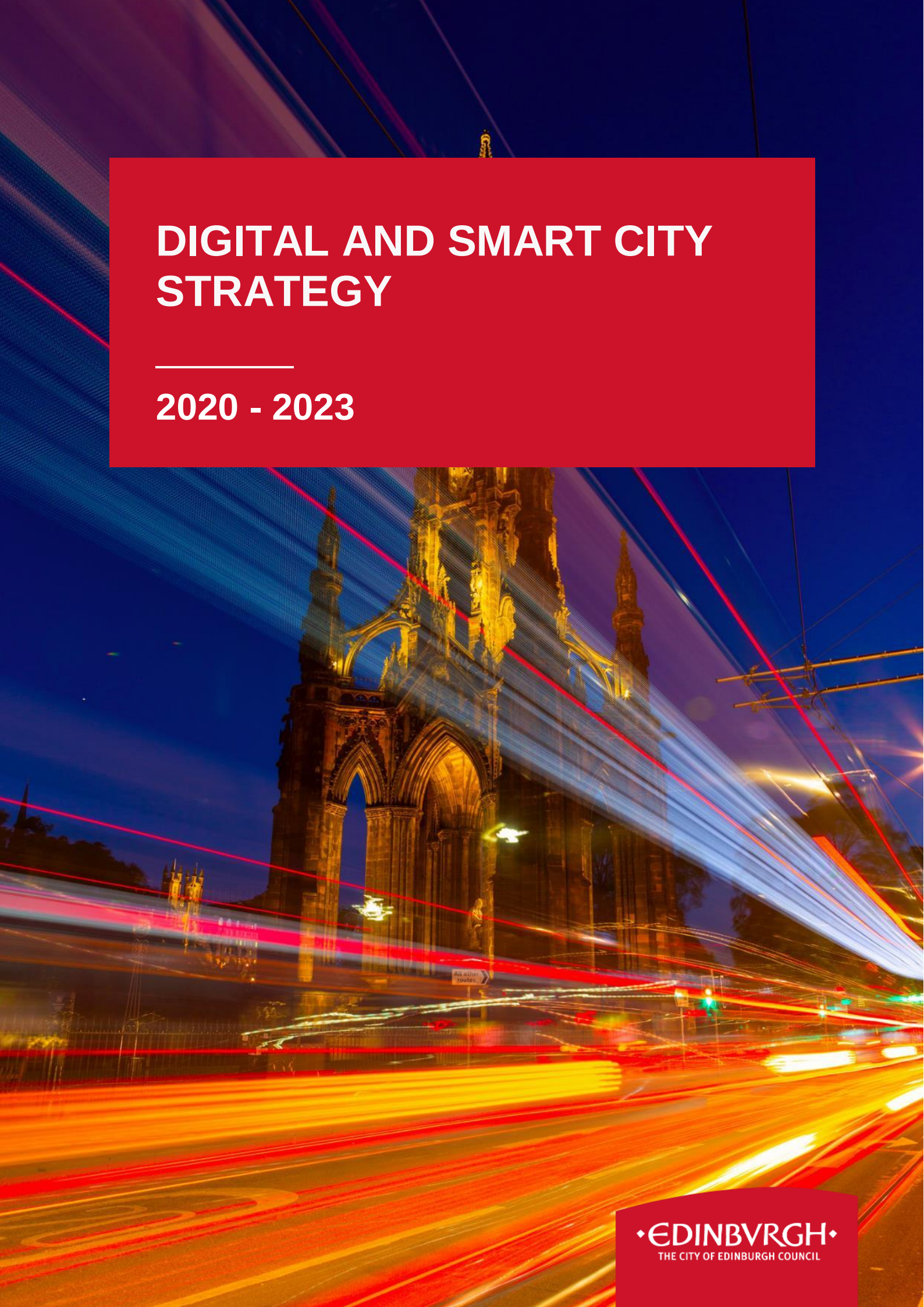
8.1 Empowering Edinburgh - ICT and Digital Strategy 2013

9. Appendices

9.1 Appendix 1 – Digital and Smart City Strategy 2020-2023

DIGITAL AND SMART CITY STRATEGY

2020 - 2023



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Executive summary

This Strategy clearly defines how Digital Technology and Smart City Innovations can support the ambition of Edinburgh's 2050 Council Vision.

The Strategy sets out a fresh approach to the provision of services for a modern efficient local authority operating in a digital age. Increasingly, technology plays a major role in the delivery of all Council services, in the way our city operates and in the economy of the whole Council area.

Over the course of the Strategy, we will reshape our IT services and help to reshape the city with a fully integrated IoT Platform. This will enable Edinburgh to take advantage of the opportunities afforded by new and transformative technologies to become a digital Council and a world leading Smart City.

Overview

This Strategy sets out the City of Edinburgh Council's approach to the sustainable development and delivery of technology to support the Council and enable Edinburgh to become a Smart City. The strategy will cover the period 2020-2023.

Technology plays a vital role in transforming the way we work, 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 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. The technologies we provide must enable our teams and staff to operate in the 21st century where technology is seen and experienced as an enabler for great service delivery, increased productivity and flexible and agile working. Using innovative technology and maximizing use of our successful solutions, will enable Edinburgh to become a leading Smart City providing benefits for our residents, visitors and businesses.

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 such as channel shift, cloud and mobile computing. It also covers our vision for Edinburgh as a Smart City.

The Strategy will support the Council in the delivery of the Council's Business Plan and the commitments within this

- Delivering an economy for all
- Building for a future Edinburgh
- Delivering a sustainable future
- Delivering for our children and families
- Delivering a healthier city for all ages
- Delivering a Council that works for all.

The Strategy also adopts the principles of the Edinburgh 2050 City Vision.

Vision

The City of Edinburgh Council Digital and Smart Cities Strategy is developed in line with the goals of the Council.

We will maximise the potential of digital technologies to improve outcomes and services for all our citizens, councillors, colleagues, visitors and businesses.

This approach seeks to place our technology solutions in line with the broader aspirations of the Council. It will ensure technology will become a key enabler for transformation of both the Council and the city.

In line with our enterprise reference architecture model, we will ensure that our infrastructure, systems and tools meet the needs of both customers and the wider Council. Our goal is to ensure that we:

- support the Adaption and Renewal programme
- deliver core technology services to cost and quality standards
- position data at the core of our Strategy
- comply with industry and national technology standards
- embed security within technology
- align technology with the aspirations of services
- deliver a flexible service delivery to internal users
- share systems and information with our strategic partners to centre service delivery around the citizen
- manage budgets to focus on new and improved technology services
- develop a technology roadmap
- simplify complex systems landscape and leverage cloud and subscription services
- put in place an appropriate governance structure to serve future needs, innovation, and transformation
- better understand the needs of our customers

Principles

We recognise a number of general principles and approaches that cut across all our strategic themes and, together, these provide a core of our digital and smart cities ambition and will provide consistency of approach across our organisation that places the people and communities who use our services at the heart of our planning.

Principle	What this means for Edinburgh
Re-Use, before buy, before build	• We will leverage existing capability where appropriate, seeking to simplify the ICT estate • Where customisation is required we will seek alternative solutions • We will look in the marketplace for off the shelf products delivering the capability required • As a last resort, perhaps as innovation 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 implemented 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, 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 sometimes be a need to do so • Solution decisions logged and any technical or service debt will be maintained in an architecture risk log
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	• Improving existing systems • Leveraging proven successes • Embracing modern collaboration • Sharing tools • More accessible systems that require little to no coding knowledge • Cloud computing web service platforms • Artificial Intelligence, robotics and machine learning

Method of approach

This Strategy is not developed solely by the City of Edinburgh Council but takes into consideration the direction of the wider public sector and global technology landscape including:

- McClelland Review of Public Sector Infrastructure
- Local Government Digital Office
- Scottish Government Digital Directorate
- Health and Social Care Partnership
- National Cyber Security Centre
- Public Sector Cyber Resilience Framework
- Edinburgh and South East of Scotland City Region Deal
- Scottish Cities Alliance
- UK Geospatial Strategy 2020-25
- Industry and sectoral best practice.

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 and aligned with the goals of the Council
- align with the changing needs of the business
- provide excellence in customer service
- represent value for money
- promote a ‘Cloud First’ adoption
- ensure 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 information to the organisation
- removes perceived friction and optimizes delivery paths
- provides alternative provisioning options.

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
- transform 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 with partner organisations
- listen and engage with our customers to deliver the maximum business benefit from our technology.
- reduce costs and achieve savings
- maximise return on IT investment by getting the most from out 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
    - improve data quality.

Governance

A range of governance tools will be put in place to provide assurance that the technologies we implement, and the investments made to put these in place, serve the strategic aims of the Council, the business needs of services and are in line with this Strategy. A balanced governance model will provide flexibility with optimal discipline

In addition to the implementation plan for this Strategy and its reporting requirements to Corporate Leadership Team, a Smart Cities Board will be established with relevant workstreams such as CCTV, sensor technology and connectivity associated with and reporting to it.

The Enterprise Architecture Board will be re-invigorated and:

- ensure that we have an agreed baseline architecture
- guide technology investment decisions - including funding investments
- review technology standards, processes and procedures
- make recommendations for the implementation plan and future technology strategies.

Additionally, we will take forward:

- updated cloud and cyber security strategies
- clear ICT governance arrangements
- participation in national and regional programmes
- collaborative working with partners
- strategic alignment with Council goals and vision
- opportunities for innovation.

All 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.

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 our 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
- develop opportunities to channel shift our internal customers to self-service options through the portals.

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:

- 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.

Change management

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

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

Change requests will be assessed and coordinated through a joint change review board. The board will check that requests have a supporting business case and align to our enterprise reference architectural principles and technology roadmap. Project deliveries will be 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
- project/programme management – providing data on the open, completed, cancelled and pipeline projects including how well we are meeting timescales and budgets
- single Programme of Work to ensure projects are strategically aligned, well communicated, and are delivered on time and within budget
- simple and complex change performance metrics including change backlogs, delivery on time, value-for-money and customer satisfaction.

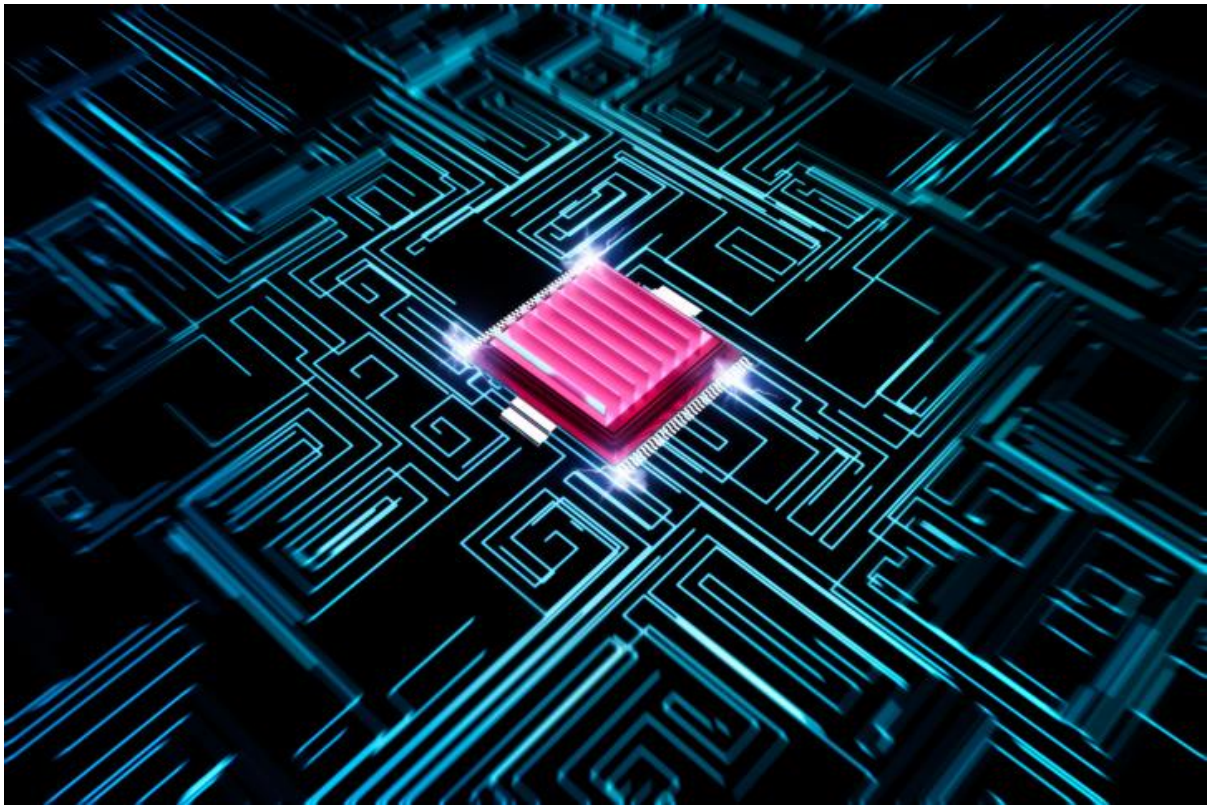
We will deliver success by:

- managing projects and priorities consistently
- 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
- 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. We will 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. We will:

- implement a Cloud First approach to technology change
- move ‘mobile and flexible’ from an option to standard and explore opportunities for improved flexible working options e.g. thin client delivery
- increase opportunities to support use your own device (UYOD) for staff
- exploit the potential of MS Teams for collaboration opportunities
- maximise the potential of the MS365 platform for low code Council-based innovation and development (Digital and power user-based) - develop 'patterns' for use cases
- maximise potential of MS365 to support learning and teaching operationally, in delivery of curriculum, engagement with parents/carers and strengthening of wider community links.



Business solutions

As well as changes to our infrastructure and the way we transform the business, we need to position our line of business systems to be an engine for change. This will mean:

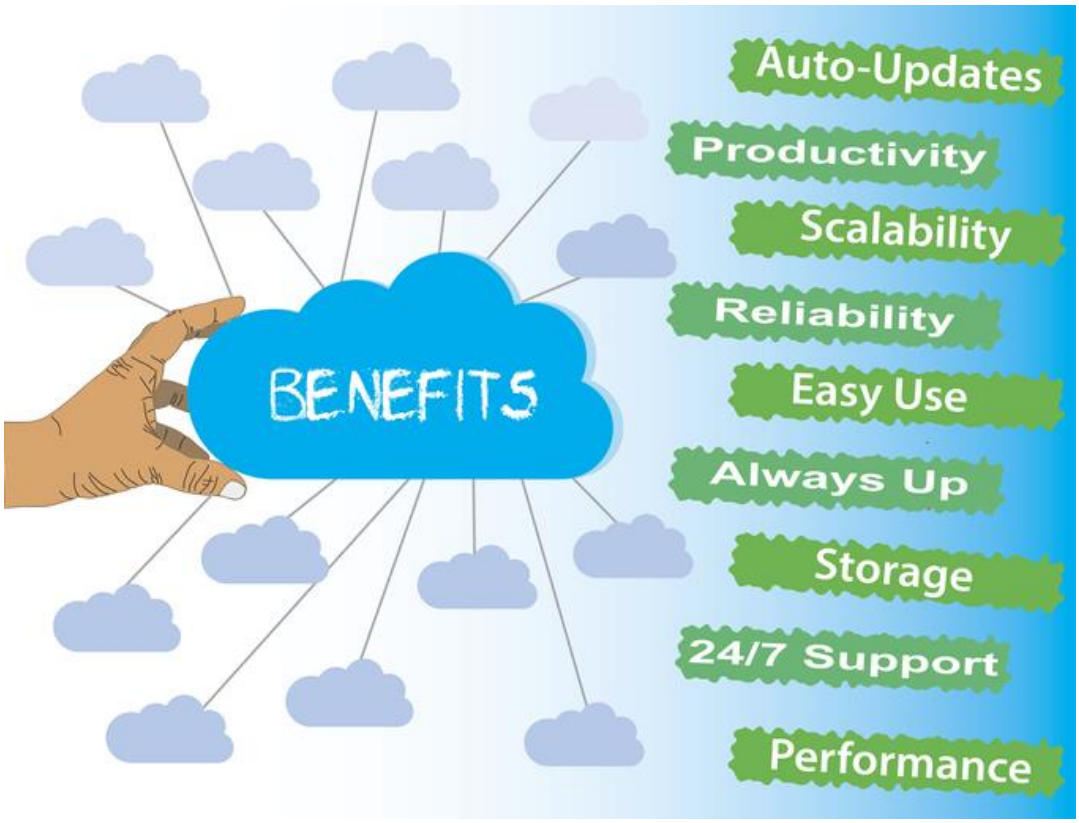
- ensuring that the systems are fit for purpose
- ensuring that the data we hold is the data which we need and is accurate and up to date
- developing system and staff capability to be responsive to changing business needs
- rationalising our application portfolio wherever practical to reduce datasets, costs and 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 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 EA 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.

Cloud

Over the next few years we will move many of our systems and technology services to the ‘cloud’ where it is appropriate and cost effective to do so. Cloud computing is the concept of delivering technology services, business systems and back office applications using servers and hardware that are not based in the Council and is at the core of our technology transformation.

Cloud base computing services offer several benefits to the Council and supports the transformation of our business and the changing way we work. 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 prepare and implement a ‘cloud migration strategy’ to support our own business needs and aligning with the Scottish Government Cloud First approach.

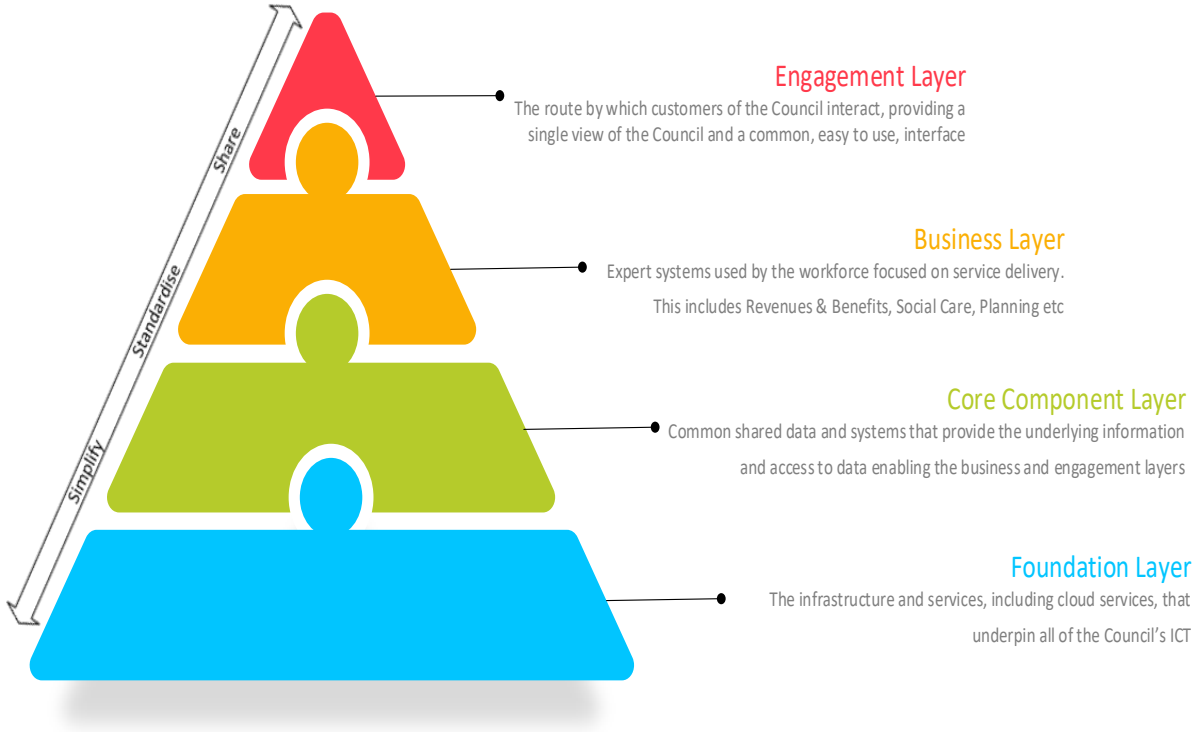
Enterprise reference architecture

At the heart of this Strategy is a business reference architecture that lays out the fundamental design of the Council's Digital Services going forward.

Our architecture can be defined in four layers - foundation infrastructure, core components, business solutions and engagement layer. Each of the four layers is vitally important to the Council achieving an accessible, scalable, flexible and functional architecture at a minimised cost of ownership.

The approach acknowledges the need to:

- **share** – the infrastructure, making it easier to scale and be flexible
- **standardise** - the components and business applications, making it easier to operate
- **simplify** – the engagement layer, making it easier for customers to interact.



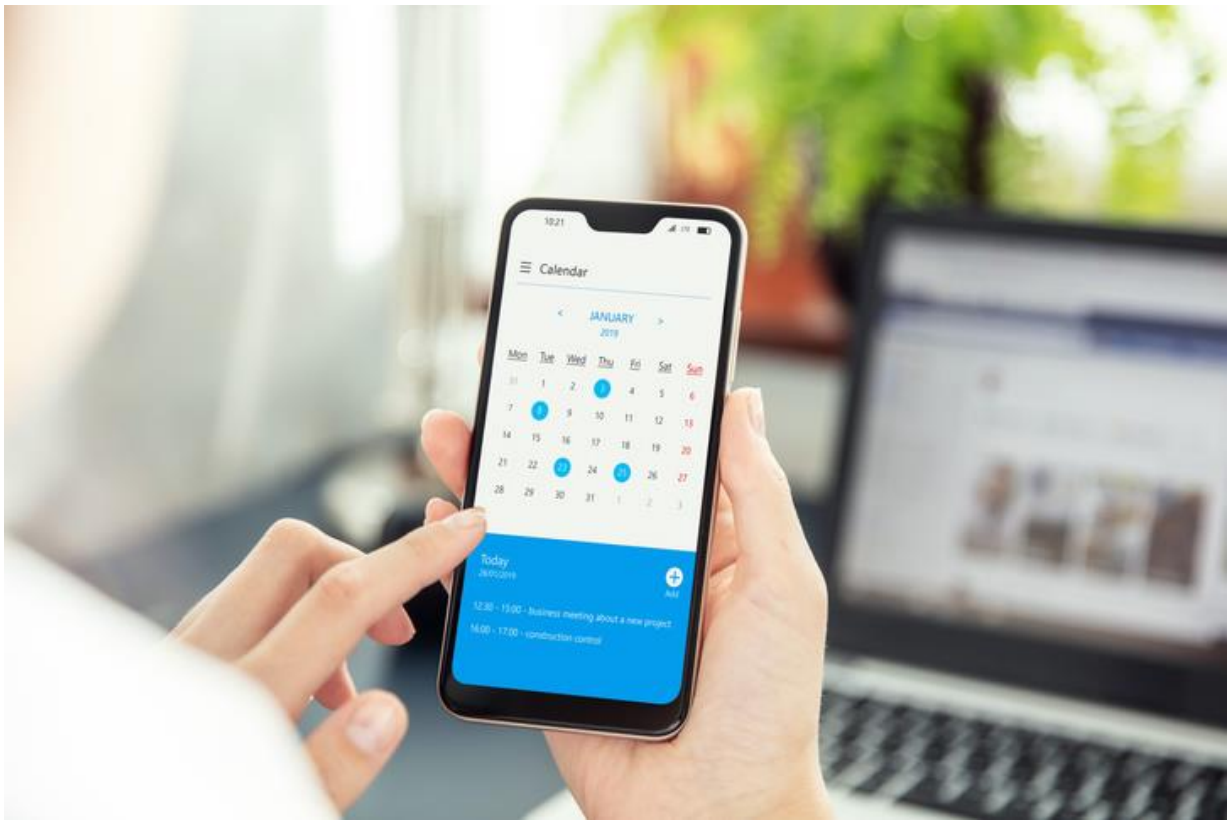
Paperless strategy

The Council has already embarked on an ambitious strategy to become paperless. To date this has involved:

- reducing the use of colour printing ink in copiers and copier usage in general
- reducing the amount of paper used across the Council in all its forms
- reducing the storage space required for legacy and future paper documents
- reducing the cost of processing transactional print items such a letters and forms
- identifying Lean and automation opportunities and developing and deploy them while promoting digital processes rather than paper-based ones
- ensuring that we are as cost effective and efficient as possible and consider using recycled paper when permitted.

The future goal of this project is to establish a digital mail room which will:

- improve delivery time of mail to staff
- reduce storage
- reduce transport and carbon emissions
- support flexible ways of working
- support electronic document management.



Security

We will ensure that the Council infrastructure is secure and resilient ensuring that continuity of services is maintained using appropriate technical measures to protect our network and the data we hold in our systems.

The security challenges we face are increasing and ever changing. As well as more documented attack routes such as virus or ransom ware, other challenges are emerging. Our increased use of multiple and remote devices creates a challenge to protecting this as our increased use of systems and who accesses them increases the attack surface for those wishing to compromise our security.

We will:

- ensure we follow current NCSC guidelines, including NCSC 10 steps to Cyber Security
- ensure compliance with the Cyber Resilience Framework, CE+ and PSN
- improve our cyber defenses eg phishing, network access control, data loss prevention implementation of all NCSC active cyber defense tools
- enhance password policy
- gain all required accreditations
- upgrade/remove legacy applications
- implement a framework to manage shadow IT
- move the onus on patching to vendor/contract by moving services to the cloud
- review opportunities for thin client delivery to improve security
- provide a comprehensive security training and awareness platform for all staff to help detect, deter and defend against cyber threats
- 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)
- maintain and develop cyber risk management framework
- develop a comprehensive communication plan for cyber security.

Customer digital engagement

The people and communities who engage with us to receive services or information from 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 online choices and 24/7 digital access to public services.

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
- channel shift – continually develop channel shift opportunities to maximise the proportion of 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.

Though the Customer Digital Engagement programme we will look to create a single view of our customers to better model and shape our services and provide more targeted support to those citizens who need it most.

This will:

- provide a ‘golden record’ across our customer-based business systems using the UPRN and UCRN 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.

Data as an asset

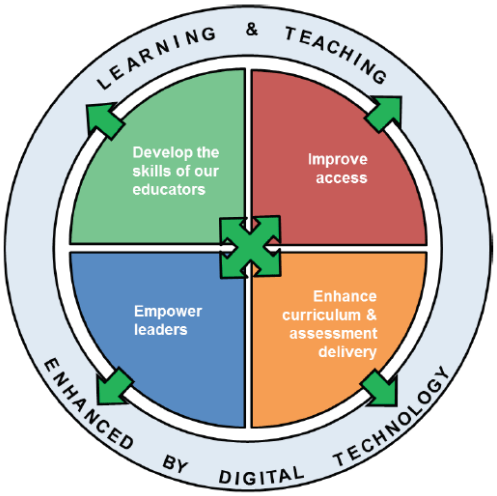
Our data is an asset that is of value to the organisation and our partners and needs to be managed accordingly. Through better use of systems, we will ensure that our data is:

- easier to identify and find
- managed consistently across the organisation
- transferrable into information to support our evidence-based decision making
- support the work of our localities
- stored once and defined by effective metadata and information governance frameworks/rules
- structured to support a single view of the customer
- subject to constant analysis and review cycle to ensure effectiveness data management and governance (IGU)
- ensure our data is used and shared ethically
- open data where possible and capable of exploiting Smart City Data
- exploitable by AI in generating potential automations, additional intelligence, security heuristics etc.

We will work with services to improve the tools that enable a Council-wide approach to business intelligence to enhance services and digital engagement with our customers and our communities. We will also highlight the benefits of sharing open data and its use to help model and shape our services and our city.

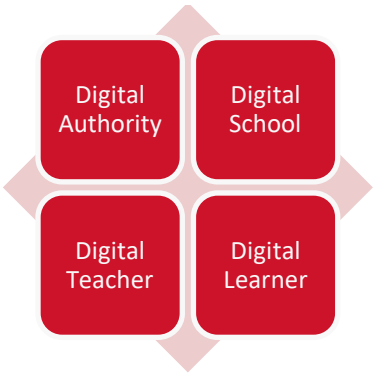
Digital Learning

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. This approach will ensure we complement the existing work on Digital Learning and support the Edinburgh Learns Strategy.



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:

- develop the skills and confidence of educators in the appropriate and effective use of digital technology to support learning and teaching
- improve access to digital technology for all learners
- ensure that digital technology is a central consideration in all areas of curriculum and assessment delivery
- empower leaders of change to drive innovation and investment in digital technology for learning and teaching.



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 access to social media to engage with organisations. Consumer expectations will continue to radically change the ways in which we work and the work that we do.

The expansion of consumer technology 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.

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 have digital skills for life, learning and work. Skills that will empower them to become the digital citizens and workforce of the future
- teachers who utilize digital tools to support their working, 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

- provide and sign-post a wide range of digital support tools and materials
- provide adult learning opportunities using e-learning opportunities
- deliver 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
- focusing on STEAM subjects to ensure learners are prepared with a digital toolset fit for future life and workspace
- embracing our core platform MS365 to ensure continuity of resources, allow networking between settings and safe interactions with external partners.

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 of reducing poverty and improving well-being. The work of the Edinburgh Poverty Commission, for instance, describes how lack of access to appropriate 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 benefits or connect with support networks.

People can be digitally excluded for several reasons. Some may be excluded due to lack of access to resource, others may have literacy or numeracy challenges whilst a number may also be excluded due to age. Those that are excluded from digital technologies may lack skills, confidence and motivation. These factors can be compounded by a lack of access to resources. Our aim is to ensure that no-one is left behind digitally, and detailed planning will take place to turn this aim into reality. The detailed plans for all initiatives will accompany this document once concluded.

Our aim is to provide our citizens with 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 connectivity is available in our community spaces including libraries, schools and early years settings
- ensure citizens can access resources 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
- 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 low cost affordable broadband is available for Council tenants
- 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 as effectively and intelligently as possible
- 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.

For Edinburgh this will include:

- connectivity – 5G and FTTP
- sensor technology, IoT, AI
- smart parking and EV charging
- wearable and mobile tech
- smart public transport
- city Wi-Fi
- smart energy
- health and social care
- smart citizens
- DDI
- conversational platforms
- GPS/GLONASS and location analytics
- greater citizen engagement.

Smart City operations centre - the future now

Smart City operations can be solutioned through multiple layers in different timescales - utilising and extending existing capability that the Council has already invested in and introducing new capability including:

- citizens, staff and visitor “sensors” via your customer channels solutions
- smart infrastructure and buildings via IOT connected network(S)
- CCTV and traffic management at the core
- physical location with optimal connectivity
- integration, analytics and alerting.

We will review our Smart City capability and create a portfolio of smart city projects that balances short-term versus long-term impact, risks, investment and social value, and establishes key strategic outcomes. As part of the work of the board, we will:

- develop a structured innovation management framework and innovation toolkit that builds on best practice from a broad range of relevant sectors
- work with 3rd party telecoms providers to exploit the connectivity available to us
- adopt and support the development of relevant Scottish UK and international Smart Cities actions and standards to build trust and confidence, ensure interoperability, and provide shared frameworks for city transformation plans
- develop governance to ensure a well-integrated smart city approach and coordinated governance of critical elements associated with portfolio, data and information management, cybersecurity, procurement, ethics and privacy
- connect and share smart city knowledge, learning and assets
- introduce incubator projects at low cost to pilot tech benefits to solve real world problems

Innovation

Innovation is about addressing problems in new and original ways that better meet the needs of customers. Many developments in both the systems we use and in Smart Cities technology are experienced as innovation, having a disruptive impact on how services have previously been experienced or delivered; both positive and negative. For the Council to match stakeholder expectations and realise benefits for them, it is recognised that time and resources must be dedicated to innovation, in proportion to the resources available.

The Council sees two forms of innovation driving empowerment:

- **un-proven:** The first focuses on new 'unproven' technology, where the Council would be an early adopter
- **proven:** The second is the adoption of new, or re-use of existing, proven technologies by the Council. This approach will be supported through a business case approach.

Both approaches will be supported as appropriate to the technology and the solution. We will promote an understanding of new products, process, services or technologies that are emerging in the market, both locally and globally as well as from SMEs and well-established providers.

We will:

- support an innovative culture across the Council
- enable third parties to pitch innovative concepts to the Council following procurement guidelines
- 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.

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 2020 to 2023.

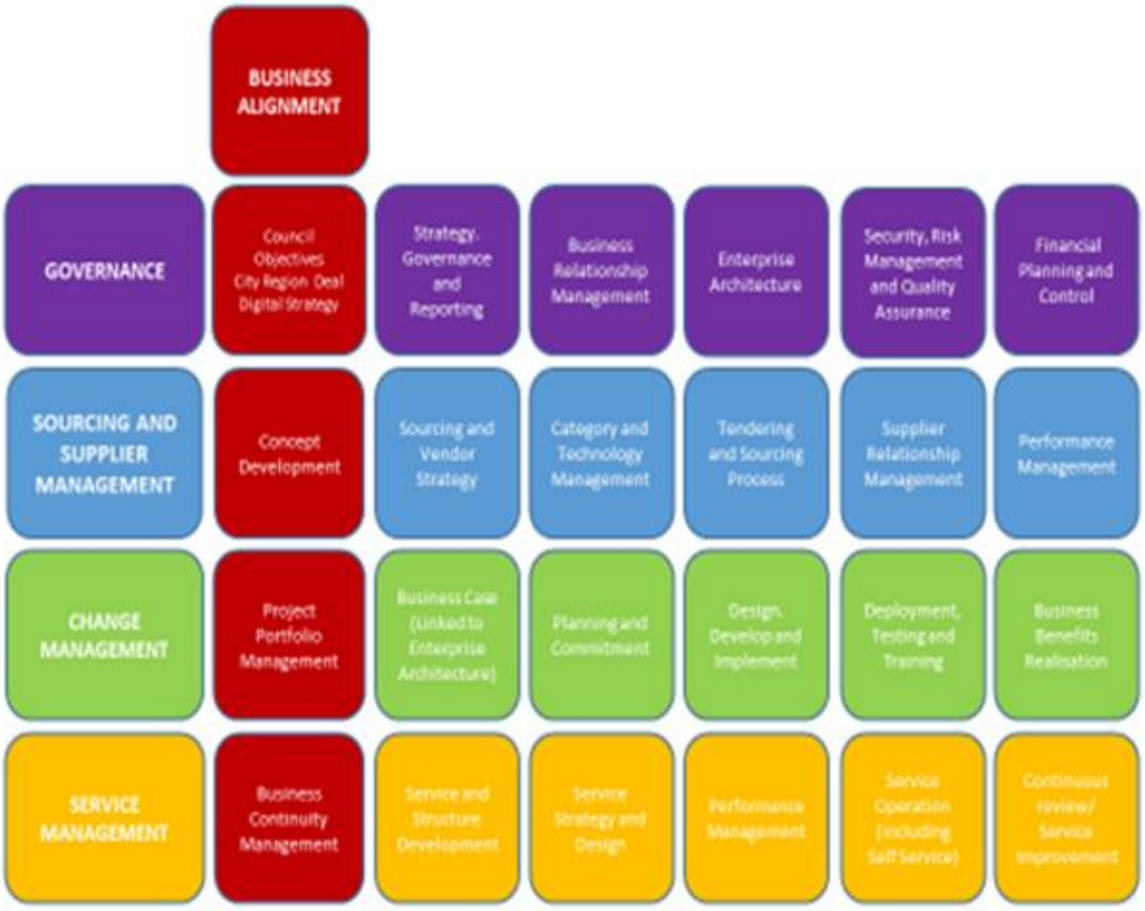
An implementation plan will be prepared to support the Strategy and will be reviewed and refreshed quarterly to ensure that all projects are included and that targets are being met. This plan will show:

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

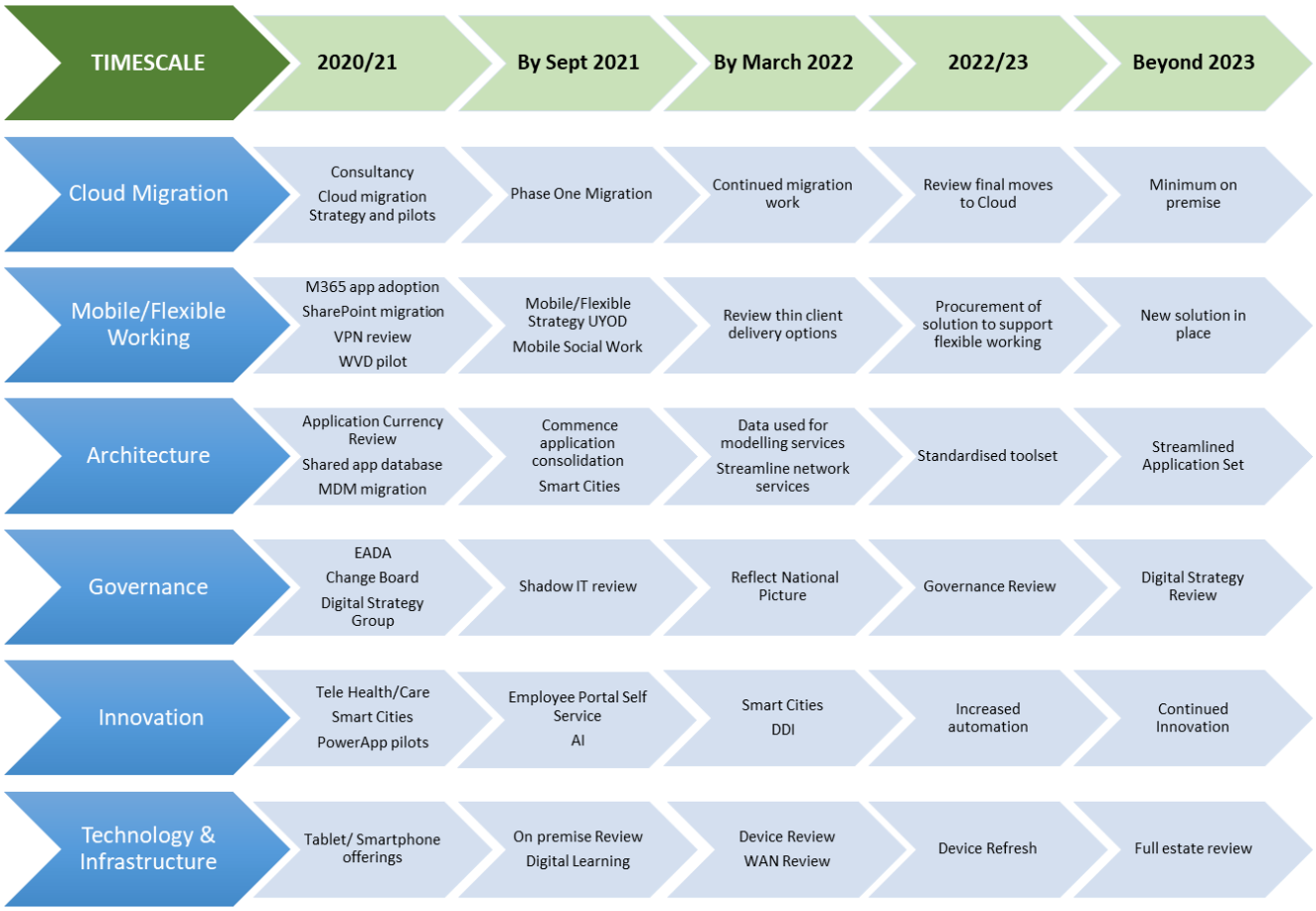
The initial implementation plan will be reported to Corporate Leadership (CLT) with quarterly updates on progress also reported to CLT.

Appendix A – Technology standards

Example of technology standards roadmap



Appendix B – Technology roadmap



Appendix C – Local Government Reference Architecture