REPORT TO: CITY GOVERNANCE COMMITTEE – 4 MARCH 2024

REPORT ON: IT STRATEGY 2024-2029

REPORT BY: EXECUTIVE DIRECTOR OF CORPORATE SERVICES

REPORT NO: 62-2024

1.0   PURPOSE OF REPORT

1.1   To seek approval for the adoption of the IT strategy for the period 2024 to 2029.

2.0   RECOMMENDATIONS

2.1   It is recommended that the Committee:

(a) agree to the objectives of the IT strategy.

3.0   FINANCIAL IMPLICATIONS

3.1   The 2024-29 Capital plan contains, under designing a modern Council, £5.217m for purchase of computer equipment, £3.798m for a desktop collaboration platform, £1.4m for schools' connectivity, £1.5m for desktop collaboration software, £350k for asset management system replacement. This funding will contribute towards the implementation of the IT strategy.

4.0   BACKGROUND

4.1   This report identifies the proposed strategy for delivery of the IT Service, digital technology, Infrastructure, and applications. The strategy supports the objectives to design a modern Council and the guiding principles and themes of the Council digital strategy.

4.2   Over the life of the previous IT strategy there has been significant investment in our technology and development of the IT service. The following provides an example of what was achieved:

- Implementation of Microsoft 365 providing increased flexibility and collaboration
- Hybrid video conferencing with Teams – provided the ability to host meetings with attendees being onsite or remote
- Migration of all IT infrastructure to a third-party co-location facility
- Delivery of the digital platform that has enabled digital transformation across the Council
- Implementation of a cloud-based Customer Contact Centre providing citizens to request or access Council services anytime anywhere

4.3   This strategy outlines objectives and principles that will be used to guide future developments and delivery of digital technology. It identifies some key projects that will be undertaken to provide secure, efficient, sustainable, and affordable IT.

4.4   The IT service now provides all the digital technology that underpins the operation of the Council and supports digital transformation and service improvement. The IT strategy sets out how the IT service will be aligned with the objectives and requirements of the Council and will provide a robust and secure platform for digital transformation.

4.5   The IT Strategy reflects technology and infrastructure changes that will be instrumental in building an IT service to help the Council drive change, generate efficiency savings and deliver the Council's strategic aims and objectives.

5.0 POLICY IMPLICATIONS

5.1 This report has been subject to the Pre-IIA Screening Tool and does not make any recommendations for change to strategy, policy, procedures, services, or funding and so has not been subject to an Integrated Impact Assessment. An appropriate senior manager has reviewed and agreed with this assessment.

6.0 CONSULTATIONS

6.1 The Council Leadership Team were consulted in the preparation of this report.

7.0 BACKGROUND PAPERS

7.1 None.

JACQUI KOPEL

HEAD OF CUSTOMER SERVICES & IT

ROBERT EMMOTT

EXECUTIVE DIRECTOR OF CORPORATE SERVICES   16 FEBRUARY 2024

Dundee City Council Information Technology Strategy

2024-29

Contents

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1.1	15/12/2023	GQ	Initial draft version
1.2	06/02/2024	GQ	Updated with feedback from staff workshops
1.3	12/02/2024	GQ	Added risks and updates to some sections

Approval Record

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1.2			

Introduction

This document sets out the Council's strategy for our IT Service over the period 2024 – 2029 and how technology and the IT service can support Dundee City Council in delivering its key priorities.

The role of the IT Service is essential to the delivery of all Council services and is fundamental to most business transformation across the organisation. With advancements in technologies and communication methods used by our residents, this IT Strategy aims at ensuring the Council stay ahead and continue to explore new and better ways technology can help our residents access our services in the ways that are right for them.

We live in a digital age where service models and people's expectations of when and how they access services are changing. Demand for Council services are increasing, alongside a challenging financial situation means the need for cost-effective IT solutions has never been greater.

Future IT service delivery must be secure, efficient, sustainable, and affordable. Making best use of technology will help ensure services are fit for purpose now and in the future. We will ensure the needs of the Council are met through close collaboration with services areas, innovative design, and a customer centric approach.

This IT strategy will be updated over the life of the document to respond to the changing and evolving environment the Council operates within. It has been developed with the following considerations:

- changing demands for technology to support the Council digital strategy
- hybrid working and the increased demand for more flexible ways of working
- the fast-paced changing technological landscape
- new IT service delivery models that embrace cloud computing
- the changing model for funding the IT service. Moving away from traditional capital funding to revenue-based costs
- increased need to prioritise compliance, establishing secure data management practices, and protecting data the council stores and uses
- the Council's commitment to net zero, sustainability goals and reducing environmental impact of all Council services
- the increased global threat from Cyber Security attacks
- significant financial and economic challenges facing the Council
- requirement for continual investment in the IT service to ensure we can maintain business as usual, develop the service to meet future demand, and gain efficiency and cost savings from the latest technologies

This IT Strategy reflects technology and infrastructure changes that will be instrumental in building an IT service to help the Council drive change, generate efficiency savings and deliver the Council's strategic aims and objectives. The IT Service aims to provide excellent, customer service, user experience, and embrace technology as an enabler for efficient and economical services.

Our IT Vision

The Vision for this strategy and the IT service is to support and embrace new technology, infrastructure, applications, and digital solutions required for the future. We will:

Provide secure, flexible, integrated solutions, based on the best technology to help deliver a modern Council. Collaborate closely with customers and stakeholders to develop future-proof solutions that enable service transformation across the Council.

Objectives

Advances in technology present opportunities and challenges for the Council. We will ensure that technology solutions are designed to provide agility, flexibility and be aligned to strategic objectives. We will make use of industry expertise and work closely with technology partners to best understand changes in the market and how new technologies can benefit the Council.

The strategy will be aligned with the Council Plan, Corporate Services Service Plan, Digital Strategy and Net Zero Transition Plan, the key objectives of the IT strategy are:

- to deliver secure, robust, and affordable IT platforms
- implement a cloud first approach for new solutions
- provide digital technology to maximise the digitising of processes
- ensure investment in technology meets the needs of the Council
- encourage innovation and smarter ways of working
- deliver the best user experience of technology, applications, and digital services
- build technical solutions around customer's needs
- develop the IT service and solutions to support the transition to net zero
- provide high quality customer care and communicate changes clearly

Principles

Our Strategy reflects upon the Council Values, these underpin the IT service key principles. Those key principles are:

- value our customers
- collaboration
- flexible and innovative
- efficient and economical solutions
- technology as an enabler
- secure
- accessible and simple

Infrastructure

The IT infrastructure must be planned and developed to align with the needs of Council services. More applications and services will be moved to cloud computing. While a cloud first

approach will be adopted, we will consider the cost and best fit approach to delivering each solution. Adopting hybrid cloud will provide a flexible and cost-effective approach to support all applications.

We will take advantage of the benefits cloud computing offers the Council. Enabling us to reduce legacy running costs. This will free up staff and create capacity for development and innovation.

The Council are committed to climate changes as set out in Dundee Climate Action Plan which set goals of becoming net-zero by 2045 or sooner. The IT Service is fully committed to protecting our environment and enhancing it for the future. We will design and architect IT solutions whose impact on the environment is understood. The cloud first approach will ensure that IT services are sustainable and carbon emissions are more easily controlled and minimised. Some cloud services can be made available on demand, which means they are not running unless they are required. This reduces the consumption of the service and therefore reduces costs and carbon emissions.

Infrastructure Architecture

A set of guidelines and principles will be developed to support decision-making and design of the infrastructure. We will follow industry standards for enterprise architecture based on the IT Infrastructure Library (ITIL) Framework, and The Open Group Architectural Framework (TGOAF). These frameworks compliment the IT Service Management (ITSM) principles already in place.

Adopting Enterprise Architecture practices helps align business and technology and is used to define requirements and the rationale for IT solutions. Service transformation and digital projects will benefit from these principles by streamlining and reducing complexity of decision making for IT solutions.

This architecture approach provides a set of procedures and standards that directs analysis, planning, design, and implementation, and are used to:

- support evidence-based decision making
- provide a consistent set of guidelines for all IT solutions
- aid in the definition of functional requirements
- allow for close collaboration between IT and service areas
- align technology with service delivery outcomes
- continually assess the IT infrastructure to support changing and growing demands
- ensure IT solutions provide value for money and return benefits

Infrastructure Principles

A modern, secure, and robust IT infrastructure is essential to enable digital transformation and provide a foundation for future IT service delivery. Traditional hardware and data centre

investment will be replaced by cloud services and platforms capable of supporting the future needs of the Council and changes in demand.

Continual investment in IT infrastructure and technology solutions will be essential to maintain a robust and secure IT service. To support digital transformation and changing demands for IT services the following key principles will be used:

- **Network Infrastructure** – our connectivity and network will be built on robust, secure fibre technologies and complimented with high-speed wireless. We will build a secure reliable Wi-Fi network to support users across all Council offices and schools. The network will be built to meet demand from services and provide a flexible, cost-effective future-proof solution for digital transformation.
- **Zero Trust Network Architecture** – a new security model to support the changing demand from users and further enhance the anytime, anywhere access requirements. This model fully supports cloud, hybrid cloud platforms, applications and will help enable the digital services and technologies we need to meet the Council's long-term strategic objectives.
- **Cloud Infrastructure** – Infrastructure as a Service (IaaS) will be utilised to replace current on-premises infrastructure. Providing a secure and robust environment to enhance the Council's disaster recovery and business continuity. We will use on demand cloud services to reduce costs and eliminate the need for large hardware refresh projects.
- **Cloud Platforms and Services** – we will leverage the flexibility of Platform as a Service (PaaS), to provide services like virtual desktops, telecommunications, databases, and business intelligence. PaaS offers a complete development platform and deployment environment that can be used to develop apps and other resources.

Application Portfolio

The IT service manages a large portfolio of business applications required to support the many different Council services. This portfolio has grown over the years and most applications are still hosted within the Council data centre. A new approach to application management and support will be developed.

We will collaborate with application owners and users to develop a full understanding of current application capabilities across the Council. Co-ordinating, planning and maintaining the application roadmap for upgrades, and identifying development opportunities. Gaining a better understanding of business requirements to fully utilise the functionality of each application.

Our approach is to reduce the size of the application portfolio, and have more integrated, flexible, cloud hosted applications. This will help to reduce costs and release valuable resources for more innovative work. New requirements will be assessed against the current application portfolio to identify duplication, and opportunities of rationalising, whilst maintaining the cloud first approach.

Where new applications are required, they will be fully assessed with suppliers, procurement, and the service area to ensure alignment to IT and digital strategies. We will use this process to ensure they meet the required security standards, are cost-effective and meet the business objectives. The cloud first strategy will allow us to take advantage of the economies of scale of cloud. When possible, we will host applications on our cloud platform, rather than pay for a supplier to host the application on a different platform.

The interface between applications will play a vital role in fully digitising processes and helping build a modern Council. We will reduce the burden on the IT service having to develop the interfaces, making use of open and accessible standards and common technology components.

Application Principles

Cloud applications will enable easy integration with data and other innovative technologies such as business intelligence (BI) and artificial intelligence (AI). This can be used to make systems more efficient and allow us to continuously improve processes, while also helping manage automated workflows, improve decision making and support smarter ways of working.

We will streamline solutions and develop the future application portfolio with the following principles:

- reduce the size of the application portfolio
- minimise the work required from IT to support, upgrade, and integrate applications
- collaborate with application owners and users to develop a full understanding of current application capabilities
- where appropriate use Software as a Service (SaaS) for application delivery
- ensure that Application Programme Interfaces (APIs), or similar web services are provided wherever possible
- investigate the integration of applications with cloud technologies like AI and BI
- we will adopt as many standard features as possible from the applications we buy, instead of spending time adapting applications to meet our specific needs

Security

Maintaining the security of IT services has never been more challenging due to the significant increase in cyber-attacks, ransomware, malware, and other threats. Security will continue to be a priority for all IT infrastructure, applications, cloud platforms and data. We will build new solutions that are designed to be secure and resilient.

A continual review of security systems, technologies, policies, and procedures will be carried out to ensure new risks are identified and mitigated. We will make use of best practices, cyber security alerts, advice and tools made available through national organisations such as National Cyber Security Centre (NCSC), Scottish Cyber Co-ordination Centre (SCCC) and Cyber Security Information Sharing Partnership (CISP).

We will ensure that our defences against cyber threats are as robust as possible. Protecting not only against technical and workforce risks, but also understanding the threats, and maintaining comprehensive knowledge of our IT assets. Risks are managed through the Council risk register; IT risk register and IT asset management plan.

Secure and resilient IT services built on cloud platforms and utilising fibre network infrastructure will enhance business continuity and disaster recovery. Providing a cost-effective solution for protecting critical Council applications and making restoring services in a disaster scenario easier and faster.

A key component of cyber security is educating our people in how to use devices and how to identify potential threats. Raising awareness and understanding of the threats from cyber-attacks will be a regular part of our cyber defence.

Security Principles

- Follow national guidelines and frameworks including the NCSC 10 steps to Cyber Security, Scottish Government Cyber Resilience Framework, NCSC Cloud Security Principles.
- Ensure continued PSN accreditation is achieved, and work towards Cyber Essentials+.
- Participate in the NCSC Active Cyber Defence Programme.
- Work with partners and industry experts to improve our cyber security posture.
- Migrate away from legacy applications.
- Make use of cloud security technologies.
- Provide staff and elected members with ongoing learning and awareness to help build cyber security best practice.
- Work with partners across the public sector through participation in the Scottish Local Government Digital Office, the Cyber Security Information Sharing Partnership (CISP) and the Scottish Local Authority Information Security Group (SLAISG).
- Continually develop and review our security technologies portfolio and IT staff skills in line with the changing threat landscape.
- Our security controls will be balanced to ensure they are proportionate and allow services to be delivered securely and Council objectives achieved.

Digital Workplace

Creating a digital workplace will involve investing in the right technology to meet the needs of staff and supporting the objectives of the digital strategy. We will deploy digital tools and technologies for staff to carry out their work and deliver better services for the communities of Dundee.

Hybrid working models that encourage flexible, smarter, mobile, and remote working have become the norm. The digital strategy sets out to build a digitally enabled workforce and technology enabled services. Laptops have replaced desktops as the device of choice for

most staff. There has been a shift towards smartphones and Microsoft Teams being used for communicating. Staff are embracing the new applications and technologies and the use of Microsoft 365 for collaboration and communication has played a key role in this change.

We will encourage collaboration and knowledge-sharing through the use of tools like Microsoft Teams, SharePoint and platforms that facilitate real-time communication and file sharing. This will help to foster a culture of teamwork in the hybrid working environment. Fully supporting the flexible working arrangements with appropriate tools and technologies.

In our schools there has been significant growth in the number of mobile devices being used. We must provide support for learners and teachers in the rapidly changing use of technology and support their digital learning ambitions.

The life span of digital devices and technology is longer now than it has ever been. Carrying out maintenance and updates regularly will help to extend the life of the devices and ensure they are secure and continue to meet the service needs.

A customer centric approach to ensure we meet the demands of Council staff will be adopted. We will introduce new ways of engaging with staff and service areas to understand their needs and support them with the digital tools and technology. We will improve communication between the IT service and customers, consolidating systems, improving efficiency, and providing more channels for a better customer experience.

Digital Workplace Principles

The following principles will help us meet the demands of our customers and develop a digital workplace for a modern Council:

- we will extend the use of laptops and improve the user experience with more flexible cloud platforms, allowing us to remove legacy applications and technologies
- continue to evolve the services and technologies used by staff, that are now essential to their daily work
- build upon the anytime anywhere access that is currently available, putting in place new solutions and technologies to improve security and make access to applications and data easier
- maximising the investment in the current digital tools and technologies and ensure we continue to have the right tools
- further develop the use of Microsoft 365 and the suite of applications it provides
- reduce costs and help meet some of our net zero goals by upgrading, refurbishing, and reusing laptops, desktops, and smartphones as much as possible
- improve customer engagement with a cloud-based IT service management portal. Enabling easy access to IT resources through a single point of contact with the IT service

Action Plan

This IT strategy provides the agility and flexibility to meet new demands and allows us to design the IT service to fit with Council priorities and objectives. Some key projects have already been identified to enhance our services. These are based on the principles described in the strategy and align with the Council Plan, Digital Strategy, Corporate Services Service Plan and Net Zero Transition Plan.

- **Fibre Network** – Increased use of cloud will mean an increased reliance on the internet and a need for more internet bandwidth. This will require a robust and reliable fibre network infrastructure to ensure demand for capacity can be met. Delivery of a new city-wide fibre network to connect all schools to high-speed internet is underway. This project will begin a transformation of the Council network to support the demand for cloud and internet-based services for the future. The high capacity of fibre and ability to upgrade capacity easily, meets the requirements for access to cloud services. The fibre network will be extended to other Council locations where enhanced network service is required.
- **Cloud Migration** – the cloud first strategy will involve applications, databases, web servers and data stores migrating to cloud computing. It is expected a hybrid cloud model will be adopted for a period of time to support legacy applications that cannot be migrated. Infrastructure as a Service (IaaS) and Platform as a Service (PaaS) will be utilised to replace current on-premises hardware and services.
- **Zero Trust Network Architecture** – This project will require new modern security technologies to be deployed that will work across the hybrid cloud model, securing the fibre network and access to cloud services. This will provide a security backbone for all IT services that meets the needs of the Council and reduces risk from cyber-attacks.
- **Cloud End-User Computing (EUC)** – the current Citrix virtual desktop infrastructure will be replaced with a cloud service that provides secure access to applications, desktops, and data. A secure and robust environment will be developed, making use of the flexibility of cloud to adjust capacity to meet demand. The platform will enhance the Council's disaster recovery and business continuity. EUC will continue to provide the benefits of virtual desktops but without the large costs for licenses and hardware.
- **Cloud Telecommunication Platform** – the current on-premises telephone system is approaching end of life and requires significant investment. Migrating the telephone system to a cloud platform will support hybrid working and provide a low maintenance solution that can be securely and easily accessed from any device anywhere. A cloud communication platform will be capable of integrating with other applications such as Microsoft Teams, to provide a holistic communication solution. It will also provide an integrated customer contact centre capable of supporting multi-channel communications to meet the digital ambitions of the Council.
- **Legacy Applications** – a process to identify legacy applications and replace them with modern, cloud applications has started. Work will be carried out to review the full application portfolio and develop a plan for upgrade and migration.
- **Wi-Fi Network** - development of the Council Wi-Fi network will be carried out, to make it more widely available and easier to use for staff, learners, teachers, guests,

and visitors. It will support the increased demand in schools and corporate offices for the increasing number of mobile devices. We will put in place a new security model that provides a robust, flexible, and easy to use system.

- **IT Service Management** – a cloud portal to drive customer interaction with the IT service will be implemented. It will underpin our service improvement process and drive efficiency savings, helping to streamline processes and provide interactive feedback to staff. Access to the system will be easier and more widely available through the use of cloud, meeting the need for anytime anywhere access.

Measures of Success

We will measure our success by:

- reduction in the number of applications.
- the number of applications hosted in our cloud platform.
- the number of applications provided as Software as a Service (SaaS)
- number of open Application Programme Interfaces (APIs) in use.
- annual PSN accreditation achieved.
- cyber essentials+ achieved annually.
- increased use of Microsoft 365 applications.
- reduction in user support requests.
- improved staff satisfaction through annual staff survey.
- number of laptops in use to support anytime, anywhere access and hybrid working.
- the number of servers hosted on our cloud platform.

Risks

The environment that the Council operates within, and the pace of technology change continues to impact Council services and the work we do. The risks associated with achieving the outcomes of this strategy have been identified. Risks are managed through the corporate risk register and the IT Service risk register. We will work to mitigate risks and minimise any impact to the IT service.

Risk	Context	Mitigation
Cyber Security	Cyber-attacks present a significant risk to Council systems and data. Ransomware, malware, denial of service are the most common attacks.	Network security controls. Security and vulnerability scans. PSN accreditation. IT assets updated and managed.
Failure to meet business requirements	Changing demands from customers, requirement for digital services, Council objectives. IT being unaware of	Regular engagement with Council services. Investigation of new technologies that offer solutions for business requirements.

	new projects within a service or informed too late.	Continued investment in systems and applications. Application governance.
New technology	Fast pace of changing technologies. Disruption in the market from new technology such as artificial intelligence. Failure to upgrade and replace old systems and services. Lack of required skills and experience within the IT service.	Maintain awareness of industry trends and technology change. Engagement with third party suppliers and industry experts. Collaboration with service areas and learning and organisational development. Identify training needs through annual staff development meetings and one to ones. Ongoing investment in technology, infrastructure, and applications.
Hybrid working and external access to systems	More devices being used to access systems from outside the Council network. Data being accessed on multiple cloud platforms. Lack of user training and awareness, Failure to detect malware and viruses on devices.	Implement secure remote access. Regular updates of devices. Security scans. Cloud security tools. Regular audit of security controls and policies.
IT staff retiring or leaving. Lack of resources	Some very experienced staff approaching retirement age. Knowledge and skills lost. Less people to carryout essential work. Legacy system support not available. Difficult to find time for knowledge transfer. Lack of time for handover when someone retires.	Replace legacy systems. Use standard tools and resources. Work to set policies and procedures. Succession planning and knowledge transfer. Staff training.
Complex application integration or adaptation	Applications require IT staff to develop and support integrations. Bespoke requirements designed and created to adapt software.	Reduce size application portfolio. Simplify application development. Adopt existing functions and features rather than adapt applications. Standardise across cloud platform and less different technologies.
System failures	Potential for hardware faults. Errors following patching or upgrade. Network connectivity	Monitoring of resources. Investment and refresh cycles.

	issues. Lack of maintenance. Lack of capacity	Regular maintenance schedule. Management of assets.
Council staff training and awareness	Staff require training on new systems, new staff need to learn the systems we use. Knowledge and awareness required of cyber-attacks, digital tools available and good practices for information safety.	Close collaboration with learning and organisational development. Good communication of IT changes and developments. Engagement with service areas.

Governance

This IT strategy defines the direction for Dundee City Council over the next five years. However, as new opportunities and technologies emerge or the needs of the business change, the strategy will require to be updated. The strategy will be formally reviewed on an annual basis and progress reported to the Council's Corporate Leadership Team and City Governance Committee.