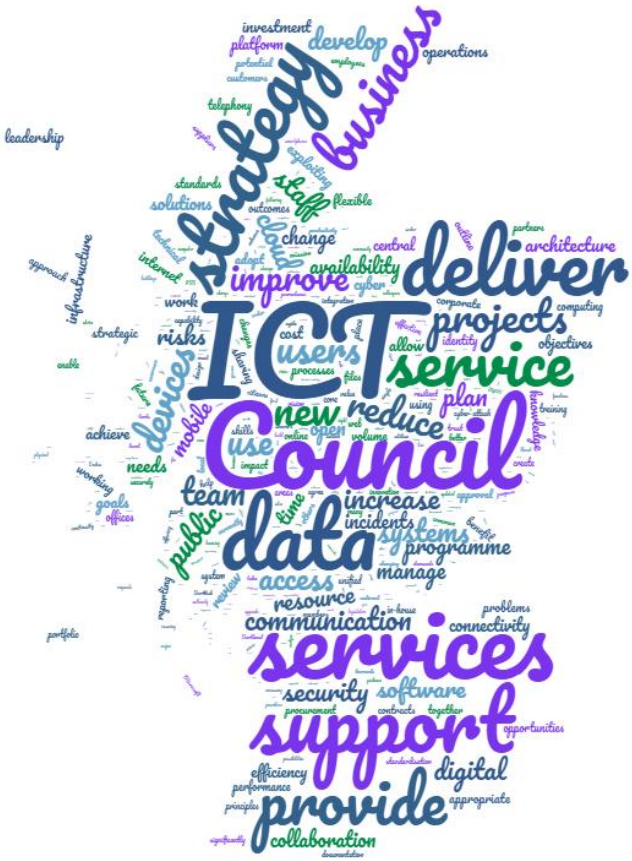
The Highland Council
Comhairle na Gàidhealtachd

ICT Strategy

2022-2027



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1. Executive Summary

Information and Communications Technology (ICT) is fundamental to the delivery of Council services and the organisation could not operate without it. This ICT Strategy is a major update that replaces the previous strategy which, although updated in May 2018, had not seen a significant change for some years.

The first half of this document covers the core content of the Strategy. More detail is then provided in the appendices.

This major revision recognises the following context:

- **Pandemic** – which forced a sudden change in the working patterns of staff and the delivery of service, all dependent more than ever on robust and secure technology.
- **Financial Sustainability** – not a new theme, but one that increasingly forces the Council to look for more efficient ways of working and get better value out of all investments.
- **Insourcing** – after more than 20 years of outsourced ICT service delivery, the Council made the decision to bring services back in-house.
- **National Strategy** – the national approach in Scotland to the delivery of Digital Services underpins the thinking behind the technology required for the future.
- **Scope** – more than ever citizens, staff, pupils and Elected Members are reliant on technology to operate.

Bringing ICT service back in-house is the biggest change in the Council's ICT since the introduction of PCs, email and the Internet in the 1990s and the Strategy states how the service will develop over the next 5 years and beyond. The key themes are:

- Building a local, sustainable, skilled and empowered **ICT team**.
- Continuing challenge and assessment of **ICT contracts** to ensure best value.
- Ensuring **ICT budgets** across the Council are aligned to deliver best value and the context outlined above.
- A **Technology Roadmap** that leads to greater resilience and security, reduces single points of failure, meets changing functional requirements, offers better value and is flexible and adaptable for the future.

Above all, the ICT Strategy is there to support the requirements of a forward-thinking and digitally enabled Highland Council. It is therefore an essential enabler for Digital Transformation and sits alongside related strategies covering Digital and Information Management.

2. Introduction

ICT is a critical resource required for the Council to deliver effective services to Highland citizens and communities. It is a key enabler for change and the backbone for delivery of the Council's Digital Strategy. This ***ICT Strategy*** describes an ambitious vision and plan to improve ***access*** to ***information*** and ***communication*** through ***technology*** and thus enhance the ability of ICT to meet the future requirements of The Highland Council. This will include an implementation and support blueprint for an improved ICT environment that brings ***capability*** to improve productivity and automation throughout the Council.

The ICT Strategy does not exist in isolation. In combination with strategies covering ***People*** and ***Information & Governance*** and ***Business Intelligence***, they all support the overarching ***Digital Strategy*** for the Council, with the ICT Strategy providing the ***technology*** focus.

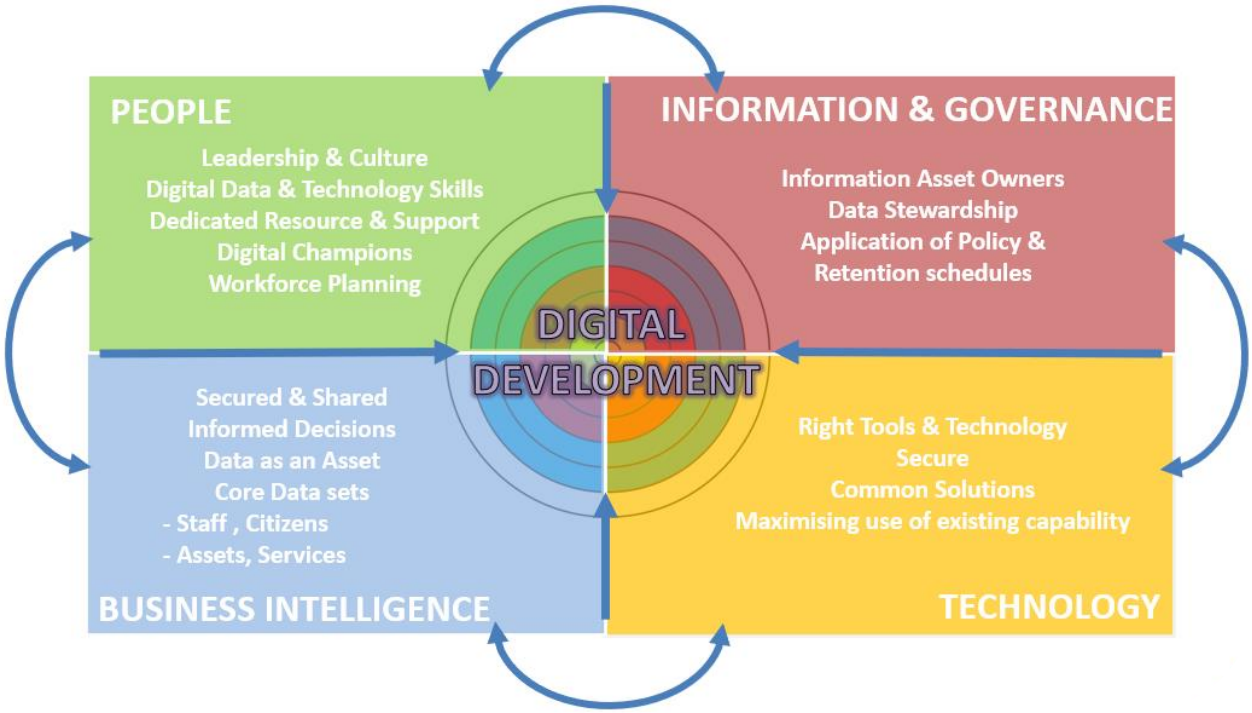


Figure 1 Digital Strategy Framework

The ***ICT Strategy*** underpins the ***Digital Strategy*** by focussing on the technology capabilities required by the Council. In contrast, the ***Digital Strategy*** describes the approach to utilise the technology to work smarter, through streamlining, standardising and automating business ***processes*** and procedures. Digital will lead to efficiencies in service delivery by exploiting the ICT investment to its full potential, through process automation using trusted ***data***, and increasing productivity through staff ***training*** and ***empowerment***. 'Digital Transformation' represents the changes in business ***outcomes*** through the delivery and implementation of the Digital Strategy.

The Highland Council supports the Scottish Government's aims for transforming public services using ICT. The Highland Council's ICT strategy is aligned with the national and Local Government strategic themes of:

- ***Citizen/Customer focus***
- ***Transparency and privacy***
- ***Collaboration and adoption of common systems and standards***
- ***A skilled and empowered workforce***
- ***Value for Money***

This document presents the Highland Council's ICT Strategy and sets in context the critical reliance on ICT to support delivery of Council services and strengthen opportunities for council-wide efficiencies. It replaces the previous ICT Strategy which was last updated in May 2018.

This strategy has been created with a varied audience in mind to demonstrate to our staff, customers, suppliers and partners our ICT vision, principles, goals, and strategic plan. Delivery of the ICT objectives will significantly enhance the ICT capability and underpins the Council's digital journey.

The Highland Council requires ICT to be agile and flexible to support business changes in a financially challenging and rapidly changing environment and in this context the understanding, this strategy presents a renewed vision and mission for ICT.

A significant programme of works will be established to deliver this vision, focusing on the following key ***outcomes***

1. ***Improve ICT support*** *– reduce ICT lead times, reduce ICT response times, increase 'right first time', increase ICT knowledge, increase customer satisfaction.*
2. ***Improve ICT resiliency*** *– increase availability of ICT systems, reduce volume of ICT problems, reduce volume of ICT incidents, reduce business impact during ICT problems, incidents, or major disasters e.g. cyber security incident.*
3. ***Improve ICT innovation*** *– increase ICT capability, increase ICT agility, increase ICT automation, reduce ICT risk*

At the core of the ICT Strategy, and the delivery of an ICT Service for the Council, are the three organisational corporate themes – Ambitious, Sustainable, Connected.

3. Context

Pandemic - The Covid-19 pandemic in 2020/21 brought significant threat to the overall delivery of council services. Overnight, the majority of staff left Council offices to "work from home". Never have we seen such a culture shift across the entire Council workforce to embrace new technology so quickly. Within a matter of weeks, a new remote working infrastructure was established. Communication delivered through 'soft-phones'. video/tele-conferencing and collaboration tools provided through the existing investment in our Microsoft 365 cloud platform helped the Council, partners and suppliers continue to deliver services for our citizens remotely.

As we move out of the pandemic, a new way of working is evolving with a blend of workstyles showing less reliance on fixed desks and physical buildings. The pandemic has proved that significant cultural change can happen quickly within the Highland Council and has presented the opportunity to review and re-evaluate the Council's ICT requirements based on this changing landscape.

Financial Sustainability – At a time of ever more challenging budgets, the need to drive better value out of existing ICT investment and the need to use technology to support digital transformation is more critical than ever. Technology alone will not lead directly to efficiencies, but combined with the people, process and data elements it can enable a significant change in how services are delivered.

Insourcing - The core ICT service, which delivers most user-facing functions, had been outsourced since 1998. However, over the last 5 years, disaggregation of the ICT service over several separate contracts and suppliers has been progressed with less emphasis on a single core service provider.

Following a strategic decision made by The Highland Council in July 2020, the bulk of previously outsourced services are now being delivered by the in-house team. This decision was based on the need to provide a user-focussed service that is not driven by profit, rather focused on ICT availability, support, innovation, and agility, and delivered by skilled staff based in the Highlands. From October 2021 to April 2022, most technical and operational aspects were brought under the direct control of the Highland Council ICT Services team, adding the ICT support and delivery functions to the existing project management and contract/supplier portfolio management functions currently undertaken in-house.

This move away from fully outsourced ICT services is a trend being seen across the public sector.

National Strategy – In March 2021, the National Digital Strategy for Scotland was launched. Subtitled "A changing nation: how Scotland will thrive in a digital world", this strategy was produced collaboratively by national and local public sector organisations. It has formed the basis for the Council's own Digital Strategy and underpins the thinking behind this ICT Strategy.

Scope - The overall scope of the Council's ICT service covers:

- End user device management including patching, updating and software installation and support of over 9000 windows devices and 30,000 Chromebooks.
- Network and Wi-Fi management of over 400 buildings together with our data centre and the connections between each.
- Management of over 350 servers hosted in our Data Centre – providing storage and back-up of over 300TB data from applications, databases and files.
- Support for more than 100 corporate and business applications.
- Management and delivery of the email and collaboration platforms providing over 70,000 emails per day and 800,000+ online meeting audio/video minutes per week.
- End user helpdesk for around 9,000 users together with field services support.
- Printing/scanning support across all buildings.
- Desk and mobile telephony support.
- Security management for the entire organisation.

4. ICT Vision

The Highland Council's Vision for ICT is to support the following 4 Strategic Pillars – "Economy", "People", "Place" and "Environment". To:

"Ensure that the right technology, with the right support, is in place to enable effective service delivery, enriched learning, collaboration and informed decision making for our workforce, partners, citizens, businesses and visitors."

5. ICT Mission

Delivery of the ICT Vision, will be informed by the ICT Mission statement:

"To provide reliable technology that will never be a barrier, and always be an enabler. To allow users to communicate, collaborate and make informed decisions effectively and efficiently by providing secure access to relevant applications, information and data, whenever, and wherever required. To enable business change and transformation across the Highland Council in conjunction with all Services through the sharing of knowledge, promoting best practice and supporting the ICT environment to ensure technology always provides a positive impact in the community and for the delivery of council services."

The strategic framework which will be used to implement this mission is aligned to key characteristics of a digital council as defined by Audit Scotland in January 2021, the National Digital Strategy for Scotland and reflected in the Council's own Digital Strategy:

- Our ***data*** will be secure, accurate, available, and become a trusted source of information to be used and adapted for decision-making by Citizens, Councillors and Employees.
- Our ***applications*** used to support the delivery of corporate and council services will be "secure by design" to safeguard the integrity of our data; accessible to provide access for all our users, and interoperable through open industry standards to ensure data can be shared between applications.
- Our ***technology*** will be flexible, resilient, and sustainable to ensure ICT investments are cost-effective and solutions can be designed around people. Providing enhanced availability, with an emphasis of managing virtual platforms instead of physical infrastructure.
- Our ICT ***staff*** will be developed and provided with necessary training ensuring they have the skills in the management and utilisation of the technology that the Council has invested in. Sharing relevant knowledge amongst colleagues, partners, and users of the ICT service.

6. Guiding Principles

Alongside the characteristics of a digital council referred to above, there are also three core principles that are fundamental to achieving our outcomes. These have been inspired from the national level and align to the guiding principles set out in other National and Local Government ICT Strategies. The Highland Council will adopt these principles within and across its own organisation and services:

- ***Collaborate****, share and re-use assets*: Service delivery strategies should be aligned to enable collaboratively developed and ICT-enabled service delivery processes. Pooled budgets and sharing of staff to achieve wider Highland Council outcomes. Centrally commissioned and managed ICT infrastructure and services, with the ability to measure, capture and share the resulting benefits and savings.
- ***Redesign*** *services to simplify, standardise and automate*: Services should be redesigned and ICT-enabled, using open and reusable standards to meet aspirations for 'anytime, anywhere, any device' access. Services, whether internal or external, should be 'digital by design'.
- ***Innovate*** *to empower all*: Social and digital inclusion should be enhanced by shifting ownership and use of information and technology towards the end user. Users, business process Subject Matter Experts (SMEs), ICT Services and the wider technology sector should be engaged in service design and delivery. Resources, information, and skills throughout the Highland Council and in the community will be used to build systems and services.

7. ICT Delivery Model and Staffing

The Council's ICT service is currently delivered through a blend of arrangements, contracted out and in-house, with responsibility for management and delivery of the majority sitting with the Council's ICT Services team. A core area that is still currently outsourced is the management of the datacentre, which sits with Wipro until April 2024.

The ICT service provides support for staff within the Highland Council, school pupils, Elected Members, High Life Highland and Valuation Joint Board together with connectivity with our partners such as NHS, Police and Housing Associations. It also supports the systems and technology required to interact with Highland citizens, visitors and suppliers.

As outlined in section 2, the Highland Council has brought most ICT services in-house. To achieve the goals outlined in this ICT Strategy, we need the right people in place. The Highland Council is committed to attracting and retaining local talent to manage ICT resources and our technology environments. The Highland Council will transfer and invest in ICT Subject Matter Experts (SMEs) to ensure ICT investment across the council contributes and compliments the outcomes outlined within this ICT strategy. Where necessary, services will also be brought in via strategic and tactical contracts from specialist suppliers.

The ICT Senior Management Team will be responsible for the strategic direction and delivery of ICT for the Highland Council. An outline of the proposed final high-level ICT functional structure is shown below. A full description of each of the core functions and how this contributes to the delivery of the ICT outcomes is provided in Appendix 1.

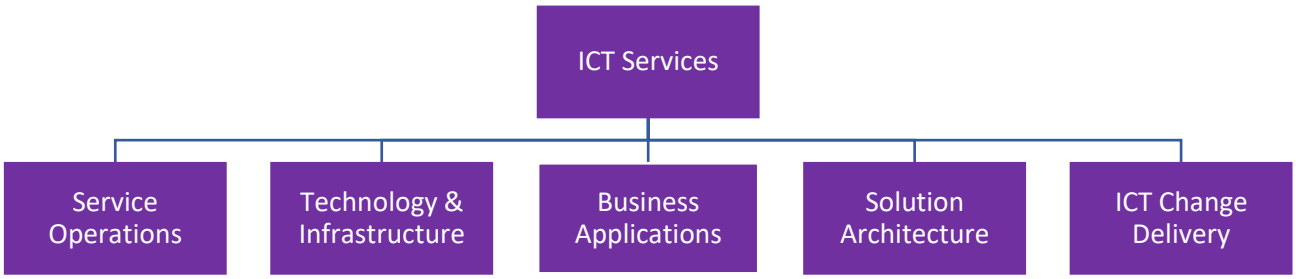


Figure 2 ICT Services Functional Structure

8. Training, Skills and Expertise

This ICT Strategy focusses on the specialist skills required to provide and support an in-house ICT service. The Digital and People Strategies outline the approach to strengthening digital and technology skills across the entire workforce and the citizens of Highland.

The Highland Council is committed to supporting a sustainable, skilled and empowered workforce. The ICT team have a broad skillset across project, programme, technical and supplier management. However, as technologies change at considerable pace, competencies will continually be evaluated through training needs analysis ensuring we keep abreast of the changing landscape and take opportunities to further develop our workforce.

Formal training will be supplemented by 'informal' skills/knowledge development to enable ICT staff to provide agile and flexible support, advice, and guidance. Ultimately to the benefit of all Highland Council staff.

ICT certified training, where required, will be in the form of industry recognised disciplines and/or technology vendors training as appropriate, including:

- Cyber Security (e.g. BCS, CiSMP & CISM)
- Strategy and Architecture (e.g. TOGAF)
- Information Management (e.g. ISO27001)
- Service Management (e.g. ITIL)
- Network Support & Telephony (e.g. CCT, CCNA)
- End User Devices (e.g. Dell, HP, Microsoft)
- Virtual/Cloud Platforms (e.g. Microsoft 365F, MTA, Google)
- Project Management (e.g. PRINCE2, Agile)

To attract and retain the right expertise in ICT, the Highland Council will work with schools, Skills Development Scotland and Further and Higher Education establishments in the north of Scotland, including the University of Highlands and Islands (UHI), to establish a workplace training programme. This will build on existing ICT Modern and Graduate Apprenticeships and look to introduce internship and work experience opportunities. This will benefit the team and also contribute more widely to the creation and protection of jobs within Highland.

The Highland Council has invested significantly in the Microsoft platform and office suite of software - Office 365 together with Google Workspace (formally, G-Suite) in the Educational environment. Further investment in training and skills will be necessary for staff and Members across the Highland Council to maximise and exploit these products and features, making use of the extensive resources available from Microsoft and Google.

We will provide a collaborative online forum for Council staff. Facilitated by ICT Services, this will become a 'community of practice' approach where staff can help each other across the Highland Council achieve goals using the suite of applications and technology we have invested in. This model is in keeping with the approach being advocated by Microsoft for use of their products.

The staff and Member induction process will be developed to include key messages about the Highland Council ICT service. These will cover the ICT service, employees' role in

securing our data and environment, and signposting to our ICT portal for additional knowledge, help and assistance. ICT Services will also actively promote Cyber Awareness within the Council.

9. ICT Contracts and Procurement

Even with an in-house ICT Services, the Council will always be dependent on numerous contracts for the provision of ICT. These may cover services, hardware, software and commodities such as network connectivity. Ensuring the right contracts are in place and management of those contracts is a core task of ICT Services.

There are finite resources within the Highland Council. ICT decisions can have ripple effects across the entire organisation, in terms of time, effort, and resource to implement such changes. To ensure the Highland Council delivers best value and to align ICT contracts with strategy, ICT Services will centrally manage all ICT procurements, in collaboration with the shared procurement service, and be the single purchasing approval authority for ICT system and software purchases.

Rigour and control of the procurement of ICT systems is especially important where access to personal or sensitive information is being processed. A robust ICT procurement framework will be put in place to ensure vendors comply with security and information management standards prior to contract signature, ensuring purchases fit with ICT and Digital strategies.

Before committing to expenditure on new ICT systems, it is essential that business cases outline efforts for change, including ICT effort, opportunity cost and overall organisational change management costs. Solutions offering the overall lifetime best value are often not the 'cheapest' ICT product or service. Total cost of ownership needs to be considered.

Commodities and consultancy will be purchased via Scottish Government frameworks as far as possible and where they provide best value. For core business applications various procurement routes could be followed depending on the complexity of requirements but the Council should generally follow the approach of forming strategic partnerships with suppliers rather than short-term contracts which require repeated significant effort and cost to change, providing no value.

Any new ICT infrastructure, application, or service must be aligned to the ICT strategy and overall Council objectives. The methods used for automation to deliver Council-wide efficiencies needs a joined up and collaborative approach to ICT – Data, applications, and technology. More specifically, ICT will be treated as a Council-wide asset and not 'owned' by a specific department or service.

10. ICT Budgets

ICT Services manage a central revenue budget that covers core ICT infrastructure, networks, support contracts and the majority of key business applications. Currently devolved budgets across the Council fund printing, some business applications, and some telephony costs.

ICT costs are not fixed. Costs are directly influenced by the number of users needing access to computers and software, the number of sites requiring infrastructure, and the volume of business applications procured, hosted, supported, and integrated. Additionally, the ICT industry is moving away from the traditional model of purchasing hardware and software outright to a subscription-based model where software and computing services are paid for as needed, meaning a shift in emphasis from capital to revenue budgets.

A review of ICT budgets across the Council will be undertaken, alongside a review of business application management arrangements, to ensure ICT budgets are aligned with new support arrangements, software licensing and the direction of travel for technology. Current budgets still partly reflect the model put in place for the outsourced service and that model was based on centrally funded costs being largely fixed each year due the certainty of contract pricing. Variable costs, such as printing and change projects, were then largely funded from Service budgets.

With a new delivery model, opportunities from new technologies and pressure to deliver greater efficiencies, the time is right to review budgets based on the various cost drivers.

By assessing the different types of expenditure, options can then be considered for a different budget structure that better supports service delivery, efficiencies, and is most sustainable.

11. Technology

The Highland Council has already made significant achievements in modernising ICT infrastructure and resiliency. Without this investment, the Highland Council would have had significantly more challenges delivering service to the public during the Covid-19 outbreak.

However, recent events in the public sector have highlighted the need to continue to enhance business resiliency in the event of a major incident such as cyber-attack. Our strategy is to disaggregate the ICT estate to ensure there are no significant single point of failure.

Broadly speaking this involves moving our systems and data to the cloud over a diverse range of platforms and vendors. In turn, the management of security will be based on the data that is being accessed rather than the current approach which provides access based primarily on being connected to the Council network – a model referred to as “Zero Trust”.

This approach allows greater flexibility about device types, support arrangements and risk appetite whilst also enabling us to simplify the technology infrastructure at sites and use commercial off the shelf broadband connectivity such as Fibre To The Cabinet (FTTC) or Fibre To The Premises (FTTP) where available, instead of expensive Wide Area Networks. As well as

potentially reducing costs this will also increase agility to change to meet a changing property estate.

Instead of managing physical data centre hardware such as servers, storage disks and components, the “cloud first” approach will result in a gradual reduction in the dependence on the Council’s dedicated data centre presence. This will mean more emphasis on buying in software or platform services either direct from our business application vendors or from generic cloud services providers.

End users will have significantly more freedom to access Council data and information at any time, any location, and on a device most suited to their needs.

The following is a list of technology initiatives to be delivered over the next 5 years:

- Zero-Trust and conditional access security model
- Single Sign On
- Modern End User Device Management
- Migration of shared drive data to Microsoft o365 and Google Workspace
- Cloud printing service
- Revised local area network architecture
- New model for Wide Area Network in conjunction with move to SWAN2
- Data Centre server review and rationalisation
- Move away from VPN connections
- Review of Virtual Desktop Infrastructure (VDI)
- Review of business applications hosted in the data centre
- Cloud backup service
- Cloud telephony and mobile telephony

An outline of the technology roadmap detailing the methodology and benefits is contained within *Appendix 2*. A detailed implementation plan will be defined and managed by the ICT PMO in accordance with the following governance structure.

12. Governance of ICT Strategy

The ICT Strategy defines the direction for the Highland Council ICT over the next three to five years. However, as new opportunities and technologies emerge or the needs of the business change, the strategy will need to be updated. The strategy will be formally reviewed on at least a bi-annual basis.

The following is the governance structure for the ICT Strategy, together with an outline of their respective responsibilities:

Executive Leadership Team

The Highland Council Executive Leadership Team are responsible for providing leadership and championing "*Digital Transformation*". Their role for the ICT Strategy includes:

- Agree to and support the ICT Strategy
- Agree the ICT Strategy Board membership
- Ensure the creation, management, and implementation of Business Continuity Plans specifically in the event of a complete loss of ICT
- Support standardisation and re-design of business processes and/or procedures to facilitate efficiencies and modernise service delivery using ICT automation
- Sponsor the development of business cases to deliver transformation or change
- Scrutinise the realisation of expected benefits from transformation or change

Change and Improvement Board

The purpose of the Change and Improvement Board is to promote innovation and strategically develop, coordinate, and manage change and improvement activity across the Council, making appropriate investment recommendations to relevant committees and Council and providing direction and guidance. The Board will provide assurance for future change and improvement projects and ensure alignment with Medium Term Financial Planning, support of service improvements and savings in line with the Council Programme, Corporate Plan and relevant strategies.

ICT Strategy Board

The ICT Strategy Board is responsible for providing senior level guidance, leadership, and assurance that the ICT strategy meets the requirements to deliver the Highland Council's Corporate Plan objectives. The role of the board includes:

- Provide strategic oversight and co-ordination of all Council ICT-related expenditure – revenue and capital
- Define, maintain, and review the Council's ICT strategy including the overall vision, mission and goals for the Council's ICT infrastructure and service
- Approve the objectives and deliverables for the Council's ICT strategy and monitor progress of delivery plans
- Support strategic alignment of ICT to Council Programme, Corporate Plan, Service Plans, business strategies
- Provide oversight of ICT deliverables from other corporate programmes such as the Digital Transformation Programme
- Scrutinise the realisation of benefits from ICT investments
- Agree changes to corporate ICT policies
- Provide oversight for "standard" change and routine management activity (managed through BAU processes)
- Ensure alignment to ICT capacity and architecture for any ICT developments and changes

- Encourage, develop engagement, and champion best practice with ICT staff across all Services
- Point of escalation for the prioritisation of ICT resources for conflicting demands
- Maintain overview of Council ICT and cybersecurity risks including making decisions on the mitigation of any escalated risks

ICT Senior Management Team

The ICT Senior Management Team are responsible for the development and updating of the Council ICT Strategy for recommendation and approval by the ICT Strategy Board. They have ultimate ownership of ICT service delivery and performance against objectives in accordance with the strategy, including:

- Leadership of the Highland Council ICT Services
- Providing strategic ICT advice to service departments
- Leadership and management of ICT staff
- Defining and recommending policies and standards for ICT systems and services
- Lead procurement and delivery of ICT technology and services
- Oversight of Information Management, Systems Assurance and Security
- Management and oversight of all ICT contracts
- Oversight of the ICT technology ensuring that technological choices are made to maximise the long-term value and treated as a business asset of the Authority
- Review and approve business cases for ICT projects
- Assess performance against objectives
- ICT Risk management
- Provide assurance to the ICT Strategy Board that risks are being effectively managed across the Services, including reporting the 'top 5' risks to the board monthly

ICT Team Managers

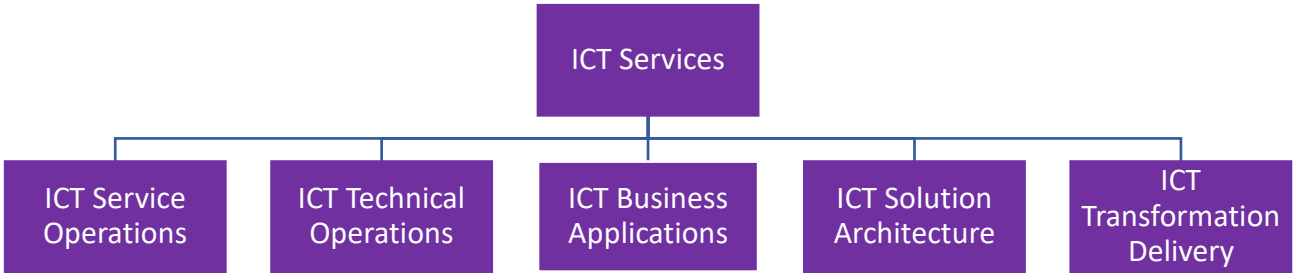
- Operational management of relevant ICT team
- Creation and maintenance of standard operating procedures (SOPs)
- Provide advice, guidance, and information on technical issues
- Ensure compliance with ICT Standards
- Request dispensations for variations from such compliance where appropriate
- Assure the coherence and consistency of the ICT systems architecture
- Monitor developments in new technology and reporting on their potential benefit to the ICT SMT
- Identify potential risks for inclusion in the ICT operations risk register
- Provide mitigation for risks, reporting any unmitigated to the ICT SMT

ICT Project Management Office

- Management of “gateway” process for governance of ICT projects or projects with a significant ICT dependency

- Programme level risk and issue review
- Manage the overall delivery of the Council's portfolio of ICT projects
- Resource planning and prioritisation of ICT Transformation Delivery resources
- Ensure requests have been assessed by required stakeholders and approved by the relevant technical authority
- Track issues relating to delivery of ICT work packages
- Track progress against Implementation Plan
- Accept or reject new risks proposed for inclusion in the ICT Projects Risk Register
- Review and report progress to ICT SMT
- Progress against key projects established to deliver the objectives within this strategy will be reported regularly to elected members through the appropriate Service Committee.

Appendix 1 – ICT Team Structure



ICT Operations – Service

This team is responsible for the day-to-day customer-facing support function (i.e. ICT Help Desk and Field Services) and the management of the business and financial processes required to provide a joined-up service.

Clearly defined ICT processes and procedures are vital to achieving the desired outcomes of the ICT Strategy – specifically, improving support for the users of the Council's ICT. The in-house ICT Service Operations team will transform ICT service delivery by providing a user-focussed service, owning user and business communications relating to ICT changes, incidents, and problems. Improvements will be made by creating a one-stop-shop for communication of ICT messages and known issues. Help and support guides for common help topics will be created and maintained to provide upskilling, and ICT knowledge for all.

In maintaining a fit for purpose central repository of quality ICT documentation, operating procedures, and guides, it is envisaged ICT support staff will have the right knowledge and improved technical competency to fix problems and assist end-users more effectively. This will increase first-time fix rates, reduce field engineer visits, and reduce time to resolve issues. Equally, by channelling ICT information and knowledge though a central searchable repository this will empower end user to 'self-help', resulting in less calls to the support desk, reducing ICT response times and allowing ICT support staff to prioritise more complex user problems.

Clear distinctions will be agreed between 'help and support' and 'incidents' ensuring incidents always receive the highest priority based on impact to the Highland Council. Incidents and problems will be managed to understand correlations and ensure the correct focus is given for resolution. Informing affected users of progress and outages as appropriate.

Further service improvement will be realised through streamlining and defining an agreed ICT catalogue of software, hardware, and services to be delivered efficiently - allowing end users to 'self-serve' where possible. This approach will make it much easier for the end-user to know what is available within ICT Services and will provide standardisation, with a view to

reducing lead times for requests and allowing ICT staff to excel in their knowledge of the defined portfolio of products and services provided.

Investment in call monitoring will permit training and coaching opportunities to support our ICT service delivery staff. Improving customer service skills and enhancing staff effectiveness will provide a more efficient service.

Service improvement will be prioritised though monitoring the ICT unit's performance against objectives. Ultimately this should increase customer satisfaction, which will be benchmarked as part of the Highland Councils overall ICT performance through the Society for Innovation, Technology, and Modernisation (SOCITM).

ICT Operations – Technical

The ICT Technical Operations team is at the heart of the ICT service, responsible for managing ICT infrastructure, developments, and implementation of technical changes. This includes management, maintenance and security of edge site networks, telephony, printing, device operating systems and software together with the platforms they run on, such as Active Directory and Microsoft Office 365. This team will build, deliver, and support the underlying technology outlined within this ICT strategy.

The team will move focus from managing hardware and "deployments", to managing cloud and virtual platforms and resources. They will implement policies and processes to enable new ways of working flexibly from anywhere, and securely with any device. This will also include working collaboratively with Education & Learning to enhance the Google/Chromebook platform.

The strategic approach is to simplify ICT support where possible. The Highland Council will increase availability of ICT systems and reduce volume of incidents by providing and managing robust, resilient, and reliable platforms that are independent of the Council's physical network. This will ensure no 'single points of failure' for critical systems.

Change processes will be adapted to be more agile allowing quicker implementations when the risk and potential impact is lower and improving our ability to respond to the needs of the business.

All knowledge will be stored in the Configuration Management System (CMS) for use by ICT staff. This will help with promptness and accuracy of problem diagnosis by ICT support staff, ultimately reducing business impact during ICT problems, incidents, or major disaster. e.g. cyber-attack.

The team will work 'hand-in-glove' with the Solutions team. Problems will be reviewed, and where appropriate, opportunities taken to implement components of our new architecture with a view of saving overall cost, time, and effort.

ICT Operations – Business Applications

The ICT Business Applications team will manage the Council's business application portfolio. With the council having over 100 applications to manage, this ICT team will liaise with line-of-business application owners and senior users to develop a single view of business applications across the estate. Co-ordinating, planning and maintaining the Council's application roadmap for upgrades, and identifying developments opportunities for changes to systems.

Having a single team to support all ICT elements of business applications will facilitate and identify synergies across the organisation - allowing transferring of skills, identifying duplication, and opportunities of rationalising whilst supporting the ICT strategy of migrating applications to the cloud.

This central team with the understanding of business applications capabilities across the entire council also allows us to exploit functions for greater efficiencies. This team will have the skills to develop integrations, allowing systems to be linked together and business processes automated using appropriate methods to remove manual inefficient processing within our business units.

The team will assess applications from a cyber resilience perspective, ensuring they meet the relevant security and operational standards. Applications and business systems will be assessed to define the criticality within the Highland Council to aid cyber resilience planning.

Commercial and strategic account management of third-party ICT contracts relating to business applications will sit with this team. They will liaise with project managers, central procurement, suppliers, and the wider ICT team, leading any ICT procurement ensuring alignment with the Council's ICT Strategy. This function will, through review of the ICT Contracts Register ensure that procurement activity is commenced timeously, allowing for evaluation, as required, of existing services and their ongoing fitness for purpose. The specialist ICT focus will ensure value for money, assurance that procurement of services will meet the required business outcomes as well as providing an escalation point.

ICT Solution Architecture

The ICT Solution Architecture team will be responsible for the IT Business service function providing ownership of the end-to-end ICT service supporting all council functions.

This approach will provide a central ICT team equipped to identify, analyse, and utilise the most appropriate data sources, applications, and technology to design sustainable and reliable ICT solutions. Working closely with the ICT Technical Operations Teams, Business Application Team, and the Transformation Delivery Team they will translate business requirements into ICT technical requirements, propose options, and deliver solutions.

The team will support business change through engagement, oversight, design, and co-ordination of changes within in the ICT environment. Ensuring the delivery of a secure, resilient, cost effective and sustainable ICT environment for the Highland Council.

The focus of this team will be innovation - designing ICT solutions that meet business requirements whilst co-ordinating the implementation and defining the support model.

Centred around end-user experience, whether a citizen or an internal user, the team will facilitate automating business processes with the use of technology to help deliver efficiencies and achieve desired business outcomes. This will highlight areas of duplication and opportunities for consolidation across the entire Highland Council ICT portfolio.

The team will collaborate with other councils and public sector organisations for adoption of common systems, approaches, and standards. They will actively participate in working groups and partnerships such as Scottish Local Authority Security Group (SLAISG), Cyber Security Information Sharing Partnership (CiSP), Local Government Digital Office (LGDO) and the Improvement Service (IS).

To further support the goals and objectives of this ICT Strategy, this team will ensure relevant design documentation and configurations are created, reviewed, and kept up to date. Information will be shared and referenced by all ICT staff through a central repository and in turn used to facilitate standard operating procedures to aid fault resolution, restore times and reduce business impact during incidents.

Ultimately, this team will provide overall solution design and assurance over the build and delivery of all ICT and digital solutions in line with this ICT strategy. The team will provide knowledge and expertise to assist ICT development and innovation, playing a critical role in the Council's work to digitally transform service delivery.

ICT Transformation – Delivery

The ICT Transformation Delivery team, working in close alignment with the ICT Solution Architecture team, will co-ordinate and deliver a portfolio of ICT programmes, projects and initiatives driven by business change and transformation, i.e. the "non-standard" and more complex requests. The team will also provide co-ordination for the more routine ICT activities such as system upgrades and refreshes. This contrasts with the Service Operations team who will deliver a range of standard ICT hardware, software and user management functions from a defined catalogue of services. This catalogue approach ensures end users have an efficient service for "standard" requests.

In managing non-standard requests, the team will ensure the co-ordination of stakeholders including relevant Highland Council Service teams, third-party suppliers and internal ICT teams to capture and define business requirements. This will cover the facilitation of options

appraisals, working up business cases and co-ordinating projects and work packages, including ICT implementation phases through to acceptance into service.

The team will have responsibility for the organisational change management activity required in relation to business change and transformation, ensuring effective change management across its portfolio of work to clearly define business outcomes and expected benefits certifying they are clearly understood and owned through the lifecycle of delivery and acceptance into service.

This team will support performance improvement and business change initiatives across council services by providing advice, guidance, and resource to oversee the co-ordination of ICT requirements and delivery into service.

The team will align closely with the Council's wider transformation and organisational development teams, to support the co-ordination and implementation of change and transformation initiatives. This approach will increase responsiveness of the ICT service, improve understanding of the business needs and allow clear prioritisation of work in line with Council priorities.

An ICT Project Management Office (PMO) function will be established within the delivery team with a focus on driving business value and impact, to oversee resource requirements and ensure ICT initiatives are correctly scoped, evaluated and reported against time, cost, quality, and risk. This PMO will work closely with and use the same processes, standards and tools as the wider corporate PMO function within the Transformation Service.

Appendix 2 – Technology Roadmap

Cybersecurity

The most significant challenge within any ICT environment is protection from cyber-attack. The threat is ever growing, and evidence suggests that nearly 50% of businesses experienced a cyber-attack or breach in 2019 and 1 in 5 of them experienced a material outcome, losing money or data. 2020 was the busiest year on record for UK cyber-attacks against businesses, with a 20% increase in attempted hacks from 2019. Close partners have first-hand experienced of a cyber-attack during the pandemic. Organisations holding personal data are statistically most likely to be attacked, with the most common attacks being fraudulent emails, viruses, and malware.

A major loss of ICT would cost the Highland Council millions of pounds in lost productivity, involve significant time and cost to recover and lead to reputational damage. Consequently, the ICT Strategy has cyber security at its core.

Every day there are conflicting demands between providing new ICT requirements and managing cyber security risk. These risks are generally managed by restricting access to the Council's network for all devices not managed by Highland Council ICT Services and ensuring all devices that connect to the network are secure and protected. Unfortunately, due to the nature of cyber-attacks and viruses spreading over a network, we must protect the entire environment. Within the current ICT environment, this means treating every user and device the same as they all must interact together, and thus are all equally vulnerable and susceptible. These necessary restrictions within the current ICT environment can stifle productivity and change.

However, advancements in cloud computing provide the Highland Council opportunities to change this approach. The existing investment in the Microsoft 365 platform provides the steppingstone.

The Highland Council plans to migrate from an "on-premises" infrastructure to the cloud. This will include a move to a "Zero Trust" architecture which moves away from a model of providing access to ICT resources based on which physical network you are connecting from, to a model where policies and conditions specific to the ICT resource being requested provide the control over access, independent of the network. This enables the Highland Council to have a significantly more flexible approach around what devices can connect to our network, whilst maintaining a high level of security.

This architecture will enable and significantly reduce barriers for Education & Learning to achieve the outcomes defined in their ICT in Learning Strategy (ICTiL) strategy, ensuring technology is not a barrier. Equally it will provide significant opportunities for other council departments and partners, including High-Life Highland and Valuation Joint Board to have a more flexible approach to devices and technology.

Ultimately, the Highland Council will provide an improved ICT service and support for users through cloud-based technology to support new ways of working, independent of location

and physical network. This should ensure that ICT is well-placed to meet the ICT requirements of the Council and provide the platform for Digital Transformation of public services.

The following sub-sections highlight the key technology changes planned:

Datacentre / Cloud Hosting

The technology architecture will go through a re-design to significantly reduce, and in many cases eliminate the reliance on the datacentre and "corporate network" connectivity. The Highland Council will reduce the volume of servers through a shift towards files, storage and modern applications being hosted by third-party providers, interfaced in the cloud, and accessed securely over the internet. Implemented appropriately, cloud computing can generate significant benefits in terms of cost-reduction, increased flexibility, and scalability of solutions, as well as improving organisational agility. By disaggregating our data, files, and applications in this way we provide a reduced vector for cyber-attack together with reducing single points of failure. Providing significantly better business continuity with fewer major incidents and outages having less impact on the organisation.

Currently, most of our connectivity, irrespective of whether destined for the internet or intranet is routed to our datacentre. This is to provide web filtering and a security layer to ensure devices connected to our network are unable to access inappropriate websites and be protected from threats such as malware and viruses. With a move to the cloud, the flow of traffic will be significantly straight out to the internet rather than into and out of the datacentre.

The Highland Council plans to remove security and web filtering for our end user devices from our datacentre in favour of a cloud-based threat protection solution and filtering service. This approach will reduce datacentre network usage, simplify the datacentre firewall configurations, and ensure access to the internet is always available for our users, even if the datacentre or Highland Council network is unavailable – significantly improving ICT resilience and improving business continuity in the event of a cyber-attack or other significant network outage.

The Highland Council will invest in new storage and back-up solution for the datacentre with a view to adding secure cloud storage to protect business-critical data. This technology replicates our critical data to secure cloud storage which cannot be modified or deleted for a specified interval – known as "immutable storage". Configuration of policies for this backup data provides protection from overwrites and deletions.

Immutable storage is intended to reduce the effect of recovering from a ransomware cyber-attack, which has a modus operandi of encrypting files. It also reduces the likelihood of backup data also being encrypted from this type of attack with the need to rely on offsite data backups which can be up to a month old. This approach would facilitate recovery of more recent data as the frequency of the data backup snapshot will be more up to date and would significantly reduce the time to restore ICT systems, thus reducing business impact.

Management of the datacentre infrastructure is the remaining outsourced function and any reduction in size and scope of datacentre services will lead to a reduced need for such a contract.

Security, Identity and Access Management

With easy access to cloud computing, cyber security becomes a much wider area of risk for the Council. Utilising cloud computing, corporate and citizen data is stored in disparate third-party commercial organisations infrastructure. Whilst this provides the potential for better value for money and resilient solutions, there are many standards around security and information management that need to be assured prior to the procurement of any new solution. The robust ICT procurement framework referred to in Section 8 of this Strategy will help to ensure vendors comply with security and information management standards prior to implementation.

The council will move to a single cloud authentication mechanism to authorise and grant access to Microsoft 365, cloud and on-premise resources, secured through conditional access policies managed centrally. This is the linchpin to safeguarding access to data, applications and other ICT resources and enables the wider relaxation of devices on the Highland Council network outlined in this strategy.

We plan to improve the user experience and reduce the need to login with usernames and passwords. A “single sign-on” approach will be deployed so end users will only have to sign-in once to gain access to ICT resources. No longer requiring users to remember multiple login details for applications will improve user experience and security as passwords are not forgotten, require reset, or stolen. Third-Party Access to Highland Council ICT resources will be provided using a similar mechanism to staff.

An improved self-service online password reset function will be deployed that works from anywhere, not just when connected to the council network, ensuring access is re-enabled efficiently.

Corporate & Business Applications

The Highland Council will adopt a cloud first approach for key applications aligned with core standards, principles, and codes of practice. This will reduce the reliance on the datacentre for hosting.

Access to all new business applications holding personal or sensitive data will be secured through conditional access policies to ensure users can be granted access and access can be revoked when users leave the organisation automatically.

A review of the existing application portfolio will be completed to identify opportunities to use the same conditional access approach.

Business applications will be sourced to be device independent where possible, ideally accessed natively from a web-browser. This approach simplifies deployment and allows a

choice of device based on the type of use and environment rather than being dictated by the choice of application.

Digital Transformation through automation of processes and integrations between business applications will bring significant benefits to the Highland Council. However, the cost of operational and technical change is also significant. As these supplier-hosted cloud applications are deeply embedded in the Highland Council service delivery model, long-term strategic partnerships with business application vendors will be established to ensure best value and greater influence of the vendor's software development roadmap.

Improved integration will be sought through standard data formats, such as XML and open standards Application Programming Interfaces (APIs) allowing real-time communication between applications and systems. Automations will be developed to limit manual interaction and maintenance.

The Highland Council will take a strategic application portfolio management approach to business applications to enable the exploitation of existing investments. This will identify areas where there may be opportunities to replace or refine existing applications to reduce costs and/or increase the value to the Council's operational activities, whilst at the same time driving down the cost-of-service and exploiting economies of scale.

Data / Files – Classification

There is a significant dependency on moving files out of the datacentre to achieve our goals. Doing so will ensure access is available out with the Council network enabling seamless sharing and collaboration with third-parties, suppliers, and partners; and providing more flexibility for remote and field working.

Information protection is at the core of the Zero-Trust ethos. ICT will work in collaboration with the Information Management Board (IMB) to agree ICT information protection policies and data retention policies. These will enhance conditional access policies to access Highland Council ICT resources and data including supporting external access to enable partnership working.

End User Devices

The Highland Council is moving to a modern workplace environment incorporating hybrid working to become more responsive, and less tied to physical locations. Staff are able to use modern collaborative software like Microsoft Teams and Google Workspace to communicate more effectively with their colleagues in real time. End user devices will no longer be "secured" to the network. Instead, the Highland Council plans to move to a *context aware* and *Zero-Trust* architecture. This allows users to access council applications, data and systems from any device connected to the internet based on individually defined polices for the resource they are accessing centred on the sensitivity of the data and risk. This approach negates the need for complex physical networks or infrastructure for device management by managing device configurations in the cloud.

This will enable any device and user to access the internet, with access to Highland Council sensitive information, documents, or data only when defined conditions are met. The principle being, the less sensitive the data needed accessed, the less restrictive the conditions are.

Cloud device management will significantly reduce provisioning times for new devices and give increased flexibility in device choice.

The Council's platform will facilitate mobile smart phones, tablets, laptops, and desktops ensuring access to Highland Council resources as appropriate. With key benefits for Highland Council including the ability to access the internet and cloud line-of-business applications from any location, enhancing business continuity.

End user software

Software causes ICT departments the greatest challenge in terms of cyber security. Viruses, worms, and malware can take control over computers through exploiting vulnerabilities in software code.

The investment in cloud-based threat protection will go some way to mitigating risk, however this is only effective if the operating system and software running on the device is kept up to date.

The Highland Council will provide and maintain a catalogue of software to ensure we keep as current as possible. A "Highland Council App Store" will be introduced to install software, with automatic updates where possible.

With the Highland Council's significant investment in Chromebooks for pupil education and learning, the Council will adopt a "Google first" approach for education application requirements. ICT investment will be delivered on the Google Workspace platform wherever possible, or directly over the web to ensure sustainability and digital inclusion for all, irrespective of the physical device being used.

Printing

The move towards a modern workplace through collaboration, co-authoring and digitisation of records is expected to see a reduction in printing, however not a complete elimination of printing as it is recognised that printed documents will always have a place in some form or other across the Council. A managed cloud print solution will be introduced to allow users to print to Highland Council printers, securely from anywhere without traversing our datacentre network – treating a Highland Council printer as an ICT resource, access will be granted based on conditional access policies as described previously in this strategy.

Network / Internet Connectivity

The new architecture described in this strategy provides opportunities to reconfigure and disaggregate the existing network. Each site will be independent of the others to increase resilience. With security of data being provided through conditional access down to the file

level, the network architecture and design can be significantly simplified, allowing quicker deployments for network changes within buildings. The changes will allow access for any device to connect to the internet from any Highland Council building without risk to the Council's data or security posture.

Additionally, with this new architecture, the Highland Council will be able to take advantage of cheaper and more commercially available broadband technology to improve internet access and performance. With the help of the Council's "Local Full Fibre Network" (LFFN) project adding CityFibre connectivity to many of our sites, the internet marketplace has never been more competitive in the Highlands.

Access to the Public Services Network (PSN) and Scottish Wide Area Network (SWAN) will be provided on a needs-only basis, further strengthening the security of services accessed over these networks.

A plan will be put in place in conjunction with Property & Housing and Infrastructure & Environment Services to look at remote management, control, and monitoring of Building Management Systems such as Heating, Ventilation and Air Conditioning, door entry systems and sensors – what is known as the Internet of Things (IoT).

Telephony

The telephony systems in the majority of Council buildings have already been upgraded to a modern VOIP telephony solution which reduced the need for costly traditional telephone lines. A "soft phone" has also been deployed to allow access to telephony remotely from computer desktops. This is aligned to the wider council programme to increase efficiency, reduce the Councils travel costs and associated carbon footprint.

The introduction of Microsoft Teams and Google Workspace has provided enhanced capability to collaborate online and via video conference. Since the advent of Covid-19 this has been the primary method of communication within the Highland Council.

With this latest change in working practices and communication channels now available to council staff, a full review will be undertaken to re-evaluate the communication requirements for our staff and services. With the change in technology and architecture enabling more mobile working capability, it is envisaged that the use of devices in the field will significantly increase the need for mobile 3G/4G/[5G] connectivity. An assessment of this together with "traditional" desk based and mobile telephony will be completed with the aim of introducing a unified communications system.

Reporting

The use of data and our data strategy will be outlined within the *Business Intelligence Vision* and the *Digital Strategy.* The ICT Strategy will look to provide the technology and business intelligence tools to enable self-service and flexible reporting that supports the BI Strategy, providing a single ICT platform to collate, analyse and present data and information. This information underpins public services and is an essential asset in the continuous drive for

increased efficiency, enabling better insight and business decision-making through more accurate up-to-date data.

The Highland Council will work with software suppliers to ensure that business intelligence capability is included as standard for new procurements to provide on-demand, real business intelligence, and that data is made available in open APIs and file formats to allow ease of data extraction, exchange and integration with other software and reporting tools, as well as ease of publication for (re)use by third parties.

Appendix 3 – Legislation, Industry Practice & Codes of Practice

The Highland Council will monitor and consider new or emerging standards and legislation which could affect the provision of the ICT service. On occasions, there may be conflict between standards and/or good industry practice. The general principle will be to use the later standard or best practice. Any deviation will go through the appropriate authorisation and ICT governance. At the time of writing, the following table outlines the legislation, Industry Practice and Codes of Practice the Highland Council will follow:

Title	Description	Type	Link
Payment Card Industry Data Security Standard (PCI –DSS)	Information security standard for organizations that handle branded credit cards from the major card schemes. The PCI Standard is mandated by the card brands but administered by the Payment Card Industry Security Standards Council. The standard was created to increase controls around cardholder data to reduce credit card fraud.	Code of Practice	https://www.pcisecuritystandards.org/
Department for Work and Pensions (DWP) code of connection	Security requirements to be met to connect to DWP systems	Code of Practice	
PSN Code of Connection	Security requirements to be met to connect to the Public Secure Network	Code of Practice	https://www.gov.uk/government/publications/psn-code-of-connection-coco
National Cyber Security Centre	Device security configuration and best practice guidance	Industry Practice	https://www.ncsc.gov.uk/collection/device-security-guidance

(NCSC) Device Security Guidance			
National Cyber Security Centre (NCSC) Cloud Security Principles	Security principles to assess suitability of a cloud provider/supplier/Vendor	Industry Practice	https://www.ncsc.gov.uk/collection/cloud/the-cloud-security-principles
National Cyber Security Centre (NCSC) Cyber Essentials / Cyber Essentials Plus	Government-backed, industry-supported scheme to help organisations protect themselves against common online threats. All suppliers/vendors managing our ICT environment should conform to this standard	Industry Practice	https://www.gov.uk/government/publications/cyber-essentials-scheme-overview
Public Sector Bodies (Websites and Mobile Applications) (No. 2) Accessibility Regulations 2018.	Accessibility regulations that apply to public sector websites and mobile applications. If the service meets the government accessibility requirements, it will comply with this regulation. Comply with the World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) Web Content Accessibility Guidelines (WCAG) 2.1 Conformance Level AA	Legislation	https://www.gov.uk/service-manual/helping-people-to-use-your-service/understanding-wcag https://www.w3.org/TR/WCAG21/

Data Protection Act (DPA) 2018 and UK General Protection Regulation (GDPR)	Key principles, rights, and obligations for most processing of personal data in the UK, except for law enforcement and intelligence agencies. Controlling and processing of individual/personal Data – conditions for processing and exemptions.	Legislation	https://ico.org.uk/for-organisations/dp-at-the-end-of-the-transition-period/data-protection-and-the-eu-in-detail/the-uk-gdpr/

Appendix 4 – Glossary of terms

Business Intelligence (BI)	The technology and processes used to analyse and report on data from the Council's software systems. The focus of BI is to gain insights into service performance and to provide input to the decision-making process. BI can become highly complex and powerful by brining together multiple data sources.
BYOD	Bring Your Own Device - employees bringing personally-owned mobile or tablet devices to their place of work
CCT and CCNA	Cisco Certified Technician/Cisco Certified Network Associate – industry recognised qualifications relating to IT network management.
CISM and CISMP	Certified Information Security Manager/Certificate in Information Security Management Principles – industry recognised qualifications relating to information security management.
Cloud Computing	There are many types of Cloud services: Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS); Unified Communications as a Service (UCaaS)… Essentially any application, technology or system that can be provided by a supplier over the internet without the purchaser having any ownership. Usually, the service is provided on a fixed cost basis or more commonly a per unit/commodity or user-based pricing structure. Essentially renting the use of the services for the agreed period and paying per usage. Using *Infrastructure as a Service*, organisations rent the use of servers (as many as needed during the rental period) provided by one or more cloud providers. Using *Platform as a Service*, organisations rent the use of servers and the required system software, effectively renting a computing platform, Using *Software as a Service*, organisations also rent the application software and databases, such as Oracle Cloud. The cloud providers also manage the infrastructure and platforms on which the applications run.
CRM	Customer Relationship Management System
Data Sets	Collections of data usually in tabular form. Publishing of public data sets is part of the UK Government's Transparency agenda.

Extranet	The Extranet a subset of information accessible from the Highland Council's Intranet for a group of authorised partners, vendors, or suppliers without granting access to the entire Highland Council network.
GIS	Geographical Information Systems – digital maps and location-based data.
ICT	Information and Communications Technology is often used as an extended synonym for information technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information.
Immutable Storage	Overview of immutability storage for Blob Storage - Azure Storage | Microsoft Docs
Internet	The internet is a series of networked devices – routers, switches, computers able to communicate with each other - to provide access to information and data available publicly via your Internet Service Provider (ISP). The ISP provides the conduit to transmit and receive data outside of the Highland Councils own network.
Internet Service Provider (ISP)	An ISP provides the access point (or gateway) that provides a user access to the Internet.
Intranet	The intranet is a series of networked devices – routers, switches, computers able to communicate with each other - to provide access to information and data available privately, only via the Highland Council's network.
ISO/IEC 27001	International standard on how to manage information security. Designed to cover much more than just IT, and covers information security risks, based on assessing threats, vulnerabilities, and impacts. Requires the designing and implementation of controls, including risk avoidance or risk transfer to address information security risks that are deemed unacceptable. Enforces an overarching management process to ensure that the information security controls continue to meet the organization's information security needs on an ongoing basis.
ITIL	Information Technology Infrastructure Library - a set of practices for IT service management

LoB Application	A critical computer application that is vital to running a service within the council. Generally large programs that contain integrations with other LoB Applications (be that automated or manual processing) and tie into databases and database management systems, either in the cloud or on-premise.
Microsoft 365	As subscription service from Microsoft providing access to a broad range of "office" software, including Outlook, Word, Excel, PowerPoint, SharePoint and Teams. The product suite is a core element of the ICT service provided to all Council users. Formerly known as Office 365.
Mobile Apps	Small computer applications that can be downloaded from an "App Store" for handheld devices like smartphones and tablets.
Network Or Local Area Network (LAN)	A network consists of two or more computers that are linked in order to share resources (such as printers and applications), exchange files, or allow electronic communications and transfer of data. Highland Council networks generally consist of a series of switches and Wi-Fi access points connected to a router to access the Wide Area Network (WAN). The computers on a network may be linked through cables, telephone lines, radio waves, satellites, or infrared light beams
PRINCE2	Projects IN Controlled Environments 2 - a structured project management method
PSN	Public Services Network – a replacement for Government Secure Intranet (GSi) and Managed Telecommunications Service (MtS)
Softphone	A software application installed on a user's computer that gives access to the same, or enhanced, functionality as a traditional desk phone, usually used with a headset.
SWAN	Scottish Wide Area Network – the SWAN programme will deliver a single public services network available for the use of any, and potentially all, public service organisations within Scotland; with aggregated demand delivering both cost and performance advantages.
TOGAF	The Open Group Architecture Framework – a standard for ICT enterprise architecture that provides an approach for designing, planning, implementing and governing enterprise ICT.

Unified communications	The integration of real-time communication services such as instant messaging (chat), presence information, telephony (including IP telephony), video conferencing, data sharing (including web connected electronic whiteboards aka IWB's or Interactive White Boards), call control and speech recognition with non-real-time communication services such as unified messaging (integrated voicemail, e-mail, SMS and fax).
VDI	Virtual Desktop Infrastructure – an example of virtualisation used to provide a virtual computer, similar to a standard desktop or laptop, for end users.
Virtualisation	The creation of a virtual machine, either a server of end user device, that acts like a real computer with an operating system. Software executed on these virtual machines is separated from the underlying hardware resources.
VPN	Virtual Private Network – software that provides a secure, encrypted connection between a computer and the systems/resources being accessed over the Internet. This enables users to operate and access Council systems in a secure manner when not physically connected to the Council network.
Wide Area Network (WAN)	The connection of two or more Local Area Networks (LAN)s so that users and computers in one location can communicate with users and computers in other locations. An ISP providing connections from an organisations LAN to the internet can also be considered a WAN.
Zero Trust	A modern approach to protecting the security of an organisation's ICT based on explicitly checking and confirming the identity and credentials of a user or device rather than trusting them just because thewy are physically connected to the network.