# Gloucestershire County Council
# Information and Communications Technology Strategy
## 2019-2024

**Work Smarter**

Working more effectively

Gloucestershire
COUNTY COUNCIL

# Introduction

The ICT Strategy seeks to underpin the Council's Strategy: Looking To The Future and it's priorities which support the Council's strategic vision "to make the most of all that Gloucestershire has to offer, help improve the quality of life for every community, support businesses to be successful and make sure the county is a place where people want to live, work and visit".

Aligned to this is the Council's Digital Strategy, which seeks to make Gloucestershire 'a smart place. Digitally connecting community, County and Council; putting power in people's hands.' Like many other local authorities, the Council is on a journey to fully understand and exploit the benefits of implementing digital technologies. The maximum benefits can only be realised by addressing all aspects of the digital working model and a business enterprise architecture approach to organisational change – to focus on the technology alone in any Digital Strategy is to fail.

The ICT Service will ensure we are influencing strategic and digital thinking in order to drive the right decision-making and the investment planning necessary to deliver defined business outcomes. This will require organisational changes and longer-term redesign of the ICT function and its roles & responsibilities to meet the changed and constantly evolving levels of demand from the business.

In the first instance we will introduce a new ICT Business Relationship team which will be the first port of call for business leaders supported by a re-designed service team focused on driving business changes through to completion.

In conjunction with this document we will also publicise the ICT Strategic Roadmap for the Council which will map out a five-year change programme designed to meet identified business outcomes.

Our seven year primary outsourced ICT managed service provider contract will come to an end during the life of this Strategy document. We will seek to explore opportunities to strengthen our capabilities and along with other Council support services align with service providers who will work to maximise our investments in technology and support the council on its 'digital journey'.

Delivering this ICT Strategy through a dedicated programme of change will require significant expenditure. This investment will need to address both an ongoing maintenance programme to provide the business with effective service continuity, as well as enable the delivery of new technologies and services. We are confident that this investment will generate efficiencies through business process improvements and the delivery of new digital ways of working enabled by technology.

This document has been developed in conjunction with Directors, Heads of Service, strategic partners and has incorporated staff feedback to provide the Council with a clear and concise vision for the future state of technology via the identified ICT Priority Outcomes. Along with the ICT Strategic Roadmap this document will outline details of the five year change programme and the projected investment profile necessary to deliver the Councils' intended outcomes.

Finally, this ICT Strategy document and the associated ICT Strategic Roadmap should be considered living documents. As such they will be reviewed on a regular basis and reissued as required.

*Andy Gilbert*
*Head of ICT*

# ICT Vision

Harnessing the value of technology to drive change and innovation, building infrastructure which is flexible and secure to provide confidence and help the Council, its partners and communities to deliver a sustainable digital future.

# ICT Mission

The ICT Service will deliver the ICT Vision by providing cost-effective and reliable technologies to support front line service delivery via continual service improvements, enabling and supporting business change activities, training and development and targeted investment in new technologies. We will continue to adopt best practice processes across all ICT support functions such as the helpdesk, request fulfilment, desktop & network support, change and project management, application support and training.

ICT staff will have the appropriate skills and knowledge to make best use of all ICT facilities and systems available to them and support the embedding of Digital principles across the Council and beyond.

# ICT Priority Outcomes



## Shared and Partnership Working

- Establish a business enterprise architecture that enables staff, partners & other agencies to appropriately, securely & collaboratively access the types of data & services they need, where and when they need it.
- To be the hub of technical expertise to support the Gloucestershire County Council Digital Strategy.

## Flexible, Mobile and Efficient Access for All

- To support plans to provide the public and communities with access to services, where and when they need them.
- To provide staff with the tools they need to make it easier to do their jobs and be able to work anywhere they need to.

## Strong Infrastructure, security & compliance

- To deliver a reliable & resilient voice, wi-fi and data network and develop a robust service continuity solution.
- To ensure compliance for the council & support the provision of appropriate tools & information to enable staff to protect themselves & council data against the threat of cyber-based crime.

# Priority outcomes – how we'll deliver

The following pages illustrate how our Priority Outcomes break down into specific objectives and actions we will deliver and provides examples of some of the resulting outcomes and improvements to users. Further details will be provided in the separate ICT Roadmap document which also describes in more detail how this strategy aligns with and impacts the work of the Council Strategy.

# 1. Shared and Partnership Working

- Establish a business enterprise architecture that enables staff, partners & other agencies to appropriately, securely & collaboratively access the types of data they need when they need it.
- To be the hub of technical expertise to support the county's Digital Strategy.

## Key Objectives:

- Work collaboratively with other public sector bodies and strategic partners to optimise the use of technology
- Rollout collaboration tools such as audio & video conferencing to promote and encourage greater partnership working and exploit the features and functionalities of new technologies such as Office 365
- Provide a pragmatic balance between security and usability to encourage and enable active collaboration and data sharing with strategic partners and communities
- Develop a hub of expertise and guidance as digital technology specialists through the development and use of an Innovations Lab
- Encourage business development opportunities in conjunction with other Council support services applying defined digital and ICT principles.

## Outcomes & Improvements

Ability for Council staff to exchange short messages, & hold audio & video conferences with partners and 3rd parties from their desktop or mobile device

Availability of shared working areas for Council staff to collaborate and share with the private and voluntary sector, with NHS partners, other Gloucestershire authorities, education and central government agencies

Ability for staff to share calendars between organisations (where applicable) to facilitate closer working and better business co-ordination

Ability for staff to see who has access to their data and to limit that to just those intended and for a limited time. The assurance that increased sharing is not putting corporate data at risk

Ability for business users to explore the wider digital opportunities of their business applications e.g. development of customer portals, sharing of information under 'Big Data' initiatives, etc.

An environment where users can explore and trial emerging technologies to support new digital ways of working

Greater visibility of all existing technology solutions, their capabilities and functionalities to allow business leaders to provide their staff with the right solution to meet their needs.

Feature new innovative solutions ('disruptive technologies') in a test lab environment that provide Council staff with opportunities to explore possibilities and determine the impact it will have upon their existing service provision.

Availability of new social media communication methods for frontline staff to engage with citizens based on their preferences

# 2. Flexible, Mobile and Efficient access for All

- To support plans to provide the public and communities with access to services, where and when they need to.
- To provide staff with the tools they need to make it easier to do their jobs and be able to work anywhere they need to.

## Key Objectives:

- Develop a forward-looking ICT Service with a major focus on developing a business-driven architecture which includes significant involvement and joint working with all other business support functions.
- Work collaboratively with all Council customer-facing business areas to help them develop their technology-related business plans, specifically for frontline services.
- Work with business information asset owners to develop new customer services (e.g. portals, chat-bots, Apps, etc.) from their existing or new business systems.
- Support the Councils' business intelligence initiatives designed to tailor more effective service provision through the use and application of predictive analytics.
- Support business plans to develop greater use of social media platforms and modern digital tools to encourage engagement from a wider demographic.
- Expand and update the range and scope of end-user devices to provide staff with the right tools they need to carry out their roles
- Exploit new digital ways of working, e.g. greater use of telephone mobility solutions to support wider hot-desking and flexible working across the county.
- Promote greater use of remote access solutions to staff to carry out their business activities from any location using any approved device
- Develop a 24/7 service desk through the introduction of a range of self-help capabilities and greater automation of routine tasks.

## Outcomes & Improvements

Ability for business areas to liaise with the ICT Business Relationship Team to develop greater use of technology when working with citizens and communities

Ability for business areas to optimise use of Council business systems through the development of portals for citizens and communities to gain access to their data.

Provision of safe and secure online portal capabilities for vulnerable adults and children, their families and professionals to optimise modern social media and online collaboration opportunities

Proactively support the 'voice of the child' though to adulthood through improved multiagency interoperability to aid decision making.

Ability to support independent living initiatives through the exploration and evaluation of modern digital adaptive (or assistive) technologies e.g. the Internet of Things (IoT), remote sensors & monitoring tools, wearables, etc.

Ability for Council staff to access their data and information using the right technological tools aligned to their working patterns

Ability for staff to work from any available Council office and utilise a standard desktop workstation and a range of telephony solutions

Ability for GCC sites with their own ageing standalone telephony units to be integrated into the GCC managed solution on demand.

Updated and broader range of productivity tools available to users on a variety of corporate supported devices to enable flexible and mobile working opportunities

Ability for staff to resolve issues themselves or log incidents at a time that suits them.

# 3. Strong Infrastructure, Compliance & Security

- To deliver a reliable & resilient voice, Wi-fi and data network and develop a robust service continuity solution.
- To ensure compliance for the council & support the provision of appropriate tools & information to enable staff to protect themselves & council data against the threat of cyber-based crime.

## Key Objectives:

- Modernise the network – remove and replace legacy software, systems and infrastructure with expandable, reliable, secure and supported technologies.
- Update the Councils' ageing connectivity network infrastructure, exploiting modern service offerings to address legacy solutions and align with the Glos 2050 countywide ambitions
- Exploit the benefits of new digital technologies to develop a robust and reliable technological platform at the Council to better support the community and the county.
- Support and enhance business continuity arrangements via improved ICT service continuity and disaster recovery capabilities
- Continually improve our cyber security defences in line with constantly evolving cyber-based threats at all levels aligned with essential end user awareness programme.
- Provision of modern electronic storage technologies to support the eStorage information lifecycle project aiming to address the uncontrolled growth of data
- Stabilise and consolidate the datacentre and explore opportunities to move to cloud-based computing (e.g. backup & restore) where feasible.
- Ensure the Council remains compliant with all UK government statutory regulations and secure in line with good practice guidelines.

## Outcomes & Improvements

Ability for Council staff to retain important emails without worrying about their inbox filling up and to be able to search and recover those emails in an efficient and timely manner

Ability to provide Council staff with access to essential services via a faster and more reliable data and voice network and minimise impact upon business productivity.

Ability to support customer access to Council systems and information via Gloucestershire Libraries through the provision of an improved and reliable network connectivity platform.

Ability to work in compliance with other public sector bodies to provide opportunities for greater joined up working through shared connectivity initiatives.

Ability for users to maintain their business continuity during system outages or downtime using cloud-based service offerings, e.g. Gov.uk Notify

Ability for staff to safely conduct Council business via the internet protected and supported by a range of cyber defences at all levels and at all times

Ability for staff to continue accessing their systems and data via cloud-based solutions in the event of a loss of local connectivity.

Ability for staff to continue working safely and securely with other public sector bodies supported by a robust regime of compliance with good practice.

# Challenges & Opportunities for Gloucestershire's ICT

The technological priorities for the Council are driven by a range of factors at both the organisational level and for the ICT Service itself:

## Organisational Challenges:

- **Major Transformation Programmes**: all support services must acknowledge the changing shape of Council services, the way they are delivered and the resources required to do this which will drive different technological needs in the future (e.g. the Digital Programme, One Public Estate, Glos 2050, NHS Integrated Care System, Adults Single Programme, Workforce development etc.).

- **Financial pressures**: reduced core funding means optimising expenditure via the efficient provision and utilisation of technology and where possible generating income whilst continuing to invest in new digital ways of working.

- **Sustainability**: we increasingly need to align all that we do to reduce the Council's running costs, obtain best value from our assets and help communities do more themselves whilst continuing in our efforts to reduce the Council's carbon emissions.

- **Digital Maturity**: the Council is on a journey to fully understand the benefits of digital technologies. Sharing data and collaborating innovatively with partners and communities whilst maintaining appropriate levels of security is a complex task. The maximum benefits of digital can only be realised by addressing all aspects of the business model and not just the technology we use.

- **Shadow ICT**: approximately 30% of Council spend on technology is not directly managed by the corporate ICT Service. This has been driven by a desire by business leaders to do 'the right thing', 'do agile', or simply to take advantage of new cutting edge solutions. Greater control of shadow ICT is required to strengthen contracts, optimise support functions and obtain holistic benefits from joining up all the information held in all Council business systems.

## ICT Service Challenges:

- **Service Definition**: the catalogue of services and products developed at the start of the current outsourced ICT contract will be reviewed and updated to reflect changed business needs and constantly evolving demands and requirements. The life of this Strategy includes the end date of the current ICT provider contract in March 2021.

- **Financial**: in conjunction with Strategic Finance, the ICT Service will continually explore new ways of financing technology in line with industry models that provide everything 'as a service' e.g. Software as a Service (SaaS), Infrastructure as a Service (IaaS), etc.

- **Staffing & skills**: we will strengthen roles & responsibilities within the ICT Service to adopt technology industry best-practice frameworks such as ITIL & COBIT – this will reflect the changing needs and evolving demands of the business to include contract management, security management, vendor management and project management. These roles are currently being addressed along with training & development needs and will be reviewed throughout the life of this Strategy.

- **Technology gap assessments**: the ongoing assessment and evaluation of new and emerging technologies will continue to work towards investing in the right technologies, proportional to the needs of the Council and plugging the capability gap between the as-is and the to-be.

- **Road-mapping**: the development of individual technology roadmaps to co-ordinate the overall delivery of the ICT Roadmap e.g. the identification of the right business enterprise architecture components required to deliver the ICT Strategy.

# ICT Principles

These guiding principles represent a service-focussed approach for the ICT Service designed to provide clear direction for service users and directly connect what we do to help achieve business success. These ICT principles will be used to inform detailed technical strategies for:

- business applications;
- identity, access and security;
- end user devices;
- network infrastructure and connectivity;
- business enterprise architecture management (ensuring our complex computing assets align with all other corporate, governance and business design principles).

| | |
|---|---|
| **Principle #1** (GOVERNANCE) | When introducing new technologies and services, we will balance business requirements as defined by the customer with the total cost of ownership and the impact upon existing technologies. |
| **Principle #2** (BUSINESS ENTERPRISE ARCHITECTURE) | Commercial-off-the-shelf (COTS), cloud-based and/or externally hosted, secure and compliant business applications and systems will always be preferred to in-house developed and internally-hosted solutions. |
| **Principle #3** (INVESTMENT PRIORITISATION) | We will prioritise investments in technologies and services in order to provide the maximum return for business users in alignment with the council's aims and objectives and business strategies whilst operating within existing financial accounting constraints. |
| **Principle #4** (INNOVATION) | The ICT Service will work with business leaders to embed innovation at the council and to improve our ability to deliver better business outcomes using technology. |
| **Principle #5** (STANDARDISATION & INTEGRATION) | The council will seek to minimise and standardise the portfolio of technologies in use across the business to control the costs of technical diversity. Applications and services will be used as designed by vendors - customisation will be discouraged wherever possible subject to a valid, fully funded and justifiable business case. |
| **Principle #6** (RISK) | We will make decisions on how to provide technologies or services based on a balanced understanding of risk and reward. We will ensure appropriate and cost effective contingencies are in place and will aim to reduce the impact on the business whenever serious failures occur. |
| **Principle #7** (STAFFING) | We will invest in and develop the right personnel required to deliver an efficient and effective ICT Service that will continue to meet the defined business needs of the council. This includes council staff, outsourced service providers and third party consultants. |
| **Principle #8** (SECURITY & COMPLIANCE) | We will help maintain security and compliance standards for the council whilst striking a pragmatic balance between usability & security. ICT systems, services and processes will seek to comply with national and corporate policies and standards in order to help protect our information from unauthorised use and disclosure. |
| **Principle #9** (BENEFITS REALISATION) | Technological solutions will be designed and implemented with the business needs of the customer, strategic partners and Gloucestershire citizens in mind so that services are intuitive, usable, interoperable and accessible. We will leverage all available benefits from suppliers whilst ensuring quality of service and value for money. |
| **Principle #10** (SOURCING) | Insourcing or outsourcing decisions will be based on a defined set of criteria informed by ICT, digital and corporate business principles. Systems will have minimal environmental impact & low energy demands in line with the council's sustainability targets. |

For more information about these principles and the likely impact upon your service area please visit the **ICT pages on Staffnet** at: **https://staffnet.gloucestershire.gov.uk/internal-services/the-ict-service/**

# High level roadmap by ICT Priority Outcome

| Short term - 2019 to 2020 | Mid term - 2021 to 2022 | Long term - 2023 to 2025 |
|---|---|---|

## 1: Shared and Partnership Working

| Short term - 2019 to 2020 | Mid term - 2021 to 2022 | Long term - 2023 to 2025 |
|---|---|---|
| Establish Countywide Technology Forum to support One Public Estate/ICS/Glos 2050, etc | Identify wider Gloucestershire Public Sector sharing opportunities | Implement and support Gloucestershire Public Sector sharing opportunities |
| | Identify opportunities to improve collaboration with strategic partners by aligning technologies and support methodologies where appropriate | |
| Equip all council meeting rooms with appropriate collaboration tools, e.g. mobility phone, video-conferencing, projectors, etc | Ensure staff are supported through an adoption and change programme to optimise their use of all available collaboration tools | Monitor and evaluate new and emerging technologies in line with business demands |
| Maintain and develop stable technology platforms whilst managing our move to more cloud-based solutions | Enhance technology platforms to provide greater use of cloud-based digital tools e.g. presence, instant messaging, calendar sharing, social media tools, etc | |
| Review existing identity and access management solutions | Explore opportunities to support wider data access initiatives whilst maintaining security levels | Support 'Big Data' initiatives in alignment with the Information Strategy |
| Review of all council business applications in line with ICT & digital business principles | Support asset owners in developing their business applications to enable greater access to data from 3rd parties and citizens (where applicable) | Continual review of all council business applications |
| The ICT 'Innovations Lab' will showcase all existing and emerging technology capabilities | Support business leaders in order to focus on aligning 'disruptive' technologies to build viable business solutions | Promote and support an 'innovation culture' for business leaders to optimise digital technologies in their service areas |
| Support the Digital Transformation programme: identify technological deliverables | Support the Digital Transformation programme: secure the appropriate funding/resources to deliver agreed outcomes | Support the Digital Transformation programme: deliver agreed outcomes |

# High level roadmap by ICT Priority Outcome *cont*

| Short term - 2019 to 2020 | Mid term - 2021 to 2022 | Long term - 2023 to 2025 |
|---|---|---|

## 2: Flexible, Mobile and Efficient access for all

| Short term - 2019 to 2020 | Mid term - 2021 to 2022 | Long term - 2023 to 2025 |
|---|---|---|
| Develop a business architecture ethos at the council via the ICT Business Relationship Team | Work with Heads of Service and their teams to develop their business-driven technology roadmaps | |
| Support asset owners in exploring customer-centric services and enhancing already available solutions | Assist in the development of 'portals' for partners and customers alike | |
| Support independent living initiatives via digital adaptive technologies | | |
| Support business intelligence initiatives | | |
| Standardise devices on a secure, supported and managed platform, upgrade all endpoint devices to Windows 10 | | |
| Upgrade the Office Productivity Suite to the latest on-premise version | Migrate users to cloud-based technologies to facilitate better collaborative working | Implement full Office collaboration suite aligned to business demands |
| Stabilise and expand use of the corporate telephony solution | Support the council's aspirations to develop wider hot-desking and flexible working capabilities | |
| Promote, enhance & develop mobile telephony service offerings | Combine together mobile and fixed line telephony solutions | |
| Upgrade the remote access platform | Investigate opportunities to exploit cloud-based identity management solutions to ensure devices can securely access data as appropriate | |
| Consolidate use of self-help capabilities | Explore and expand use of additional self-help capabilities | |
| Identify opportunities to automate routine tasks/manual forms to improve the customer experience | Embed processes for the automation of routine tasks to aid workflow | |

# High level roadmap by ICT Priority Outcome *cont*

| Short term - 2019 to 2020 | Mid term - 2021 to 2022 | Long term - 2023 to 2025 |
|---|---|---|

## 3: Strong Infrastructure, Compliance & Security

| Short term - 2019 to 2020 | Mid term - 2021 to 2022 | Long term - 2023 to 2025 |
|---|---|---|
| Ensure all servers are running on a minimum of Windows Server 2016, all SQL databases on a minimum of SQL 2016 | Review Active Directory Schema in line with Azure environment | Deploy the latest hardware and software versions |
| Stabilise the existing virtual server environment | Investigate opportunities to exploit hybrid virtualisation solutions with both on-premise and cloud-based environments | Investigate the benefits of cloud integration solutions and methodologies |
| Cyclical replacement of all end of life/ support components | Cyclical replacement of all end of life/ support components | Cyclical replacement of all end of life/ support components |
| Configure the Microsoft Azure solution to provide a secure, stable corporate cloud platform | Review Active Directory Scheme in line with Azure environment | Deploy the latest hardware and software versions |
| Upgrade the Exchange email environment to the latest on-premise version and review existing email mobility solutions | Migrate users to cloud-based technologies to facilitate better collaborative working | Implement full Office collaboration suite aligned to business demands |
| Update the ageing connectivity network infrastructure (data and voice circuits) | Ensure all council-connected buildings are equipped with modern service offerings e.g. secure wi-fi, hot desking, appropriate equipment in meeting rooms, etc | |
| Review/evaluate all departmental Business Continuity plans | Develop impact analysis/propose technological solutions (where applicable) to meet defined needs | Strengthen ICT Service Continuity arrangements accordingly |
| Upgrade the centralised cyber security monitoring solution | Monitor and evaluate new and emerging technologies in line with business demands | |
| Upgrade the endpoint device cyber defence solution | Monitor and evaluate new and emerging technologies in line with business demands | |
| Enhance and promote all desktop security and data protection solutions available to council staff | Ensure staff are supported through an adoption and change programme to optimise their use of all available collaboration tools | |
| Upgrade the corporate data storage environment to the latest on-premise version | Migrate users to cloud-based technologies to facilitate better collaborative working | |
| Review/assess and enhance backup & restore arrangements | Explore and implement alternative backup & restore solutions using cloud-based technologies | Monitor and evaluate new and emerging technologies in line with business demands |
| Maintain annual PSN Code of Connection compliance | Maintain annual PSN Code of Connection compliance | Maintain annual PSN Code of Connection compliance |
| Maintain annual Cyber Essentials compliance | Maintain annual Cyber Essentials compliance | Maintain annual Cyber Essentials compliance |
| Explore ISO27000 accreditation, conduct a audit of all controls and develop an action plan | Support the implementation of approved corporate action plan | |

# Refreshing the ICT Strategy

The Council is not standing still and must constantly review its position as a business, reassessing its local and national drivers, goals and priorities and update its strategies accordingly. As such, the ICT Strategy must also track these changes and update and re-align accordingly. It is difficult to say how often this strategy should be reviewed and updated as it depends on many factors. However, the ICT Service will aim to review, amend and reissue the ICT Strategy every six months in consultation with Directors given the pace of change with technology.