

ICT strategy



2020 - 2024

contents

Introduction	1
Connected plans and strategies	1
Current state of ICT at Tewkesbury Borough Council	2
Data centre	2
Core technology	2
Virtualisation	2
Connectivity and telephony	2
Endpoint devices and flexible/remote working	3
Software and licenses	3
Security and maintenance	3
Staffing	4
Strategic themes	4
Security	4
Sustainability	5
Stability	5
Simplicity	6
Key actions for 2020 - 2021	6
Governance	6



Introduction

The vision of Tewkesbury Borough Council is "Tewkesbury Borough, a place where a good quality of life is open to all". To deliver this vision, the Council has six key priorities, as detailed in the Council Plan (2020-2024):

- Finance and resources
- Economic growth
- Housing and communities
- Customer first
- Garden communities
- Sustainable environment

The most efficient and effective Information and Communication Technology (ICT) is an essential component to support the delivery of these council priorities. This strategy sets out four key themes that explains in layman's terms what is required to maximise the council's ICT resource. It outlines a snapshot of the current position of the ICT within the council and sets out a clear vision of the approach that will be taken over the medium term to deliver a secure, sustainable, stable and simpler delivery of ICT service. The end goal of the strategy is to deliver an ICT platform to support the corporate aims and objectives rather than simply to improve technology for the sake of it.

Connected plans and strategies

The ICT Strategy does not stand in isolation and supports other key strategies. The deployment of technology is fundamental to support the ambitions laid down within the recently approved Digital Strategy. Digital is not just about offering an online option for something; its much wider

than that. It is about shaping our services to meet the needs of our customers. The speed at which technology is changing remains fast and if we want our customers to continue to engage with us, we need to ensure we are providing them with what they want. Our digital approach is centred around 'people, process, technology' i.e who we are providing the service to, what is the most effective way to provide that service and then what technology is required to effect the change. Any technology deployed must also be done in a way that it does not compromise the security of the council's network.

Using digital and technology to drive improvements and efficiencies by default supports the council's approach to delivering the Commercial Strategy and our business transformation journey. One of the two main themes of the commercial strategy is maximising cost saving/efficiency. The use of technology is a key tool to driving out these efficiencies. This provides the potential to free up resources across the council to look at the feasibility of new income generation opportunities, this being the second main theme. The ICT team itself also needs to operate with a commercial mindset to ensure it maximises all of the ICT resource at its disposal, for example through procurement and tight budgetary control.

All of the above is woven into the council's Workforce Development Strategy. This strategy has a number of key themes including releasing productivity, digital transformation and commercialisation. Stated in the strategy is a commitment that 'we will support, praise and invest in our workforce to develop our organisation' ICT is the one service that touches every part of the council and in particular is the

one activity which is highly recognisable when it does not function as it should, albeit these occasions are few and far between. Overall, ICT is an enabler of workforce development both technically and culturally.

Current position of ICT at Tewkesbury Borough Council

The world of ICT is evolving considerably. In the past few years, technologies that were emerging have become standard ways of working. How the council wants to work has changed as well with a more significant uptake now for flexible working but also remote working. 'Being a great place to work' is another key theme of the Workforce Development Strategy and current trends suggest that employees will be asking of employers the ability to work even more flexibly and agile. A significant challenge facing all councils is the threat of cyber threats gaining in sophistication and regularity but also how to ensure data is well secured in a digital and flexible world not only for those working for the council but also for those whom it serves.

Data centre

The council benefits from a secured data centre on site. This hosts all the council's onsite infrastructure including switches, servers, storage, firewall and connectivity. This data centre also offers a co-location site for elements of our partners and tenants network infrastructure.

Core technology

The majority of the council's core technology infrastructure are now beginning to show their age. Whilst the server component that provides the compute function of our virtual environment is still current, the switches, firewall and storage

systems are all in need of being upgraded.

Virtualisation

The council utilises virtualisation technology to simplify and streamline how it manages its IT estate. This technology works by using a large high specification host server to create smaller specialist virtual guest servers that all share the host's resources. These virtual servers are then used to run applications to deliver services for the council. It is an extremely effective way of working as it allows for very rapid deployment and management of servers while reducing the number of physical servers held in the data centre. The council currently uses VMware systems to create and manage its virtual environment. Over the last five years, all physical servers have been migrated into the virtual environment. The virtual environment is also used to provide virtual desktops for the thin clients.

Connectivity and telephony

Currently the council's connection to the internet is over a 100mb fibre connection. In recent years this has begun to show its limitations as more and more internet provided services are used within the council. More services rely on fast internet connections to exchange data, this includes Office 365, the council's digital platform and remote working solutions. When all the 100mb connection bandwidth is in use new connections are unable to be made and services suffer. For reference, in recent years the roll out of fast broadband to residents means that many households have between 35mb and 80mb while those with fibre to the premises can have speeds of up to 1000mb.

The council has Wi-Fi throughout the public service centre that has recently been upgraded to improve connectivity as significantly more mobile

devices have been rolled out. The original Wi-Fi access points were setup in 2013 and will need replacing prior to May 2021.

The council's telephone system uses a BT ISDN 30 to deliver 24 trunk lines to the council. These trunk lines are used for both incoming and outgoing calls. The ISDN technology will go end-of-life in 2024 so work will be needed to move away from this before then. Recent upgrades to the internal telephony systems have enabled the council to have the option to adopt SIP technology that allows calls to be routed over the internet rather than dedicated telephone lines. This offers the potential to reduce the cost of calls and provide more flexible solutions to how calls are managed.

Endpoint devices and flexible/remote working

The council predominantly uses a mix of laptops, desktop pcs and thin clients. When the council moved most of its workforce to a single floor of the public service centre, it adopted significantly more hot desking and flexible working. To support this most desks were equipped with a thin client device that connected to a virtual desktop hosted in our datacentre rather than having a fixed PC. A minority of users with specific specialist needs have kept using desktop computers but this means that their desk is unavailable for hot desking.

In recent years there has been increasing demands for laptops to use either from home or as a permanent working solution. This has been challenging to reconcile with the hot desk environment as laptops are best used docked within the office but that can be difficult if the desk is shared with both laptop and non-laptop

users. The rise in paperless and digital working is pushing users to have solutions for working that can work wherever they are working, this might be at home or in the field.

Software and licenses

For operating systems and standard office software, the council currently licenses all its users to use the different types of technology available. In the past this has been economical to license but with the changes to licensing that are being introduced by Microsoft there is a push to move to per user licensing. This means that a user needs to have a specific license assigned to them to allow them to use a product such as Windows 10 rather than being able to share one from a pool allocated to the council.

In addition to the Microsoft software, the council runs many different software solutions to ensure the council services can be delivered. These include IDOX systems for planning and environmental services, Northgate systems for the delivery of revenues and benefits, Civica systems for financial services and payments, xPress systems for elections and many others. Each of these systems has its own requirements, subsystems and databases to be maintained and updated.

Security and maintenance

In order to ensure on-going security, all systems need to be kept up to date with any issued patches and security configuration. There is an on-going schedule to ensure that all software, services and technology is kept up to date. In addition to the scheduled work the council uses automated systems to scan our network for issues that need to be resolved and patched. The rise of flexible and remote working has made it

increasingly difficult to find windows of time to have systems offline for maintenance.

Each year the council undergoes an IT health check (ITHC) to assess the procedures and security of the ICT at the council. This check is carried out by third party specialists who carry out a deep assessment of the technology and software used at the council and look for vulnerability. This ITHC is then used as part of the Public Service Network (PSN) accreditation to ensure on-going access to secure government services such as DWP. The council has always been successful at achieving PSN accreditation.

In addition to the ITHC, staff training in cybersecurity and phishing awareness has taken place. Across all councils and sectors, it is acknowledged that staff tend to be the weakest part of ICT security arrangements. Regular training and awareness sessions are therefore critical to keeping cyber-security in the front of their minds. The implementation of GDPR has been helpful at raising awareness of these issues.

Staffing

The ICT team sits within corporate services at the council and currently consists of the 7.4 members of staff including the manager.

- ICT Manager (permanent)
- 2 x Networks and security officers (permanent)
- 1 x Networks project officer (Two year fixed contract)
- 2 x Applications support officers (permanent)
- 1.4 x First line support officers (permanent)

These staff are responsible for ensuring that there is an ICT service available for all users, in layman's

terms 'keeping the lights on'. These staff are also responsible for any ICT projects that take place in the council. For example, supporting the introduction of new services or change in how a current service is delivered. In order to carry out work, systems can often not be changed whilst they are in use and so there is a significant amount of work that is done out of hours. There has been significant turn over within the team in the last few years caused by long term members of staff either moving on to new roles or retiring, however, these posts have been filled with a good mix of internal progression and external recruitment. The workload is managed using an online ICT service desk that allows users to log tickets with the team to be resolved.

Strategic themes

Four broad themes have been identified for the medium provision of ICT at the council. By applying these themes to the current provision of ICT and to all future technology and system related projects a more resilient, structured and manageable future of ICT can be assured.

Security

The risks arising from cybersecurity are extremely high. Failure to secure the council's ICT resources correctly could lead to critical failure in its ability to deliver front line services. The potential fines for loss of data from a breach can run in to millions or could potentially leave the council 'digitally dead'.

Technology and software need to be regularly updated or patched to remain secure and supported. By implementing these patches or updates security fixes can be implemented and any problems fixed. They can also introduce new

features that are beneficial to the council. It is important that these updates are applied in a timely fashion to reduce the risk to the council.

Cyber security is a significant risk that is recognised at a senior level of the council. By training ICT staff, users and elected members to be aware of cyber security and the associated risks the council can reduce its risk of data loss, fraud, financial loss and reputational loss. The council will continue to build on partnerships with National Cyber Security Centre (NCSC), the South West Warning, Advice and Security Partnership (SW WARP) and our neighbouring councils to ensure that information is shared with us all and lessons can be learnt from them.

Internal security within the council also needs to be regularly reviewed. Users, ICT staff and technology should only have access to information and systems they need and not have broad privileges across the council. Regular review of this reduces risk to the council as it prevents lateral movement across systems where a user is able to gain access to information they wouldn't normally have and then have access to systems to filtrate information from the council to third party systems.

Sustainability

ICT is a continually evolving landscape where new technology and systems are introduced to replace older end-of-life ones. To manage this an investment plan is needed for ICT to offset the need to replace technology as each system goes end-of-life. By assessing the remaining life left on each system or technology, this can inform the council's medium term financial strategy. This investment plan is not limited to financial cost as the staff effort and organisational impact of the replacement projects need to be assessed as well.

New technologies bring with them new challenges and the need for training in how to configure and deploy them, how to maintain them and how to get the most value to the council out of them. This means regular training investment in the ICT staff is needed to ensure they have the knowledge and skills to adapt and utilise these new technologies. For corporate related ICT projects, such as the deployment of Office 365, it is essential all the workforce is sufficiently skilled.

Ensuring the council continues to have high quality ICT staff is critical to the long-term future of the delivery of ICT. This investment starts at the apprentice level to draw new talent in to the council through to ensuring that staff at all levels have development opportunities. This enables new skills to be learnt thereby avoid inadvertently creating glass ceilings within the team when opportunities for progression present themselves.

When procuring new technology, it should be assessed for how sustainable it is as part of the buying process. Some technologies require significant amounts of continuous investment of time and resources to ensure they continue to operate effectively.

Stability

Over the last decade the council has become almost reliant on ICT to deliver all of its services. Issues with accessing ICT or its failure to function correctly has a direct impact on front line services. The on-going ICT provision must provide a stable platform to allow the council to function as close to 24/7 as possible.

System failures have a significant impact on the council's ability to deliver services. Nearly all the council's services have an ICT component and when those fail or suddenly go offline this can

cause serious issues and repercussions. A major incident affecting a critical system will render staff unable to work. Stability of the major and critical systems of the council should be monitored to reduce risks to the council.

Single points of failure within the council's ICT technologies and systems should be avoided where possible. The use of active/passive system or clusters of systems where there are either standby systems or groups of systems all providing a load balanced service should be used or designed into new solutions. Where this isn't possible, contingency plans should be drawn up in the event of a system failure.

It is critical that the council has an up to date business continuity and ICT disaster recovery plan to ensure that in the event of loss of primary systems and technology the provision of council services can carry on. These plans should detail the critical systems of the council and the priority that they should be recovered in.

Simplicity

In order to facilitate the council delivering its functions the ICT offering to its staff and members must be as easy to use. This reduces the number of support calls needed to support the service and improves the take up of new technology. In addition, by reducing the complexity of the ICT infrastructure it becomes easier to maintain and ensure that good cyber threat vigilance is maintained. The more complex the systems are working together the more likely of something falling between the systems and creating problems.

Keeping ICT as simple as possible makes it easier to deploy, support, use and train. It also reduces risks as the similar things are the easier it is to spot when something starts to go wrong. The aim is to

ensure that the council has the correct technology solution for each of its requirements.

Where possible, users should have the systems and technology they need for their role and nothing more. This technology should be usable to carry out as much of their duties as possible in all the locations they need to work. This reduces the complexities and confusion of using different systems from different locations and will reduce the amount of support that user needs.

Governance

An annual action plan will be developed to support delivery of the four themes. The action plan for 2020/21 is attached at Appendix A. Delivery of the plan will be monitored by an internal ICT technical board which is in the process of being set up. This board will oversee 'all things ICT' with a particular remit to ;

- Ensure that ICT related projects meet the necessary technical requirements so as to protect the integrity of the ICT network.
- Ensure that projects that require ICT design or technical support can be adequately resourced including ongoing support and maintenance.
- Ensure projects conform to the direction of travel as set out in this strategy and the Digital Strategy.
- Approve procurement of relevant software licences and hardware.
- Review cyber security arrangements.

The action plan will also be reported to Transform Working Group and Corporate Management Team on a six monthly basis.

Action	Responsible	Date
<p>Sustainability Develop a register of all technology and services to determine when they will need to be replaced and the costs of carrying out the work. Work with the finance team to determine an appropriate investment plan to ensure that the resources are in place when they are needed.</p>	ICT Manager/Finance Manager	October 2020
<p>Sustainability Develop a career development plan for the ICT team to ensure that the correct training and opportunities are in place to facilitate progression.</p>	ICT Manager	July 2020
<p>Sustainability Work with Human Resources to develop a new ICT apprentice position to ensure the future of new ICT talent continues within the council.</p>	ICT Manager/HR Manager	June 2020
<p>Simplicity With the assistance of the operational managers, carry out an assessment of the equipment needs of all posts within the council so that the correct technology and software can be provided to those users. All users will either be fixed desk users with a desktop computer or thin client, a flexible worker with a laptop or a bespoke solution for working predominantly in the field away from the office.</p>	ICT Manager	March 2021
<p>Simplicity, Sustainability, Stability Complete the migration from virtual desktops to remote terminal sessions reducing the complexity of the thin client environment and improving the sustainability of the systems.</p>	ICT Manager	October 2020
<p>Sustainability Undertake a migration from the ISDN trunk telephone lines to SIP provided ones. This will reduce costs and improve the resilience of the council.</p>	ICT Manager	March 2021
<p>Security Undertake an improved phishing/spam awareness campaign to improve user's awareness of the risks of phishing and similar emails. This will reduce the risk of fraud in the council and improve cybersecurity as user credentials stolen from phishing campaigns are often used as the initial penetration point of cyber-attacks.</p>	ICT Manager	May 2020

Action	Responsible	Date
Security Undertake Cyber Essentials Plus certification for the council to give a framework for the approach to cybersecurity.	ICT Manager	March 2021
Stability Undertake a review of existing systems within the council to determine single points of failure and either implement systems to remove them or develop contingency plans for what to do in the event of failure.	ICT Manager	March 2021
Security Obtain PSN accreditation for another year.	Networks security team	July 2020
Sustainability, Stability Improve the council's connectivity by increasing the bandwidth of the internet connection by replacing the existing Internet Service Provider	ICT Manager	June 2020
Security Implementation and testing of a replacement Firewall	Networks security team	May 2020
Sustainability, Stability Replacement of the network storage systems and switching infrastructure.	Networks security team	March 2021
Stability Review the council's disaster recovery and business continuity plans to ensure their ongoing accuracy, relevancy and effectiveness.	Networks security team	October 2020
Governance Implement and establish the ICT Technical Board.	ICT Manager/Head of Corporate Services	June 2020

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