Technology Roadmap 2023-2028

Version 1.5

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Contents

Workforce

Microsoft 365

- Utilise and fully exploit all the capabilities of the Microsoft 365 product suite i.e.,
  - Device agnostic – Whilst the Office client apps are available on multiple platforms such as Windows, Android and iOS, apps such as Word, Excel and Outlook are also web-based and can work online without the need to install any software. Allowing them to be used on "bring your own" devices (BYOD).
  - Access Files Anywhere - Allows staff to store all the files in the cloud. This means they can be accessed by most smart devices and computers, from any location with an internet connection.
  - Secure Cloud Storage – A secure environment with robust security measures in place, like multi-factor authentication, which ensures unauthorised people can't access Council information.
  - Improved Communication - Tools to keep communication centralised and straightforward, with a consistent feel. Allows virtual conference calls and meetings to be held and facilitates collaborate with staff and external partners.
  - Business Continuity - With files stored in the cloud and regularly backed up, the Councils can continue to operate as normal in the case of a major disaster. Regardless of what happens to the physical End User Devices, email, files, and data are safely stored in the cloud.
  - Automatic upgrades – For Office apps such as Word, Excel, PowerPoint and Outlook, upgrades are performed automatically at predetermined intervals, so the latest version is always being used. This helps with counteracting potential security threats.

Telephony:

- National PSTN switch off – the UK is moving away from the old analogue public switched telephone network (PSTN) to a fully digital network. PSTN (and ISDN) services will cease in 2025. CCC plan to move to Voice for Microsoft Teams using Cinos SIP breakout. This will mean CCC Staff can make calls to landlines and mobiles from their laptops and smartphones. PCC will continue to use Cisco Jabber until end of contract (2025) and depending on success of the CCC move, will be considered for future implementation.
- Utilise staff personas to make the best use of Microsoft Teams and Mobile Phones. Personas are archetypical users whose goals and characteristics represent the needs of a larger group of users.

End User Devices (EUD):

- Deploy and manage all staff devices via Microsoft Intune. The end goal is to utilise Autopilot for "out-of-the-box" deployments with minimal IT staff involvement.
- Keep all applications up to date. Look at subscription-based pricing, where available.
- Replace our current, Data Centre-based remote access solution, with the Palo Alto Secure Web Gateway (SWG). Moving away from reliance on the Data Centre for remote working and develop a more flexible "cloud-centric" architecture.
- Migrate offices that are currently on the WAN (Wide Area Network) to have DIA (Direct Internet Access). Use this to connect to Council services in the same way staff would use a Coffee Shop or home connection. This is a more cost-effective alternative.

Automation:

- Use tools in the Microsoft Power Platform (Forms, Automate, Dynamics, Apps) to automate routine and repeatable processes thus freeing up staff to handle more complex issues.

Data Analysis and Reporting:

- Using Microsoft Power BI to develop dashboards to allow staff to have up-to-date information at their fingertips, helping to establish the shift to ' you are the council, how can you help?' (See also Data Strategy).

Communities

Telephony:

- Move off the Cisco/Avaya platforms and look at Contact Centre as a Service cloud-based offering for Contact Centre requirements. This will include full multichannel allowing the Councils to communicate with their customers using a combination of indirect and direct communication channel i.e., website, emails, mobile, social media etc.

Communications:

- Implement Multi-factor authentication using Microsoft Azure AD MFA, to protect vulnerable social media accounts from attacks by hackers and the resultant, potential reputation loss.

Internet Access:

- Provide public access Wi-Fi across many community locations, including village, town, and city centres, in conjunction with Connecting Cambridgeshire.

Data Analysis and Reporting:

- Using Microsoft Power BI and where more detailed processing is required, Python and R to analyse customer interaction data to improve the Councils' understanding of the Communities needs and better design appropriate services.

- We also plan to move the computation required for these tasks into the cloud to make it faster and scalable.

Internet of Things (IoT):

- Develop the required infrastructure (see also "Internet Access" above) to support the deployment of IoT solutions using a wide range of communication technologies i.e., Wi-Fi, 5G, Satellite, RFID, Bluetooth, NFC, LoRa etc.
- Develop IoT solutions to help overcome the many hurdles of trying to live and/or do business in the County and City areas such as:

  - **Traffic and Parking Management -** Further utilise sensors in the highway network to collect data on traffic movements and patterns that could be utilised, via AI, to predict issues and alleviate congestion through active management.

  - Use IoT sensors, CCTV and AI, to collect real-time parking availability and use this predict demand and manage accordingly. Giving drivers the confidence, they can park and calculate their journey times more accurately.

  - **Public Transport** - Greater integration between current GPS tracking, giving citizens real-time information (at Bus Stops, public areas, and via the internet) and traffic information and management outlined above that would have the potential of making Public Transport more attractive using prioritization methods such as virtual bus lanes and other "active" traffic management controls.

  - **Air Quality** – The Councils already have facilities to measure aspects of air quality. However, the true utility here would be the combination of this data and other systems, not only to evidence the success or failure of any initiative, but to use this real-time data to adjust parameters, on the fly, of these other systems i.e., traffic management, Public Transport prioritisation) to optimise and react to environmental changes.

  - **Waste Management -** GPS tracking of wagons and (again) the traffic management mention above, would help the drivers to take the most efficient route to the bins that needed emptying. This would lead to waste disposal being carried out in the most sustainable way possible.

    Digital technology could also help to collect data about the level of recycling compared to general (black bag) waste. A solution would be to collect data on how much (by weight) households were placing in each type of wheelie bin. RFID tags could be attached to each wheelie bin and at collection the bin is weighed (on the wagon) and the RFID tag is scanned. The data could then be analysed to see how much people were recycling by area, allowing targeted campaigns to be implemented in areas of low recycling.

Smart Bins can be introduced to improve the way litter is collected and managed. Sensors in the public litter bins could detect waste levels and notify the council of when they need emptying.

Partners

Collaboration:

- Migrating existing data to and ensuring newly created data is stored either in the Microsoft 365 stack (SharePoint and OneDrive) or in an externally accessible line of business system.
- Using Business-to-Business (B2B) functionality in the Microsoft 365 stack to allow controlled access by third parties but without the need to manage external identities within the Microsoft 365 tenant. Having our identities in 365 also presents the opportunity for partners to grant us access to their systems too.
- Using Microsoft Power BI to develop dynamic dashboards that can then be consumed by the relevant partners.
- Move to SaaS will lead to being able to offer access to line of business systems to outside parties.
- Encourage Partners to implement SaaS-based solutions allowing them to be easily accessed by Council staff.

Inclusion

Internet Access:

- Provide public access Wi-Fi is available across many community locations, including village, town, and city centres, in conjunction with Connecting Cambridgeshire.
- Improve the safety and security of "loan" devices (i.e., Tablets lent out by Libraries), through using Microsoft Intune to deploy and manage devices like Apple iPads and Android Tablets.

Applications and Websites:

- Applications and websites meet the latest accessibility standards. Microsoft 365 apps are designed with the requirements of EN 301 549, WCAG 2.0 AA.
- Utilise, through training and awareness, the "Accessibility" functionality available in Microsoft 365. Accessibility Checkers, Accessible Templates, Autogenerated Alt-Text for images and Captions for audio are available in the Microsoft 365 apps to make it easier for staff to make their emails, documents, presentations, and meetings more inclusive.

Access at Work:

- Develop a register of all Access to Work (AtW) installed hardware and software to improve and speed up the AtW IT request process.

Sustainability

Cloud First:

- Scale down and eventually remove the need to have our own Data Centre, by migrating our IT provision to the cloud, using the following technologies (in preferred descending order):

  - **Software-as-a-Service (SaaS)** - It is software that runs on a provider's infrastructure. The user pays for the licence but does not manage the data storage or physical hardware maintenance.
  - **Platform-as-a-Service (PaaS)** - A platform that a provider offers to its customers via the internet. It enables users to build applications and software on a solution without having to maintain it.
  - **Infrastructure-as-a-Service (IaaS)** - A set of raw IT resources offered to the user by the cloud service provider.

Equipment Procurement:

- Look for a low Carbon Footprint of our equipment in both their manufacture and use.
- Reduce Total Energy Consumption requirements.
- Look for:
  - A high portion of materials used in a product that are capable of being recycle.

A high portion of materials used in a product that have been diverted from the solid waste stream.

Equipment Disposal:

- What happens to equipment purchased by the authority at the end of its practical life is considered. We work with numerous initiatives to ensure devices that no longer perform to the required standard are donated to worthy causes, these include but are not limited to: Adults leaving care, Ukrainian refugees and "LaptopsForLearning". Equipment which cannot effectively reused is collected and sent for recycling by regulated operators.

Remote and Flexible Working:

- Implement the Palo Alto Secure Web Gateway (SWG) to allow staff to work remotely from any suitable location that has an Internet connection.
- Use Microsoft Teams Room licences coupled with Logitech Video Conferencing technologies such as the Logitech Rally Bar and Logitech TAP devices, to support Hybrid meetings.

Data

Data Storage, Analysis and Reporting:

- Microsoft Azure Data Analytics Tools
- AWS Data Analytics Tools
- API based data integration covering Data-as-a-service (DaaS) capabilities
- Master Data Management (MDM)
- Geographic Information Systems (GIS) – Spatial Database
- GIS Tools - Esri, MapInfo and QGIS
- Using Microsoft Power BI to develop dashboards to allow staff to have up-to-date information at their fingertips, helping to establish the shift to ' you are the council, how can you help?'
- Python and R to analyse customer interaction data to improve the Councils' understanding of the Communities needs and better design appropriate services.

Cyber Security

Security Operations Workflow Automation:

- Utilise Machine Learning and automation on activities requiring vast amounts of data analysis and repetitive tasks.
- Automatically combine endpoint, network, cloud, and identity data to detect advanced threats.