

Carmarthenshire County Council Digital Technology Strategy 2018 – 2021

'A cloud first approach'



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Leader

"The internet dominates so much of what we do in life these days and it is having an increasing impact on public services too. Carmarthenshire County Council is determined to embrace the digital revolution and to ensure that we are in a position to take full advantage of the major changes brought about by new technology. Our Digital Technology Strategy sets out a new approach that will underpin just about everything we do as a Council.

'Digital Transformation' has been described as the change associated with the application of digital technology in all aspects of society. Carmarthenshire County Council needs to take advantage of new digital platforms so that our residents and businesses can find information or complete their dealings with the local authority in ways that are convenient to them and also saves public money. This important document outlines how Carmarthenshire County Council will underpin and deliver the components necessary to achieve digital transformation".

*Cllr. Emlyn Dole,
Leader of Carmarthenshire County Council*



Chief Executive

"Welcome to Carmarthenshire County Council's Digital Technology Strategy 2018-2021. This strategy sets out how we underpin our ambitious approach to transform the way we deliver our services to the residents of Carmarthenshire.

We continue to face some tough challenges ahead against a backdrop of on-going austerity and it is essential we maximise the use of the very latest digital innovations to ensure Council services are financially sustainable into the future.

An enhanced digital infrastructure that takes advantage of the latest technologies will provide the foundations allowing us to work with partners from across the Region to deliver more effective, efficient services and transform the local economy ensuring it can compete on the global stage.

The Digital Technology Strategy will be reviewed annually and we will report our progress in delivering on our key projects in our Annual Report".

*Mark James,
Chief Executive of Carmarthenshire County Council*



Our Vision

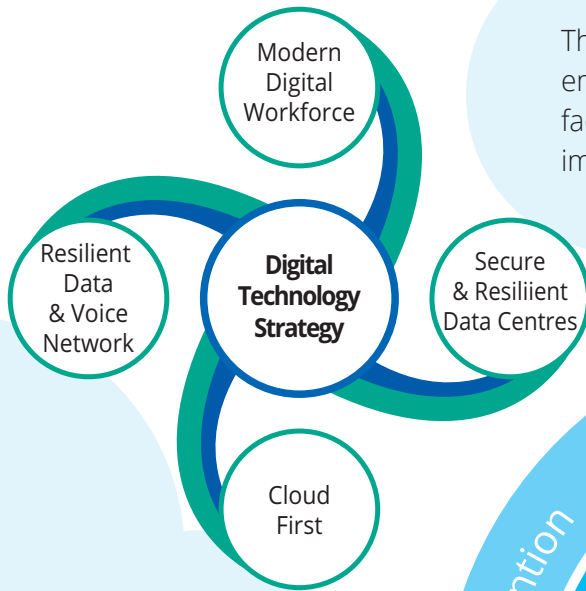
'A Digitally enabled Carmarthenshire'

To achieve this bold vision:

- We will build a more flexible, agile and integrated technology infrastructure.
- We will adopt a highly available, modern, and 'citizen centric' digital platform at the heart of our technology.
- We will harness cloud environments to deliver technology anywhere, anytime for the organisation.
- We will make significant improvements to productivity by harnessing new technology and devices for all our Councillors and Staff.
- We will decommission our on premises infrastructure and replace with virtual cloud technology where at all possible.
- We will pursue a policy of converging and unifying our communications platforms to a single system.
- We will seek to collect, interrogate and extract value from data to facilitate organisational strategy, decision-making and service delivery.
- We will make digital connectivity and bandwidth the foundation of our technology stack, for the organisation, elected members, citizens and businesses.
- We will facilitate and underpin collaboration locally, regionally and nationally through the intelligent deployment of technology.
- We will value, recognise and invest in the people and skills required to achieve the aims of this Strategy.

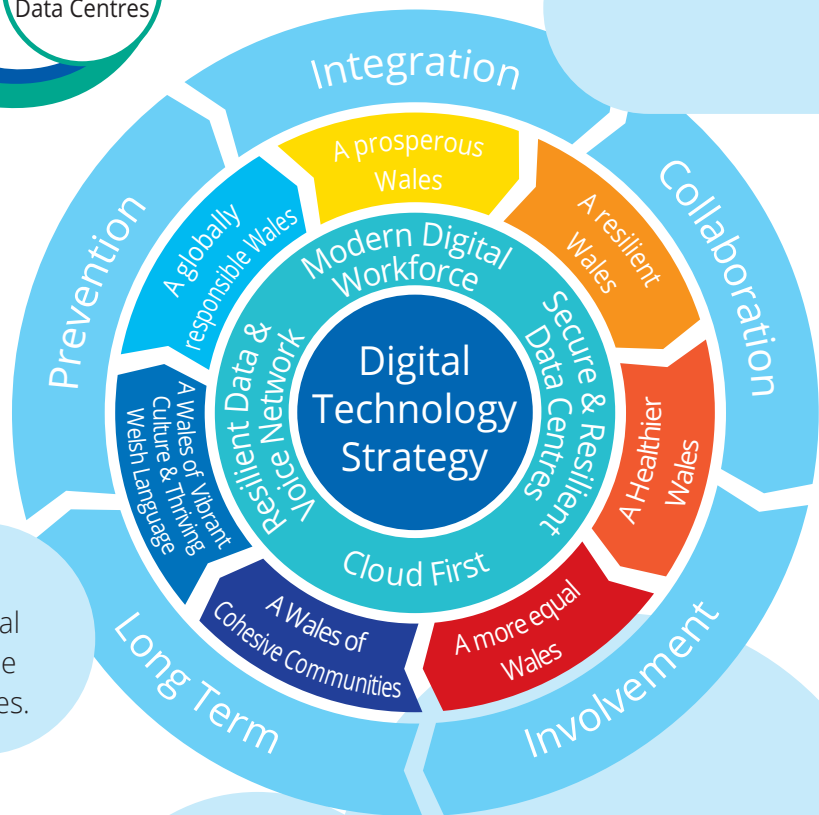
What is a Digital Technology Strategy?

The Digital Technology Strategy sets out the Authority's digital technology priorities and aspirations over the next 3 years. Its purpose is to identify the key technologies and initiatives that will facilitate and underpin the vision and delivery of the organisations existing and overarching Digital Transformation Strategy. The audience for this Strategy are the leadership of the organisation, elected members, our customers and our staff.



The Authority will make use of appropriate emerging and existing technologies to facilitate and underpin service transformation, improvement and efficiencies

We will adopt the Sustainable Development Principles of the Well Being Future Generations Act in our design and implementation of new digital technologies to assist us in delivering the Future Generations Well Being Objectives.



This Digital Technology Strategy recognises that flexible, agile and integrated technology can only be delivered to the Council and its residents if we adopt the same leading edge models of some of the most forward thinking and efficient companies across the globe.

Overarching Principles

To achieve the ambitions laid out in this strategy we will adhere to the following overarching guiding principles:



There are significant and compelling drivers to adopt a **CLOUD FIRST APPROACH** towards infrastructure and technologies. We will pursue these cloud-based solutions where at all possible.



We currently host a variety of complex and ageing legacy technologies. Supporting and maintaining these is both resource intensive and organisationally restrictive. We will seek to **RATIONALISE & CONSOLIDATE** at every opportunity.



We will take advantage of potential benefits and efficiencies through the active investigation, pursuit and adoption of **NEW & EMERGING TECHNOLOGIES**. Where there is potential to add significant value, we will pursue that technology.



BUSINESS CONTINUITY & DISASTER RECOVERY will serve as a key priority in all of the initiatives outlined in this document. We will place resilience and reliability at the heart of everything we do.



We will strive to **IMPLEMENT ALL CHANGES** in a methodical and controlled manner. We will consult and communicate frequently with all relevant stakeholders.



Where there are opportunities to underpin and add value through **COLLABORATION**, we will do so locally, regionally, nationally and across the public and private sector.

Carmarthenshire's Digital Estate

Communications (Voice & Data)



Data Centers

Data Centre's - 2 plus DR site
Corporate Servers - 465 (405 virtual, 60 physical)
Schools Servers - 45 virtualized centrally, 54 in Secondary, 43 in primary
Total volume of storage - 250TB made up of <ul style="list-style-type: none">• 60TB backup data• 143TB VMware data (includes server C: drives at 2TB)• 6TB Solaris Unix• 4TB SQL Clusters• 37TB free space for growth
Total number of tapes to support 1 year of backups = 1800 (each tape hold 800Gb)



End Users

Corporate staff - 3500, plus 81 Councillors and co-opted members
Corporate sites/Buildings supported - 137
Partner accounts (NHS, Housing partners etc) - 440
Schools staff - 3,600
Pupils - 27,000
Laptops - 1826
PC's - 1916
Tablets - 540 iPad's
Smartphones - 426
Desk Phones - 3800
Mobiles (non smartphone) - 1148
Schools Laptops & PC's - Primary 8500, Secondary 5254
Tablets - 4000

Resources

The Authority is investing a significant amount of resources in ensuring we have a robust and resilient infrastructure to underpin citizen service delivery across the County. In addition to ICT Services ongoing revenue budget, we will also invest the following over the next 3 years:

Capital

- £692K to provide staff with the appropriate technology to work in an agile manner.
- £767k Enhancements to County Backbone Networks and Cloud Technology.
- £130k invested in ICT Security provision to meet ever increasing and evolving threats.
- £100k on our Storage Area Network.
- £350k on our Virtual Unix replacement, which hosts several core financial systems.
- £100k on our Disaster Recovery Technologies and capabilities.
- £400k on specific Digital Transformation Projects.

People & Skills

We will invest £112K over the next 3 years in retaining and upskilling ICT staff, providing them with the ability to take this ambitious adoption of future technology forward.

Challenges

The traditional model of maintaining our infrastructure via cyclic capital spends will become less prevalent over the coming years. The transition to more Cloud based "As a Service" ICT models will require a shift to increased revenue spend. ICT Services will work closely with Senior Managers and Finance colleagues on a case-by-case basis to ensure sound business cases are developed to address this transition, and that best value is achieved for the organisation.

Efficiencies

The successful implementation of key projects within this strategy over the next three years will deliver significant cashable savings for the Authority. The projects will also ensure improved resilience and provide the authority with a sustainable robust infrastructure for the next decade and beyond.

This cloud first strategy aligns to, facilitates and critically underpins the **£2.5 Million** efficiencies identified via Agile working. This cloud first strategy has the potential to facilitate significant Capital cost avoidance in future years via the decommissioning of physical assets and infrastructure. The following revenue savings will be delivered:

- £100K Revenue efficiencies from the upgrade and transition of PSBA network circuits to the latest technologies.
- £100K Revenue efficiencies from the virtualisation of our telephony capabilities.
- £99k Revenue efficiencies from the migration of workloads to cloud based Office 365 technologies.
- £41K Revenue efficiencies from power and cooling as a result of the future decommissioning of our County Hall Data Centre.
- £27K Revenue Efficiencies from the comprehensive redesign of our county backbone network infrastructure.
- £30K Revenue efficiencies from the migration to Welsh Governments cloud based digital learning environment (HWB).

'A cloud first approach'

“ *When procuring new or existing services, public sector organisations should consider and fully evaluate potential cloud solutions first before considering any other option. This approach is mandatory for central government and strongly recommended to the wider public sector* **”**

UK Government Cloud First Policy, 2017.

“ *The rapid development and uptake of cloud based solutions for the provision of key ICT services such as e-mail and data storage provides further scope for efficiency and cost savings. Working together to realise these benefits and building any new joint supporting services on cloud-based technologies is likely to secure greater economies of scale* **”**

Welsh Government

Whitepaper, Reforming Local Government, 2017.



What it means

- The rapid deployment of cloud based solutions for the provision of key ICT services such as email, productivity tools, applications and data storage provides significant scope for efficiencies, cost savings and productivity.
- A reduction in costly, cyclic, wasteful physical infrastructure refresh and replacement exercises. This should result in decreased capital infrastructure expenditure, transitioning to more revenue based operational expenditure as we evolve to an “as a service” model for hardware, software and services.
- An environmental impact - as cloud needs fluctuate, server capacity scales up and down to fit. We only use the energy we need and don't leave oversized carbon footprints.
- Cloud allows greater flexibility and rapid deployment of new services in a more efficient, sustainable and scalable manner.
- It will facilitate increased collaboration and provide a means for improved sharing of data and systems.
- It will allow staff to work from the best possible locations from a number of various platforms as required.
- Provides the opportunity to exploit the latest products, features and services as and when released without the need for costly, disruptive upgrades and changes. An “evergreen model”.

Why is it Important

- The organisation's data is an extremely valuable asset. Just as we store our finances in a bank rather than on premises, we should store our data in the most secure, resilient, efficient, cost effective and appropriate place.
- The proliferation of on premises data centers across the public sector is no longer sensible nor sustainable. Carmarthenshire's cloud journey will allow us to scale down and decommission much of our physical infrastructure in the coming years.
- We will design our approach to cloud with the expectation of change.
- In every future technology refresh or adoption, we will consider the cloud option our default, unless there are significant and compelling reasons to deviate.
- We will create, evaluate and scrutinise business cases for all significant cloud migrations to ensure best value for the organisation.

How will we achieve 'A Cloud First Approach'



Resilient Data and Voice Network



What it means







- Our local and wide area networks, internet feeds, telephony and unified communications systems underpin communication across the organisation and with partners.
- Our already significant and sophisticated network provides the ability to communicate, collaborate and share data, systems and services.

Why is it Important

- Data and voice network connectivity and internet access are critical in delivering 21st century citizen services.
- The demand on our bandwidth and internet connectivity channels from corporate services, schools and partners has grown rapidly. We fully expect this demand to increase in the coming years.
- Our network is the foundation of everything we do in terms of technology. Without it departmental, schools and partner systems and services simply would not function.
- We already have both central and departmental systems and services in the Cloud. Our network is the vehicle that allows us to access those, now and in the future.

How will we achieve 'Resilient Data and Voice Networks'

- Dynamically develop and advance our already complex and sophisticated network technology to ensure our network capabilities continue to be fit for purpose.
- Virtualize and consolidate our voice systems to provide enhanced functionality, increased resilience and significant cost efficiencies.
- Enhance our connectivity to the all Wales Public Sector network (PSBA), exploit its full potential as a foundation for collaboration, and utilize shared Cloud services across Wales via that medium.
- Provide truly resilient internet connectivity for corporate, schools and partners.
- Work closely with Welsh Government and BT to increase bandwidth at all schools to minimum of 100mb.

Key Projects	Key Outcomes	2018	2019	2020
Core Network Switch/Router replacement.	<ul style="list-style-type: none"> New hardware will provide opportunities to further enhance and expand our network capabilities. 			
Data Centre core switch/router replacement.	<ul style="list-style-type: none"> New hardware will provide opportunities to further enhance our Data Centres. 			
PSBA Transformational re-design, includes approximately 500 connected sites within Carmarthenshire.	<ul style="list-style-type: none"> Allow for increased resilience and value for Welsh Public Sector. Significant revenue efficiencies as part of PSBA transformation. 			
Telephony (SIP & Mitel)Virtualization.	<ul style="list-style-type: none"> Significant revenue savings and the ability to build resilience into telephony services. Transition from multiple physical systems to two virtual. 			
Increased deployment of Corporate Wi-Fi connectivity at 10 of our largest buildings.	<ul style="list-style-type: none"> 100% Wi-Fi coverage across core buildings. Increased functionality providing a far more seamless Wi-Fi experience. 			
Additional, resilient PSBA Internet feeds.	<ul style="list-style-type: none"> A second resilient internet feed providing access to the internet and Cloud services for Schools, Corporate and Partners. 			

Modern Digital Workplace



What it means

- Empowering our workforce to be as efficient and effective as possible in the right place, at the right time based on the needs of citizen service delivery.
- Facilitating a truly Modern Digital Workplace through the efficient and appropriate deployment of laptops, tablets, smartphones, productivity tools and technologies.

Why is it Important

- The workplace has and continues to evolve rapidly in terms of the tools and technologies being utilized on a daily basis.
- To ensure continuous improvement in workplace productivity we must evolve and keep pace.
- The technology used most commonly in our offices, classrooms, meetings etc. can and should facilitate the aims and objectives of teams, divisions, departments and ultimately the organisation.

How will we achieve 'A modern Digital Workplace'

- Transform our workforce's ability to be productive and to collaborate as individuals, teams and departments through the adoption of cloud based secure productive environments.
- By ensuring our end-user devices are upgraded and updated in terms of hardware and software, providing users with the latest features and functionality.
- Deploying technologies that facilitate a truly agile approach to work, allowing users to connect, communicate and access resources from the most appropriate location in relation to their customers and services.
- By allowing users to securely utilize their own companion devices (tablets & smartphones) for work through the provision of a voluntary "Bring Your Own Device" scheme.
- Enhance and transform traditional workplace practices through the deployment of innovative concepts and technologies such as the 'Internet of Things' and 'Robotic Process Automation'.

Key Projects	Key Outcomes	2018	2019	2020
Microsoft Office 365 (Productivity & Collaboration Platform).	<ul style="list-style-type: none"> Improved access to productivity & collaboration tools. Decommissioning of significant on premises infrastructure. 			
Windows 10 migration.	<ul style="list-style-type: none"> Improved user and management functionality. A compliant and secure end-point environment. 			
Remote users access provision upgrade (Direct Access).	<ul style="list-style-type: none"> A seamless remote experience for users. Improved and reliable access to resources from anywhere. 			
Roll out of agile working devices.	<ul style="list-style-type: none"> Transformation of our device estate to 80% laptops, 20% desktops. An agile workforce able to work from the most appropriate location at the most appropriate time. 			
Provision of optional "Bring Your Own Device" for personal smartphones & Tablets.	<ul style="list-style-type: none"> The ability to use your own smartphone or tablet for work. A secure, productive solution for personal devices. 			
Unified Communication.	<ul style="list-style-type: none"> Integration of communication services i.e. Voice, Instant Message, Video etc. to a single platform. 			

Secure & Resilient Data Centers



What it means

- Ensuring our data, systems and services are hosted in the most efficient and appropriate location.
- Ensuring our data, systems and services are built and managed on the most efficient and appropriate platforms.

Why is it Important

- Our Data Centers are the core of our business, housing our infrastructure, data, and applications. Without them, ICT simply would not function.
- The contents of our data centers are of extremely high organisational value in terms of physical assets, data, annual spend, organisational performance and service delivery.

How will we achieve 'Secure & Resilient Data Centers'

- We will act responsibly, plan ahead and be realistic in terms of timescales relating to Carmarthenshire's journey to the cloud.
- We will seek to decommission our on premises environment, migrating to an "as a service" model for infrastructure, platform and software wherever possible.

- We will seek to rationalise our existing physical footprint from 2 Data Centers and 1 Disaster Recovery site down to 1 Data Centre with Cloud based DR, Backup and Recovery. Our longer-term goal will be to house our primary data center in the cloud as well.
- We will consolidate servers, data and applications, improving overall performance through the adoption of the latest high-speed storage, making best use of technology and preparing us for cloud migration.
- We will seek efficiencies through the adoption of Cloud based storage.
- We will decommission all Citrix based services, replacing them with existing and new technologies that are more efficient and effective for both users and ICT Services.

Key Projects	Key Outcomes	2018	2019	2020
Expansion and evolution of Cyber Security capabilities.	<ul style="list-style-type: none"> • A more resilient and secure digital environment. • Improved response capabilities to a Cyber breach. 			
Replacement and upgrade of our Storage Area Network (SAN).	<ul style="list-style-type: none"> • Improved performance of systems and data. • A sustainable data storage environment. 			
Replacement and upgrade of our UNIX environment.	<ul style="list-style-type: none"> • Sustainability of several business critical systems 			
Replacement and upgrade of our Disaster Recovery capabilities.	<ul style="list-style-type: none"> • A more resilient organisation. • Improved capability to respond to a disaster situation. 			
Windows Server 2012/16 migration and adoption.	<ul style="list-style-type: none"> • A secure and compliant server environment. • Increased management and performance capabilities. 			
Adoption of Cloud hosted web content filtering.	<ul style="list-style-type: none"> • A more resilient, less resource intensive filtering solution. • An increase in schools and corporate web bandwidth availability. 			