Appendix A

ICT Strategy

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Table of Contents

Table of Figures

1. Foreword

ICT Background

Caerphilly Council have a traditional ICT Service provision, the main components being an on-premise data centre in Tredomen House and a number of “Comms Rooms” which provide ancillary services.
It should be noted that in any ICT operation, most of the effort (typically 60-70%) is dedicated to operational activities such as patching, maintenance and cyber security, often referred to as “keeping the lights on” or Business As Usual (BAU) . This is not widely understood, since the more visible side of ICT is around change, new equipment, new software, new ways of working etc. It is also worth noting, that the Cyber Security function sits outside of the Digital Services Team, providing an independent service to the organisation and this deliberate separation will continue.

As well as delivering services to CCBC Staff, the Digital Services Team provides services to the customers of CCBC (the public) mainly delivered via the corporate website.
Since the original design and build of the ICT Service, many changes have taken place both in the ICT Marketplace and in terms of how users consume services.

These changes include:

- **Cloud**
- **Process Automation**
- **IOT**
- **Artificial Intelligence**

This document considers how we balance utilising our current ICT assets with ensuring we have a platform for the future to deliver to our customers, both internal and external, and helping to achieve our Well Being Objectives.

In parallel, austerity and the likelihood of further budget changes would mean a move to a less expensive ICT Service model in terms of both capital and revenue would be beneficial. As modern services such as Cloud are typically revenue based expenditure, this will also bring challenges in terms of how we fund ICT, as the requirement for Capital funding diminishes and revenue funding increases, a challenge which many in the Public Sector will face.

This strategy details the ICT Roadmap for this organisation for the next five years, aligning our organisation with wider Public Sector strategies, building on CCBC’s Digital Strategy and Customer Service Strategy, developing our internal capabilities and providing better Digital Services.

Strategy documents should be living and breathing documents, rather than filed away and forgotten about, or produced as a means to tick a box; this document should serve to inform and reassure the business that ICT will meet its needs over the coming years and provide direction to those working on ICT enabled projects. As business drivers or political focus changes, this document should be updated, re-circulated and agreed, in order to provide a contextual direction at any given time. This document should be the context by which proposed ICT projects are governed against, over the coming years.

1.1 Vision

This strategy will equip CCBC with a modern, flexible infrastructure that will support the organisation and its users, enabling us to fulfil our functions over the next five years and beyond. The ICT marketplace has changed substantially over the last few years, as has UK government policy regarding ICT; this strategy reflects those changes, embracing cloud technologies which will help us move away from on-site infrastructure and aim to allow our users to access systems anytime, from anywhere.

This vision centres on data and information as key assets to the Council with an ICT Service that supports the Council to nurture and utilise good information governance. The future success of the Council is founded on rich, multifaceted, 'real time' data that is available via self-service online portals. It is based on robust digital platforms, able to deliver the power of information instantly through easy to use technology, in ways that are convenient, whilst also removing unnecessary bureaucratic processes and reducing our carbon footprint.

This strategy will move Caerphilly away from continual and increasing maintenance of older systems, by moving toward Cloud-based Software as a Service models, where software and infrastructure is maintained on our behalf. This will help to free the resource we need to help drive the organisation forward in terms of innovation – helping to ensure we speed up our processes and provide customer friendly, efficient services using the latest technologies available.

1.2 Process

The ICT Strategy was developed with input from colleagues across the organisation and also by and on behalf of the Digital Services Team. We undertook various methods of consultation and workshop to develop the key themes and strategic principles herein. Existing documents including the Digital and Customer Service Strategies as well as the Corporate Strategy are key influencers.
The following diagram shows a high level view of the process:

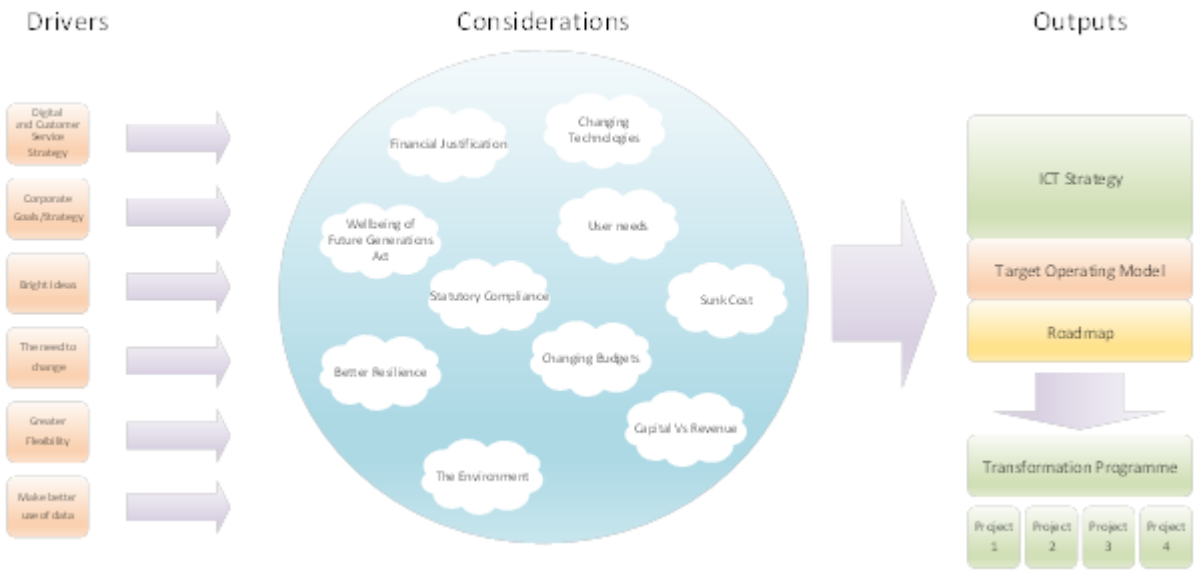

Figure 1 - ICT Strategy Process

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These outputs feed into the Transformation Programme

1.3 Consultations with the wider organisation

To help form the strategy, leaders from across CCBC were consulted in a number of sessions, which looked to understand

- Current issues faced
- Areas where the ICT service could be improved
- Future requirements
- How business areas could better interact with ICT

As a consequence of these sessions, there were a number of common themes regarding both the ICT service and the wider organisation, and how each could improve to meet the needs of the organisation and provide better services to both internal and external users going forward. These are summarised below:

Figure 2 - Consultation Session Outcomes

1.4 Covenant between ICT and the Business

The recognition that both ICT and the wider organisation needs to change how they interact with each other was universally accepted during the consultation process. Therefore, a covenant has been created which sets out a number of behavioural promises that CCBC staff in ICT and the wider organisation now need to follow. This covenant will be published on the Intranet and will be a guiding principle of interactions between ICT and business units.

Covenant

Figure 3 - Covenant between ICT and the Wider Organisation

2. Executive Summary

2.1 Strategic Priorities

The ICT Strategy's main aims are:

- **To enable CCBC to meet its current and future priorities**
- **To enable and encourage flexible working patterns allowing our staff to work from anywhere at anytime**
- **To provide a better experience and level of customer care for all users**
- **To migrate to modern, more cost efficient and environmentally friendly technologies and devices**
- **To provide a secure, resilient infrastructure platform which we can build upon in the future**

In order to achieve these aims, there are four main work streams as described below:

Transformation – This is the changing of the organisation in terms of enabling cloud services and acquiring the skills necessary to manage new technologies

Governance – The introduction of new governance around ICT, both from a project and a day-to-day running perspective

Digital Services Team – The development of the CCBC capability and capacity needed to run the ICT service to a recognised standard

Departmental Business Systems – For our applications used in specific areas of the business, we need to understand the likely future requirements and ensure they are accommodated within the strategy.

These work streams are detailed from Section 6 onward.

2.2 ICT Strategic Principles

The following Strategic Principles have been agreed by representatives from across the organisation, via Open Forum sessions held during May and June 2020.

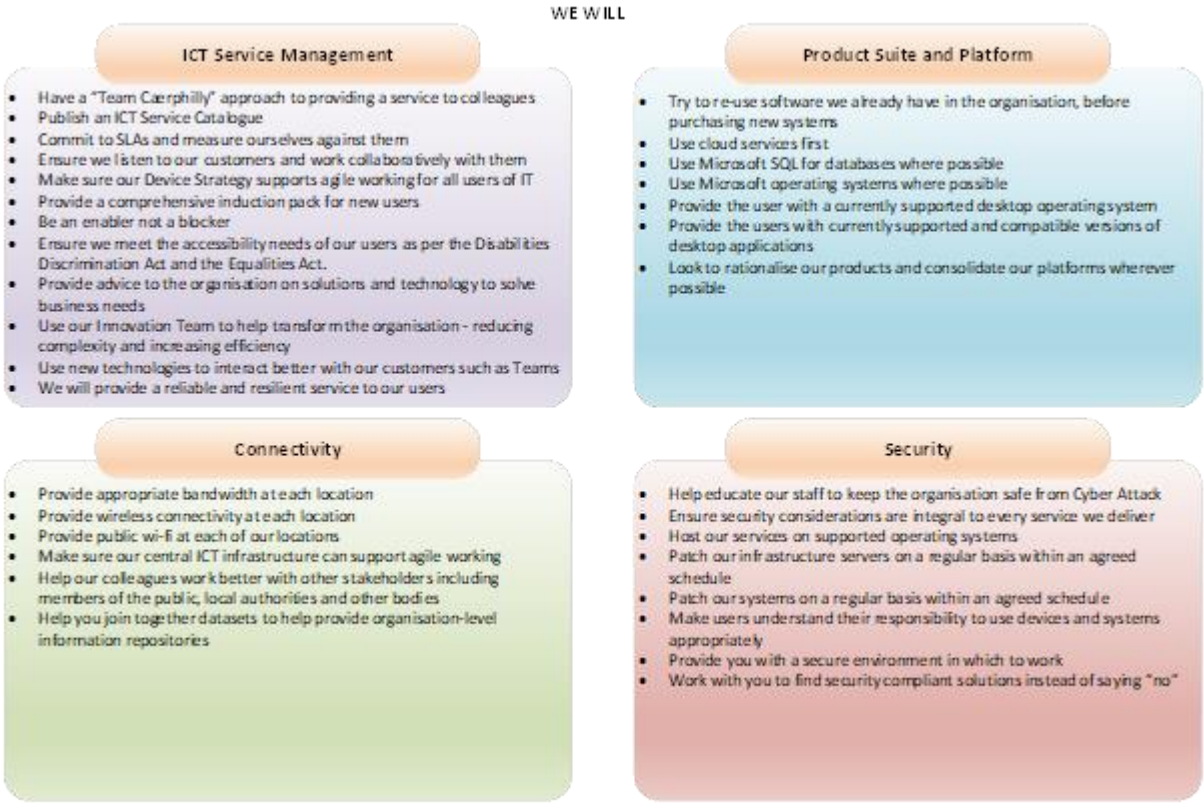


Figure 4 - CCBC ICT Strategic Principles

2.3 Purpose

The ICT Strategy will provide the roadmap, direction and guidance for ICT developments within Caerphilly County Borough Council for the next 5 years. The document will be periodically reviewed and updated in order to maintain its context and relevance.

3. Context

3.1 Overview

Like all organisations of its size and complexity CCBC have a diverse and complex ICT infrastructure and applications suite. These have derived from post local government reorganisation. In recent years ICT and the world of work have somewhat transformed with the advent of Cloud technology, automation and agile

working. The impact of the recent pandemic has accelerated the influence of these technologies and as such created an opportunity for modernisation of the ICT operations and infrastructure within our organisation. Today we see greater demands on a flexible and agile ICT operations. Demand for an agile workforce which is secure and resilient will require a new approach. The strategy will evolve in line with organisation demands. It will provide a resilient and secure infrastructure that can support the TeamCaerphilly agenda.

3.2 Challenges

- There are multiple embedded technology sets within CCBC's ICT delivery that will need to change in order to allow the use of cloud technologies and to help increase flexibility
- ICT Staff Skillsets – as we use different technologies, staff skillsets will need to be re-aligned, this will require training courses and investment
- ICT Service Delivery – Delivering the ICT Service to a professionally recognised standard such as ITIL will require coaching, monitoring and mentoring of the ICT Team. All work will be structured and scheduled.
- Organisational ways of working – The organisation will need to consider how it monitors staff performance under flexible working - an outputs-based approach is required rather than monitoring attendance
- Continual Modernisation – Modern cloud based systems are updated on a regular basis, it will be the responsibility of all staff members to adapt to these changes, and managers in particular will need to encourage the adoption of new productivity tools.
- Engagement with ICT – Many areas of the organisation do not engage with ICT on a regular basis; ICT need to be involved in your policy and strategy making decisions to understand the future impact on ICT Services in a similar way to HR Business Partners
- Prominence – ICT is the beating heart of any organisation, and the coronavirus pandemic has proved that on a global level. It is critical that ICT has a voice at the most senior levels of the organisation and that it is funded appropriately, as the most critical service within CCBC.
- Innovation – the pandemic has shown that the organisation can move in an innovative and agile manner when needed. Innovation and change needs to be part of the "day job" for all staff and we need to continually seek opportunities to modernise and deliver better services to our customers
- Information Management – We need to improve our document management and record keeping, as well as how we store and access data
- Security – Aligned to development of new technologies come ever increasing threats, we will need to provide a robust strategy for dealing with this ever-changing landscape
- Automation – Our staff are key to delivery of our services and their knowledge and experience should be used to benefit the customer, automation of

repetitive processes will free staff to concentrate on a better customer experience

3.3 Well-being of Future Generations Act

In 2015, the Welsh Government introduced the Well-being of Future Generations Act. The Act will ensure public bodies think more about long term outcomes and impacts, work better with people and communities and each other, look to prevent problems and take a more joined-up approach.

It expects public bodies in Wales will:

- work together better
- involve people reflecting the diversity of our communities
- look to the long term as well as focusing on now
- take action to try and stop problems getting worse - or even stop them happening in the first place.

With this in mind, our strategy will aim to support a low carbon, sustainable ICT estate which meets the needs of users. The modernization of our datacentre services through the use of Cloud technologies will see us move into collaborative facilities, working in partnership with third party providers to ensure we have secure, robust and up to date infrastructure. Our modern approach to devices and applications will drive flexibility, and collaborative working.

3.4 Apprenticeships and Learning Opportunities

Additionally, CCBC will continue to support its apprenticeship scheme and work experience / learning placements, allowing local young people to gain valuable work experience and relevant ICT qualifications, not only enhancing the skillsets available to Caerphilly Council but also helping to raise the skill level within the borough. Opportunities to collaborate with other organisations on the apprenticeship scheme will also be explored, in order to achieve a wider offering that can be promoted to school leavers.

3.5 National Digital Framework

This Strategy will continue to develop and change to meet the needs of the Organisation. It will follow best practice to ensure a consistent approach to service delivery. Where appropriate we will follow the Digital Strategy for Wales engaging as necessary with the Chief Digital Officer for Wales and the Centre for Digital Public Services.

4. Infrastructure Overview

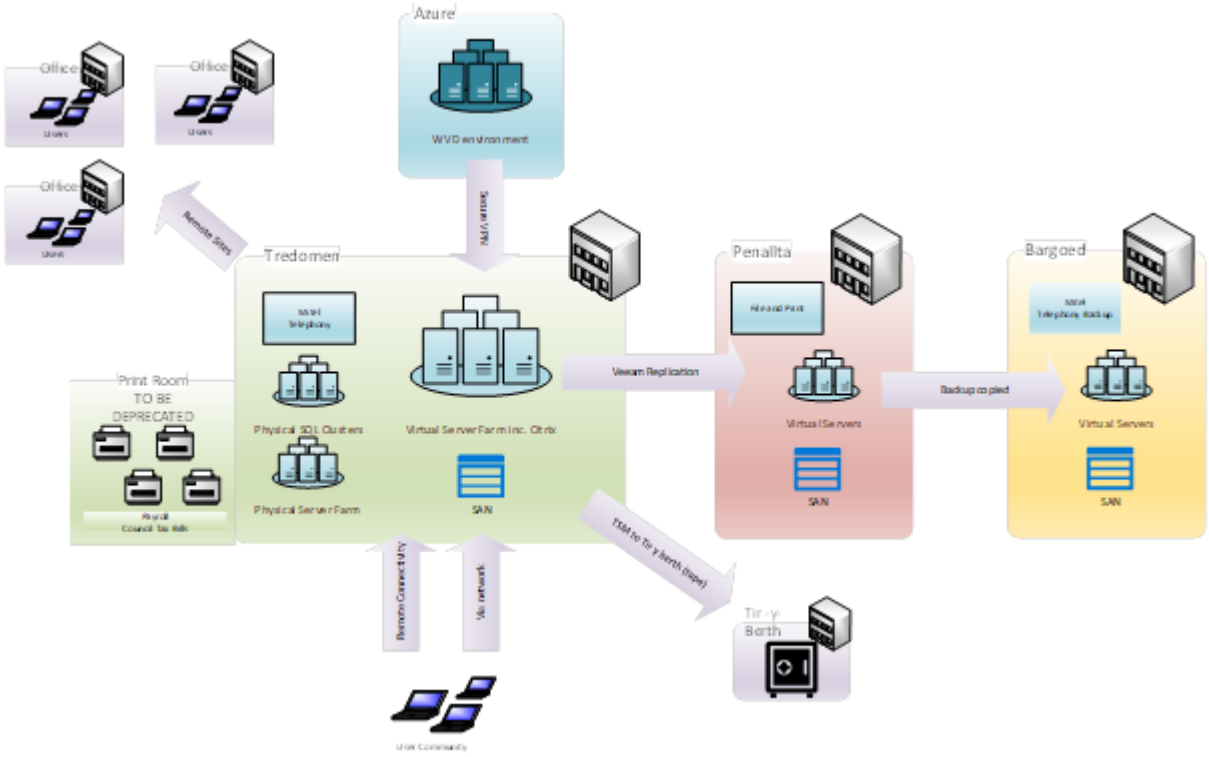


Figure 5 - Infrastructure Overview (High Level)

The above diagram illustrates the current infrastructure at a high level. Each of the functions provided by the components above will be described in this section, along with a future view

Key Features

To note - Additional to Ty Penallta, there are over 40 different sites each with its own infrastructure – only the main building have been including in this diagram for simplicity.

Tredomen Datacentre

The datacentre within the Tredomen Building is an ageing datacentre which contains the bulk of the servers and network infrastructure components which provide CCBC with its ICT and Digital Services including telephony.

With all physical datacentres, there is a burden of responsibility to continually invest in what is known as “environmentals” which include Fire Suppression, Cooling, Security and Cabling on an ongoing basis in order to ensure continued resilience – some substantial investment will be needed going forward to maintain this facility. Moving toward Cloud will help to reduce the requirement for this facility, along with its associated costs.

Tredomen Digital Services Print Room

This print room is used for legacy printing such as pay slips and council taxwe will undertake a full review of this function as part of a wider printing review.

Ty Penallta
As well as being the primary office space for CCBC, Ty Penallta also contains some file and print services, as well as a virtual server farm in case of a catastrophe situation (i.e. medium to long term unavailability) at the Tredomen Data Centre. There is also one Exchange server.
Data is backed up to Penallta as part of the Backup process, and it is envisaged that the site would provide some key services (but not all) in a DR scenario.

Bargoed
Bargoed is used as a Tertiary Site in the event of a disaster recovery scenario and also stores copies of backups. There is also a telephony facility here, in the event of an outage at Tredomen.

Tir-yBerth
Tir-y-Berth is used for the storage of tape backups into a fire-proof safe, for long term storage

Azure
For CCBC Azure acts as an extension to their datacentre currently providing a virtual desktop service for education user, however it is expandable to contain any or all of Caerphilly's services going forward.

4.1 Datacentre Overview

For some time, Caerphilly have used their own datacentre, based in Tredomen house. The datacentre currently consists of 39 racks.

Within the Datacentre is the VMWare Virtual hosting environment. This is approaching end of life and currently runs approximately 650 virtual servers. There are plans in place to move toward HyperV as the virtualization platform in the medium term.

Additionally, there are approximately 100 physical servers.

There is an IBM V7000 SAN and a NexSAN for 2nd Tier storage. Storage devices are almost full and are approaching end of life.

The current cost of running the datacentre is £498,474 per year (FY 2016/17). This does not include capital infrastructure refresh costs (for example replacing servers, replacing storage, replacing air con, fire suppression etc)

4.2 Datacentre future plans

A number of options for future datacentre usage have been explored, including

- Sharing free space with commercial entities or other local authorities
- Providing Disaster Recovery facilities to other organisations

In anticipation of a diminishing size datacentre (both through usage of cloud and rationalisation), it would be worthwhile to consider future re-purposing of part or all of the datacentre, including some of the options above.

4.3 Networks

CISCO core networking is used for the Corporate networking facility, this is fairly new (around 2 years old at time of writing – 2020).
Aruba networking is currently being implemented within the Education domain as part of the Welsh Government Hwb programme.
Core locations, and schools, are connected via the all Wales Public Sector Broadband Aggregation network which facilitates network access for all public sector organisations in Wales. Smaller locations are connected to the Caerphilly network via business broadband technologies.
The core Caerphilly network carries both voice and data, with voice having migrated to Voice over IP technologies in recent years.

4.4 Operating Systems

CCBC predominantly use Microsoft Windows operating systems and are currently using
Microsoft Server 2008, 2012 and 2016
There are some UNIX servers which are end of life, running key applications, and it is the intention to migrate these to Windows platforms.

4.5 User Application Delivery

4.5.1 Current Situation

There are two main methods of application delivery:

- Citrix – this uses a large server farm to deliver the applications, with the processing done in the datacentre.
- Local Install – Applications are installed locally to laptops and desktops and execute locally.

4.5.2 Technical detail

There are two main methods of application delivery, the first is via Citrix, using a traditional on-premise architecture. In offices, a thin client device is used by some staff to connect to this environment (known as an iGel).

Citrix is able to deliver Windows based desktops to a variety of devices including personal devices via URL. The “computing” is undertaken on the Citrix servers themselves within the datacentre, and the consuming device can therefore be very low cost and very low in power consumption (such as an iGel). An additional benefit is that the majority of network traffic is between the Citrix Servers and CCBC’s other application servers which are within the same datacentre. In a traditional Rich Client model (where users have a normal PC on their desktop), traffic is between the client (i.e. the desktop) and the application servers themselves, which can mean larger network capacity is needed and also users may notice greater latency (slow response times) when accessing applications, particularly from remote sites. Having a standardized Citrix based desktop also means that users can easily log in to any thin client device located across the estate, as they are identical and do not hold any user information.

The second method is where ome applications are delivered locally and require a “Rich Client” (Traditional PC).

These are used for applications unsuited or not compatible with Citrix, including CAD and some housing benefits applications.

Remote Working

The Citrix solution provides a remote working capability for users, whereby they can access the virtual desktop environment via a URL. This is accessible from a personal device (home PC, laptop or Tablet), with 2FA (two-factor authentication) provided via either a physical token or via a mobile phone app. There is licensing capacity for 1920 users (across both local and remote working)

There are a number of devices in use in Caerphilly, these include:

- Desktop PC
- I-Gel (Thin Client devices
- Laptops (Typically Lenovo)
- Android mobile phone
- Tablet Devices (both windows and android)

4.5.3 Future Strategy

For all office based organisations, the Coronavirus pandemic and the associated lockdown has demonstrated the value both in flexible IT and an agile working

approach. Staff with laptops have been able to work from home, and other staff have been able to use the URL based solution whilst waiting for laptops.
We must make sure the organisation learns the lessons of lockdown, namely:

- To ensure we are prepared for such a scenario in the future
- To continue with a flexible working approach

Currently most applications are deployed via Citrix and this places a large dependency on the Citrix architecture which is based in the Tredomen Datacentre. What this means, is that in the event of a datacentre outage (power failure, flooding, fire etc) then there would be a cessation of all services.

As we move toward Rich Client infrastructure, (i.e. laptops for all staff), then there is an opportunity to move away from Citrix, which would provide both infrastructure, support and licensing savings moving forward.

4.5.4 Infrastructure Impact of Moving from Citrix to Rich

As users are gradually moved toward Rich Client devices, the virtual desktop environment used by iGels and by the URL remote desktop solution will no longer be required.
Citrix also provides functionality where an application is delivered via Citrix, running on a local desktop. This means that the “chatter” between the remote client and the application servers is much reduced, enabling users to work in lower latency conditions (i.e. on poor home broadband).
Any new solution will need to take into account the move to Rich Client, and be architected in a way that means users with poor broadband will not be impacted (for example, browser based applications). Whilst very useful in its time, Citrix is no longer seen as a modern choice and is losing ground to Cloud and Rich client deployments, due to the flexibility provided, and the management tooling now available which is at least on a par with Citrix in terms of mass deployment.
Ultimately, if CCBC can move away from Citrix, then there are substantial cost savings to be gained as well as a large reduction in server numbers. There is however, a potential for greater support overhead as applications will need to be installed onto each rich client although modern tooling allows this to be undertaken centrally.

4.5.5 The Journey to Rich Client

As Rich clients are deployed widely to staff decisions will need to be made regarding whether application presentation via Citrix continues to be used, or whether applications are installed natively to Devices. Due to the introduction of BitLocker and MFA, there is no security concerns regarding the installation of local apps and data residing locally, however it will have a significant infrastructure impact.
It is proposed that in the future a split tunnelling method is used to improve the resilience of the service in the instance of an outage or loss of connectivity to

Tredomen. This split tunnelling approach means that traffic from the laptop that is consuming cloud services, such as Microsoft 365 including Teams and SharePoint, can go straight out over the internet, rather than via Tredomen – meaning that critical work such as emailing, contact between staff and accessing documents can all still proceed. If Teams is integrated with a cloud PBX then additionally external phone connections would still work in the event of a major outage.
To note, a cloud proxy would be required to safeguard the internet connections of homeworkers.

4.6 Information Management

Like many large organisations, the desire to protect information has led to a situation where there are many information siloes within the organisation. With our new systems, a different approach will be taken, whereby we share data and information with our colleagues within CCBC wherever possible and where compliant with legislations such as GDPR. A concept of "The Customer" will be introduced, whereby information relating to our customers will be accessible as appropriate across multiple systems.
This approach will allow us to:

- To provide better customer service – demonstrating that we have sight of previous enquiries or complaints will ensure that people across multiple departments can continue the thread of interaction with a customer, whether the contact originated digitally, by telephone or by post.
- Sharing more information – this will help us to better model the demands for our services and how we can be more efficient in dealing with them
- More knowledge about our customers – this means we can help anticipate their requests and demands on services, and patterns can be interpreted, either manually or using AI technologies.
- Less duplication – storing data into one system accessible by many, rather than duplicating it across multiple systems means less cost and less chance of mistakes as well as the other benefits listed above.

As part of the roadmap, we will work toward rationalisation of our current data sources, in order to achieve our goals listed above.

4.7 Reporting

The system currently used for Reporting is SQL reporting. Moving forward we will utlise the tools within Microsoft 365 including Power BI.

4.8 Records Management

Currently, there is a mixed level of records management practice across the organisation; the ERDMS system, iDoxs, was implemented in 2007. This system has been adopted in some areas of the organisation, but not all. This means, that there is not a uniform approach to RM and that CCBC is failing under its commitments detailed in the Local Government Act (Wales) to properly preserve (and destroy) Corporate Records appropriately. Additionally, iDoxs no longer supports Records Management by default, meaning it is primarily a DMS system.

Moving forward, it is important that new cloud-based systems are configured to ensure good practice across the whole of the organisation.
SharePoint Online will be used as the DMS for CCBC, potentially with additional modules specific to record keeping, if required. In order to implement this, the following pieces of work have been identified

1. Develop a Corporate File Plan in SharePoint
2. Develop a network of individuals across the organisation who are able to provide records advice to colleagues and can create folders on their behalf
3. A method of storing emails into the correct SharePoint online folder may also be implemented too
4. After Successful implementation, all other areas where documents could be stored should be locked down, this includes:
    a. Shared Drives
    b. OneDrive implementation
    c. Local storage (e.g. your PC desktop or hard drive)
    d. Email Archive
    e. Email Mailbox restriction implemented (300MB)
    f. Personal Drive restriction implemented (max 100MB)
5. Videos should be stored in MS Stream
6. Other large files (i.e. data or media not suitable for a DMS) will also need to have a storage areas
7. Widescale business change will need to be undertaken to ensure records will be stored, retained and destroyed according to the CCBC retention schedule

The principle of the Corporate File Plan will be to have the folder with Open Access, unless there is a legal or sensitivity reason why data therein should be restricted, for example:

- GDPR issues
- Contingency Planning
- Staff restructuring
- Pay and grading negotiation

A useful way to determine whether to restrict access to a specific piece of data is to ask the question “Would this data be released unredacted under FOI” – if the answer is yes, then it should definitely be shared with colleagues across the organisation.

With regard to Business Change, the whole organisation will need to adopt these processes and it is expected that CCBC Leadership will push this message out.

Other considerations:
As Microsoft 365 is rolled out, mailboxes will be migrated to Exchange online, from Exchange on premise. It would be good practice for users to clear down their mailboxes to an acceptable level prior to migration, however, they would need somewhere to store this information, and potentially support and guidance to do so. Good practice is to restrict total mailbox size to an amount that would equate to 3 months storage. Alternatively, a batch job can be run to delete mail items that are over 90 or 180 days old. This could be implemented in stages, so firstly, a 12 month limit on emails could be implemented, then 6 month, then 3 month, in order to allow users time to prepare .

Teams is also being rolled out as part of Microsoft 365. Teams is an excellent tool for collaboration and allows the storing and sharing of files. When files are stored for a “Team” setup in Teams, this is creating a SharePoint site in the background; if anyone is allowed to create a Team, and the team template includes “files” as a feature, then potentially we could have many hundreds of additional SharePoint sites across the organisation, none of which would have retention and disposal schedules. It is therefore critical , that proper governance is applied to Teams, and that only certain people can create Teams or that the “Files” part of teams is read-only. Appropriate governance and policies will be required to safeguard the Authority as greater use is made of these new technologies, ways of working.

4.9 Sharing with other organisations

Increasingly, it is expected that Public Sector bodies collaborate with each other much more widely, sharing data and helping to work towards better outcomes. This means that CCBC need to consider which documents and datasets could be useful for them to share, and what information other bodies could provide to CCBC to help improve services.
Two platforms are currently being proposed by the WLGA to help enable this, and these are as follows

1) Data Sharing platform – this will allow staff members in Local Authorities and other bodies to share large quantities of non-sensitive/anonymised data which

can be used typically for analytics purposes, helping provide input to policy, research and predictive/modelling functions within each body.

2) Collaboration and document sharing platform – this will allow staff members in Local Authorities and other organisations to collaborate with each other using functions such as Instant Messaging, video and audio conferencing, document sharing and real time collaboration

4.10 Telephony – Current Situation

The current telephony deployment in CCBC is a Mitel MX1 system, with SIP trunks. The Telephony solution is currently being reviewed including the contact centre, with a view to how it can integrate with Teams to provide a Unified Comms solution. There are however many localised telephone systems spread across the Authority, none of which link into the main corporate solution and offer much less functionality.

4.11 Telephony – Future Strategy

As part of the Device Strategy CCBC need to consider using Cloud PBX to provide users with telephone numbers integrating with MS Teams which follow the user, enabling them to be contactable whether at their desk or working from home. This means a move away from traditional desk phones and a move toward headsets for all. The use of appropriate mobile Apps will also facilitate usres to be contactable when on site.
Rationalisation of telephone systems will provide improved communications through traditional and unified communications.

A single telephone number for the Authority will be deployed which when linked to a resilient contact centre service will improve customer experience.

4.12 Printing – Current Situation

SafeCom is the print spooler currently in use and that uses the standard staff card connected to the Multi-Function Printer devices. Consumables and toner and paper are all monitored and provided automatically.
Printer usage is billed back to each department on a cost per page basis.
The current costs per page are 8.5p Colour, 1.5p black and white.
CCBC currently prints over 2,739,246 pages per year.

4.13 Printing Strategy

There are a number of different options to consider and it is proposed that these options are evaluated taking into consideration likely future working arrangements.

4.14 Automation

There are many opportunities for the automation and semi-automation of processes in all organisations; the key opportunities are where the introduction of automation can reduce menial tasks that provide little benefit, allowing staff to focus on more cerebral tasks. This does not mean that staff numbers will be reduced as a consequence of the introduction of these tools, rather it means that staff can focus on services that provide more value to the end user, for example, where human interaction is the preferred mode of operation. CCBC have purchased BluePrism Cloud, a tool which can help automate processes - this will be a feature in the roadmap going forward.

4.15 Chatbots

CCBC have currently deployed a chatbot onto the website, in order to provide swifter navigation for website users and to potentially reduce calls into the contact centre. Chatbots could potentially be used in other areas, for example on the Intranet and for ICT support.

4.16 User Types

A substantial study was undertaken of how individuals within the organisation work in order to categorise our user types. This categorisation will allow us to provide users with a standardised ICT offering. These user types are detailed in Appendix C – User Types.

4.16.1User Packages

This section shows the mapping between the user types defined in Appendix C – User Types and describes the ICT packages aligned to each type. A hardware policy will be developed which further describes this in due course

Table 1 - User Packages

User Type	Thin Client or PC	Specialist PC	Laptop or Tablet	Smartphone
Desk Based User	✓			By request
Fixed location worker	✓			By request
Remote worker			✓	By request
Roaming Office User			✓	By request
Specific IT Needs		✓		By request

4.17 Operating System Strategy

Server OS

Current situation is that Microsoft Server 2012R2 Servers are being migrated toward Microsoft Server 2016. All new services will use Microsoft Server 2019 where solutions allow.

A Unix environment exists, based on IBM's AIX flavour of Unix, which serves core financial systems (Council tax, National Non Domestic Rates and Housing Benefits) plus Housing and backup system backup software.

The strategy is to move to a single operating system platform based on Microsoft technologies to improve support through greater knowledge, experience and skills, reduce costs through consolidation and ease business recovery.

Devices

Windows 10 for laptops, desktops and tablets.
Android for mobile telephones

Database

Microsoft SQL Server.
The strategy is to move to a single relational database management system based on Microsoft technologies to improve support through greater knowledge, experience and skills, reduce costs through consolidation and ease business recovery.

4.18 Software Application Strategy

Traditionally applications are purchased or developed for a specific business unit's requirements, resulting in application and data silos. These applications cannot work with each other without costly integrations that were not factored in at the time of procuring or developing them. Services often want 'perfect' rather than accepting 'good enough' or they may miss an opportunity to implement a system and adapt business processes to suit.

We need to ensure that the services that we deliver or commission are responsive, scalable, re-usable, secure and reliable.

As a preference, Microsoft technologies will continue to be used at the operating system and server level. As well as providing industry standard capability, this option also provides us with the most standard migration path to cloud. It should also be noted that Microsoft Azure supports the use of many open source software packages and operating systems which can be considered for new projects in the future.

User Software packages are in the process of being reviewed and consolidated and all critical applications will be assessed for their strategic compatibility; The ICT Team will be undertaking this activity in conjunction with Business areas over the next 24 months, as detailed in the roadmap in Section 6.

Additionally to reviewing the software packages from a consolidation perspective, contracts will also be reviewed to help ensure they are as efficient as possible and that CCBC maximise the return on investment for platforms we already own.

Future Solutions

We need to support the business areas and system suppliers in getting the greatest return on investment from an ICT solution, by using a greater range of the features and functions within the core corporate systems that we have already procured and by reducing or removing the number of lower value and bespoke systems being used. This may need an acceptance of 'good enough' and standardisation.

We need to ensure that when purchasing or writing any new business applications or making significant changes to existing applications we think more holistically than the specific business area requesting the work, so that the opportunities are taken to remove duplication of systems and ensure that data can be shared with other applications or organisations more easily. We also need to challenge 'wants' rather

than ‘needs’ and revert to more standard and less tailored solutions.

In line with the strategic principles, future software applications CCBC purchase will be browser-based SaaS offerings as a preference ensuring multi-platform compatibility and less management overhead.

CCBC will used Microsoft based servers and databases for on-premise solutions and ideally for 3rd party systems.

4.19 Platform Strategy

The following strategic platforms are currently in use within the organisation

Microsoft 365

The Microsoft 365 platform contains multiple applications that Caerphilly could utilise to both replace existing applications and also to improve productivity and collaboration. Once a basic implementation of Microsoft 365 is complete a process needs to be undertaken to maximise use of the Microsoft 365 suite in order to achieve these goals.

The recent investment in Microsoft 365 E5 licences will allow the organisation to deploy a proactive strategic platform, one that will facilitate application development and will allow better use and knowledge of data. This will enhance productivity and collaboration, tapping into the rich source of information held by the Authority. Microsoft 365 E5 licences will allow CCBC to lead the way in security and automation across Wales.

Microsoft continually develops the apps in this app suite improving functionality and introducing new apps to meet customer demands.

BluePrism Cloud

This platform is a RPA (Robotic Process Automation), AI (Artificial Intelligence) and Machine Learning toolset, which is based in the cloud. It employs the concept of a “Digital Worker” to work alongside human staff, to help them be more efficient by completing menial and repetitive tasks on their behalf.
There are currently 3 ‘Live’ Processes – Leavers Process, Supporting People Invoice Payments and Supporting People Referral Forms.
A fourth Process, which is for Free School Meal Applications is currently being built and there are others in the pipeline, such as Blue Badge and School Clothing Grant Applications.

The innovation team will seek to use BluePrism Cloud more widely.

Azure

Currently used for a Windows Virtual Desktop Environment for education purposes (SIMS), there are many potential options for using the Azure environment, including

- Backup
- DR
- Extension to the current datacentre
- Longer term Datacentre replacement

Abavus

Abavus is the current CRM application. Going forward the strategy will be to develop appropriate technology that will provide the very best customer experience. We will look to develop and deploy the most appropriate applications in this field which may include but not be limited to Microsoft Dynamics.

4.20 Remote User Authentication

In order to ensure the security and integrity of the authorities data, any systems being accessed from outside the Authorities network need a minimum of two factors of authentication. This must include Active Directory username/password, followed by either a hardware token, software token, or a certificate based method of authentication. Combining this with conditional access methods provides a further layer of security, where some systems can further be restricted dependent on location. Combining this with conditional access methods provides a further layer of security, where systems can further be restricted dependent on location, device type and sensitivity of data being accessed.

4.21 Supplier Strategy

All systems will be procured in line with the Council's Governance procedures as set out with the Councils Standing orders for Contracts and the appropriate UK Procurement regulations.

4.22 Assisted Users

Our Strategic Principles state we will "Address the needs of our disabled service users when developing and delivering our products and services". What this means in practice is that we will ensure the needs of all our users are met by the ICT Service we provide. In order to do this we will, through the governance mechanisms described later in the document, ensure that all new systems and any substantial changes to systems are co-ordinated with Occupational Health and Equalities Teams.

CCBC will also consider making operating system based accessibility tools such as Magnifier and Narrator available as part of the standard package available to all staff.

5. Support

5.1 Current situation

The Support Service provides ICT helpdesk support to CCBC staff. It is currently split into two layers, first line support (logs call and resolves simple issues) and second line, which resolves more complex issues.
First line support is currently provided by a team within the Contact Centre.
2nd line support is provided by the ICT Team.
This is shown in the diagram below:

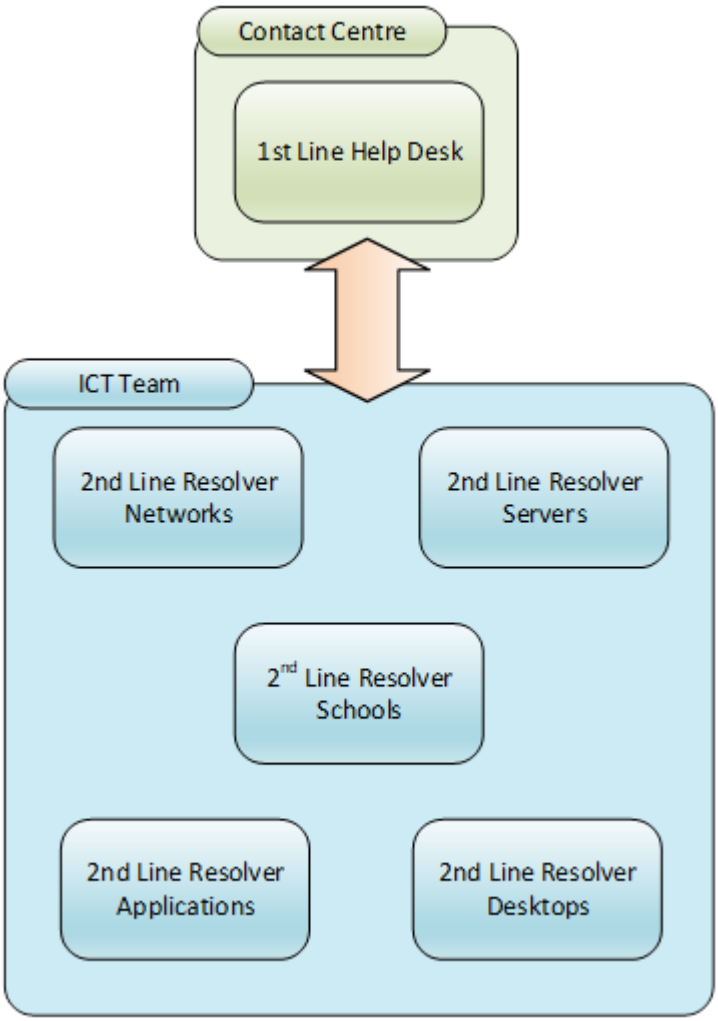


Figure 6 - Support Service overview

1st Line Support

Currently, 1st line support log calls using a tool called JitBit which is a COTS product that has been configured to meet Caerphilly's needs. As well as logging calls, JitBit also allows users to view outstanding tickets and chase up whoever is assigned to them. The first line team are able to deal with some calls in their entirety, without pasing them to the ICT team, this includes password changes and some "How do I queries". The 1st line team also handle aspects of the Joiners, Movers, Leavers process, including some of the interaction with Active Directory. They also manage the transfer of calls to the 2nd line. Reporting on the number of calls received during a day or week is available via the telephone system, which also monitors the number of users in the queue, how many calls were not picked up etc. On average, the desk receives approximately 150 calls per day, and has 3-4 agents.

2nd Line Support

Once the call is transferred to the ICT Team, they will work across the groups shown in the diagram in order to resolve the call. The concept of 3rd line is not present within ICT, and the 2nd line resolver group will act as both 2nd and 3rd line. Supplier support contracts augment the service, with product issues being raised as required. Supplier support contracts are broadly in line with the service requirements for applications; for example, critical applications will have supplier support contracts aligned with service hours, to ensure that in the event of an issue, resolution is as quick as possible.

Service Manager

There is no single person identified as the Service Manager currently. This is a critical role. As part of the department's restructure a new post, second line support co-ordinator, has been created, the post will commence on 1st September. The role of Service Manager will be defined following the commencement of this position

VIP Users

Certain users in the system are designated as VIPs – this includes Members and staff of Head of Service grade and above. VIP users receive prioritised support.

5.2 Ongoing support – patching and maintenance

Server patching

Critical patching of Servers is done on a regular (monthly) basis following the monthly Microsoft security release. The typical process is that when Microsoft release updates, CCBC will then undertake testing and implement approx. 1 week later.

Application Server patching

Many applications are substantially out of date, and whilst this could present a security risk, it also means the latest functionality isn't available to users.

Desktop patching

Critical patching of Servers is done on a regular (monthly) basis.

The typical process is that when Microsoft release updates, CCBC will then undertake testing and implement approx. 1 week later. Critical patches from other vendors will also be implemented at the same time.

6. Roadmap and Workstream Detail

In order to achieve the items set out in this strategy, a delivery based roadmap is set out below:

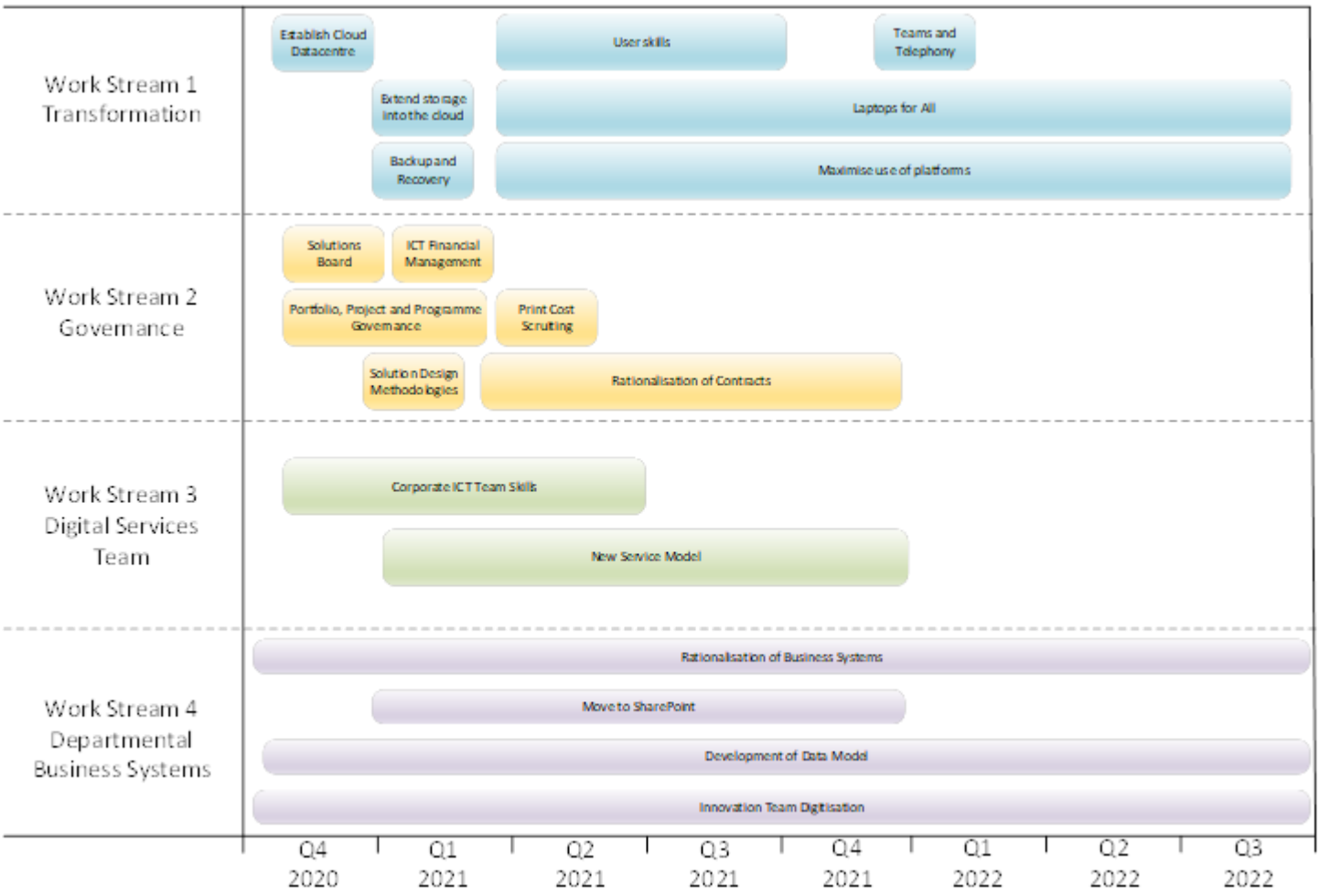


Figure 7 - Roadmap

6.1.1 Strategic Workstream 1 - Transformation

A key premised of Strategic Workstream 1 is the implementation of the Microsoft M365 E5 license. This license provides rich functionality, best-in-class productivity apps, the capability for Power BI reporting across the organisation as well as advanced security. Each of these streams will use features within M365 E5, which will position Caerphilly as a leading-edge Local Authority in terms of functionality, security, resilience and productivity.

6.1.2 Teams and Telephony

We will integrate Teams with a telephony system, to allow portable telephony for all our staff, meaning even the contact centre can work remotely without call forwarding or mobile phones. We will eventually remove all desktop telephones, and replace

these with headsets, providing greater mobility and reducing costs and consolidation all telephony systems into one.

6.1.3 Laptops for All / Flexible working

The Authority has made significant inroads in moving to flexible working which has seen the deployment of laptops increase in the past 12 months, this approach will continue in line with the Council's Flexible / Agile working policy.

6.1.4 Establish Cloud Data centre

We will build a cloud data centre in Azure, ready to house additional services as required over the coming months and years. This facility will work as an extension to our on-premise facilities, but will mean we are able to access the innovative features, scale, flexibility and resilience of the cloud as required.

6.1.5 Backup and Recovery

As SAN and other backup devices are at or approaching end of life, we will move our backup and recovery data into the cloud.

6.1.6 Extend storage into the cloud

We will seek to use cheaper storage in the cloud for our legacy fileshares, allowing us to decommission servers and storage devices

6.1.7 Maximise usage of Platforms

We will maximise our use of Microsoft 365 and the applications therein, to ensure we make most effective use of the products we have invested in.
We will also look to use BluePrism Cloud/BluePrism more widely.

6.1.8 User skills

CCBC users and leaders must have the confidence and competence with ICT, technology and digital services to see and realise the potential benefits of alternative methods of service delivery and to exploit the benefits from available tools. The Councils employees are the most valuable and expensive resource. By ensuring they have both the confidence and competence in using ICT systems and devices we can significantly improve the productivity and quality of our services, which in turn will improve the lives of residents of Caerphilly CBC.

We will identify user skills gaps based on surveys and calls to the support desk. We will then provide additional training material in a variety of formats. Managers across the organisation will support this and encourage their users to learn new ICT skills.

6.2 Strategic Workstream 2 - Governance

Governance Procedures Overview

A new governance regime will be established comprising the following arrangements

6.2.1.1 The Solutions Board

The solutions Board will review and govern all ICT purchases made by the council to ensure that purchases are aligned with this ICT Strategy and with wider Organisational Strategies. We also need to ensure that purchases offer value for money, and that CCBC are purchasing equipment, software and consultancy in the most efficient manner and via the correct procurement routes.
The purpose of the ICT Solutions Board is as follows:

1) To Review proposals for any new ICT related purchase across the organisation
2) To provide ICT Guidance to any staff member with a business problem which may require an IT Solution
3) To provide procurement advice for successfully reviewed proposals
4) To ensure all new ICT purchases are in line with the ICT Strategy and Strategic Principles
5) To consider whether ongoing budget is available for proposed purchases
6) To consider the proposed service and support arrangements for ICT purchases to make sure they are affordable and aligned with corporate requirements.
7) To ensure new ICT proposals meet our ICT Security Standards
8) To ensure new ICT Proposals meet our accessibility commitments
9) To ensure new ICT Proposals meet our Welsh Language commitments
10) To understand Information Management implications and ensure the security of our data

6.2.2 Portfolio, Programme and Project Governance

All projects and programmes will be monitored at a task level and will produce highlight reporting which will feed into the Portfolio Management Team. A consistent and documented methodology, along with set Documents and formats will be agreed, which will be used by all projects and programmes going forward. As part of this, CCBC will develop a formal process for approving workload and allocating resources and timescales.

6.2.3 Project Methodology

For the development of new digital solutions all projects will use Agile Methodology. iterative or agile life cycles are composed of several “sprints” which
are incremental steps towards the completion of a project. Iterative approaches are

frequently used in software development projects and are based heavily on user engagement and the development of “user stories” which describe the functions carried out by the intended users. This method allows the swift development and delivery of digital services to your target audience. Staff will need to be trained in Agile, as similar to all methodologies there are levels of documentation, gateway approvals and delivery methods which need to be followed. For infrastructure projects, more traditional methodologies will be used, particularly when there are high levels of complexity (for example datacentre moves).

6.2.4 Solution Design Methodologies

A set methodology for Solution Design and implementation will be used going forward. Standard document sets comprising Solution Design Documents, High Level Design, Low Level Design and As-Built documentation will be produced. A formal method of peer-review by workshop will be introduced.

6.2.5 ICT Financial Management

Costs incurred my Central ICT will be monitored on a monthly basis for both on-premise and cloud infrastructure. Cloud costs may be monitored more frequently as required.

6.2.6 Rationalisation of Contracts across CCBC

There are a variety of support and licensing contracts by undertaken historically by business units across CCBC. The ICT Team will review all of these, to ensure that there is no duplication and that we are making the most benefit of our licenses where possible.

6.2.7 Print cost scrutiny

We will publish printing costs on the Intranet, including the amounts teams are printing and associated costs.

6.3 Strategic Workstream 3 – Digital Services Team

6.3.1 Digital Services Team Skills

We will conduct a needs-analysis of ICT Team skills, and what is required to achieve our strategy. We will then implement a comprehensive training plan, to ensure our staff develop their skills as the service modernises.

The Digital Services Team recognise that the wider organisation is a key customer of theirs, and in order to improve services to their customer, they will need to have the modern skills required to support the delivery of agile Digital Services and to help the organisation meet its goals.

6.4 Flexible Resourcing Model

As detailed above, Digital Services will enhance their skill sets across multiple areas of Cloud Technology in order to support cloud services. It is recognised however, that there will be multiple short to medium term requirements for both additional staff and specific skillsets that will be required as part of short term and project work. It is not cost-effective to maintain skillsets in-house which are occasionally used, so in these instances, CCBC will use 3rd party resources for time-boxed periods, with defined specific deliverables.

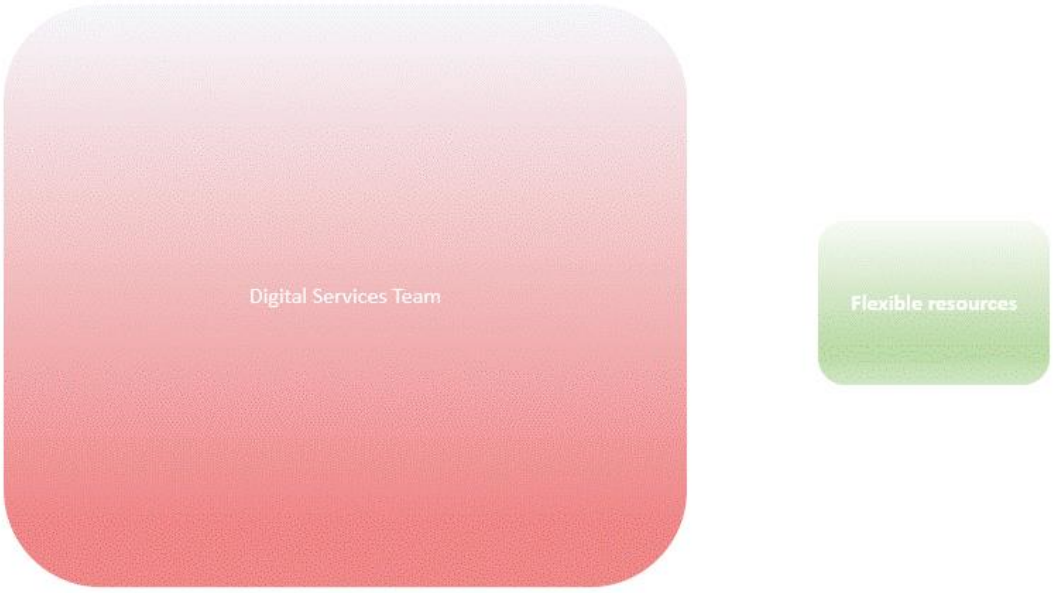


Figure 8 - Flexible resourcing of specialist skillsets

CCBC will look to place call-off type contracts with a number of suppliers as appropriate to ensure that they have the appropriate skillsets to deliver projects, and augment the Digital Services Team capacity where required on a short-term basis. As part of the agreement with the 3rd party resource provider, they will ensure:

- Full documentation of any technical products
- Extensive handover to Digital Service Teams staff
- Day-to-day collaboration with the Digital Services Team, working as “One Team”
- Open and co-operative ways-of-working
- Knowledge transfer on a daily and ongoing basis
- Skilled individuals to be provided who have recognised industry experience and qualifications
- Cost effective and competitive rate-cards and billing methodologies.

6.4.1 New Service Model

We will implement a modern 3-tier Support desk with documented processes and procedures for Problem Management, Change Management, Incident Management. We will base our service on the ITIL model as recommended by GDS.
To note, this is a substantial piece of work.

6.5 Strategic Workstream 4 – Departmental Business Systems

6.5.1 Rationalisation of business systems

We will analyse all our systems across the estate to understand:

- Which systems can be retired
- Which systems need to be replaced
- Which systems could be replaced by an existing system in another area of the business

This will be a gradual process undertaken by the Innovations team, as they focus on each area,

6.5.2 Development of data model

We will focus on developing a data model of the data we hold in different systems, in order that we can:

- Understand all the data we hold
- Know our customer better
- Provide a better Service
- Use AI to identify service growth and demand.

This will be developed as systems come to Solutions Board and as the Innovation Team works with each business unit

6.5.3 Innovation Team Digitisation

The innovation team will help business areas to digitise areas of their business and/or to automate manual and tedious tasks, allowing staff to focus on tasks that provide more value to the customer and the organisation.

6.5.4 Move to SharePoint

There are a number of steps within this piece of work:

1. Develop a Corporate File Plan in SharePoint
2. Develop a network of individuals across the organisation who are able to provide records advice to colleagues and can create folders on their behalf
3. A method of storing emails into the correct SharePoint online folder may also be implemented too
4. After Successful implementation, all other areas where documents could be stored should be locked down, this includes:
    a. Shared Drives
    b. OneDrive implementation
    c. Local storage (e.g. your PC desktop or hard drive)
    d. Email Archive
    e. Email Mailbox restriction implemented (300MB)
    f. Personal Drive restriction implemented (max 100MB)
5. Videos should be stored in MS Stream

6. Other large files (i.e. data or media not suitable for a DMS) will also need to have a storage area
7. Widescale business change will need to be undertaken to ensure records will be stored, retained and destroyed according to the CCBC retention schedule

6.5.5 Microsoft 365

The commitment to Microsoft 365 E5 licenses will push the Organisation forward, not only delivering apps but also improving security, compliance and providing a gateway into cloud services. Microsoft 365 will include:

1. Microsoft Office Apps for Enterprise
2. Azure Active Directory Premium (P2)
3. Microsoft Defender for Microsoft 365, Endpoint, Identity
4. Microsoft Cloud App Security. View apps used in your organisation, identify and combat cyberthreats, and monitor and control data travel in real time.
5. Azure Information Protection (P2). Discover, classify, label, and protect sensitive documents and emails.
6. Advanced compliance. Perform risk assessments across Microsoft Cloud services, automatically protect and govern sensitive data throughout its lifecycle, and efficiently respond to regulatory requests.
7. Windows 10 operating system

6.6 Target Operating Model

To note, on completion of the Strategic Workstreams, the following Target Operating Model can be realised.

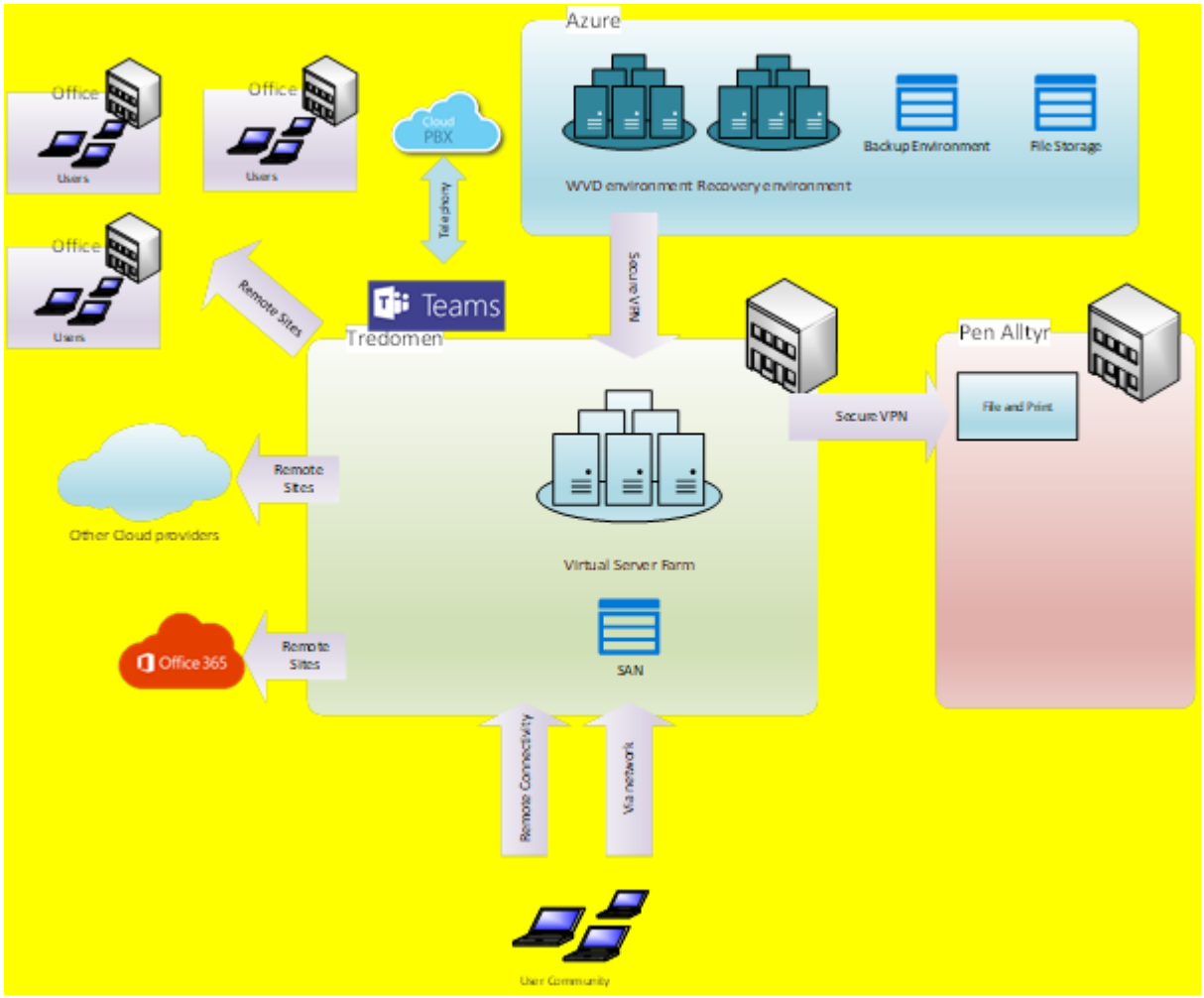
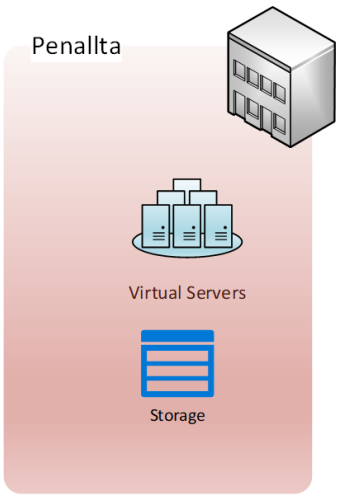


Figure 9 - Target Operating Model – Technical

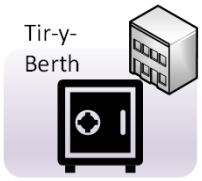
As can be seen, this is a much simpler architecture than the current infrastructure, primarily due to the uptake of cloud services including Office365, Backup, Recovery and file storage, the rollout of laptops to all, and also the use of Teams with cloud PBX. Additionally to Azure, other 3rd party cloud-based products will be used, particularly for SaaS based line of business applications.
This means that the following items can be removed from the infrastructure:

Penallta

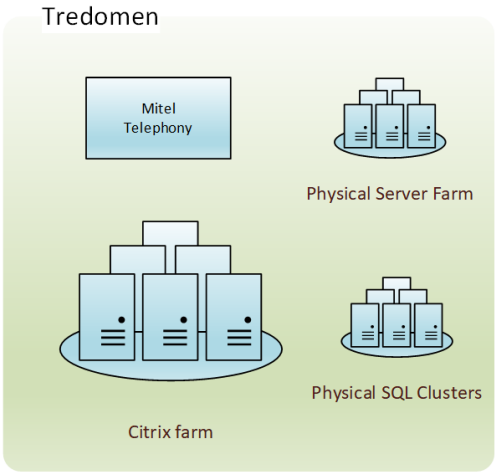


As a consequence of the move of Backup and Recovery Services to Azure, both the Virtual Servers and the Storage in Penallta can be decommissioned.

Tir-y-Berth



Also as a consequence of the move of Backup and Recovery Services to Azure there is no need to do offline backups at Tir-y-Berth



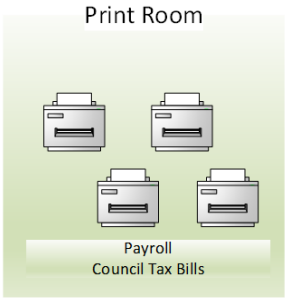
Tredomen

Rationalisation of our applications means we should be able to remove much of our physical servers and physical SQL clusters, either by replacing those applications or moving them to the cloud.

A full laptop rollout will mean that the Citrix farm is no longer required

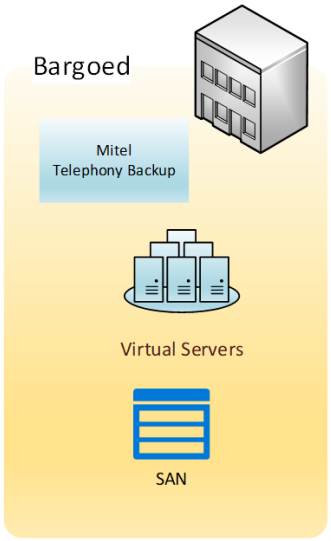
Mitel Telephone could potentially be replaced by a cloud PBX if we look to us the full potential of MS Teams.

Tredomen Print Room



The Print Room in Tredomen is already scheduled to be deprecated

Bargoed



As a consequence of the move of Backup and Recovery Services to Azure, both the Virtual Servers and the Storage in Bargoed can be decommissioned.
Again, the Mitel Telephone could potentially be replaced by a cloud PBX if we look to us the full potential of MS Teams – this would require a partial redesign of the network however.

7. Appendix A - Glossary of Terms

Term	Definition
AGILE	A method of project management, used especially for software development, that is characterized by the division of tasks into short phases of work and frequent reassessment and adaptation of plans
Android	An open source operating system used predominantly in mobile phones and computers
BAU	Business As Usual – in this context referring to the say to day running of ICT Systems
BYOD	Bring Your Own Device – the concept of using one's own device for work purposes
CAR	Centralised Asset Register – a central log of all an organisations ICT related assets
CoCo	Code of Connection – the security and physical controls an organisation must meet in order to join a network
Citrix	Citrix are a software vendor, however in this context it is referring to their most ubiquitous software product which provides a managed desktop solution to users, by means of undertaking the computing in the datacentre. I.e. the actual desktop session is taking place on a server that could be some geographic distance from the user, and the users sees a representation of this activity on their thin client device.
Cloud	Cloud computing is a kind of Internet-based computing that provides shared processing resources and data to computers and other devices on demand
CRM	Customer Relationship Management
GDS	Government Digital Service – part of the Cabinet Office, which a focus on Digital Transformation and strategy
IaaS	Infrastructure as a Service is a form of cloud computing that provides virtualized computing resources over the Internet
ICT	Information Communication Technology
iOS	An operating system used for mobile devices manufactured by Apple Inc.
IT	Information Technology
ITIL	ITIL is a best practice framework that has been drawn from both the public and private sectors internationally. It describes how IT resources should be organised to deliver business value, documenting the processes, functions and roles of IT Service Management (ITSM). It is considered to be best practice in government.
LAN	Local Area Network
MS	Microsoft
OLA	An operational-level agreement (OLA) defines the interdependent relationships in support of a service-level agreement (SLA). The agreement describes the responsibilities of each internal support group toward other

	support groups, including the process and timeframe for delivery of their services.
PaaS	Platform as a service (PaaS) is a category of cloud computing services that provides a platform allowing customers to develop, run, and manage applications without the complexity of building and maintaining the infrastructure typically associated with developing and launching an app
PBX	Private Branch Exchange
PC	Personal Computer
PSBA	The PSBA network is a Welsh Government led collaborative national communications service that, in conjunction with other major Welsh public sector organisations, has created a national information & communications platform to enable greater efficiency and collaborative potential, helping to support the delivery of improved services for the people of Wales.
PSN	The Public Services Network (PSN) is the UK government's high-performance network, which helps public sector organisations work together, reduce duplication and share resources. It unified the provision of network infrastructure across the United Kingdom public sector into an interconnected "network of networks" to increase efficiency and reduce overall public expenditure.
SAN	Storage Area Network – usually a device containing multiple hard disks, used for large scale digital storage
SAP	Systems Applications and Products
SDA	The Solution Design Authority is a forum which reviews all proposed ICT solutions across the organisation, to ensure strategic alignment and efficient use of resourcing.
SLA	A Service Level Agreement is a contract between a service provider (either internal or external) and the end user that defines the level of service expected from the service provider. SLAs are output-based in that their purpose is specifically to define what the customer will receive
SI	System Integrator – a large scale ICT Services Provider
SME	Small to Medium sized Enterprise
SQL	Structured Query Language
TB	Terabyte – 1000 gigabytes.
VoIP	Voice Over Internet Protocol
WAN	Wide Area Network