

CONNECTED KNOWLEDGE – TECHNOLOGY STRATEGY 2017-2022

Councillor Mrs J Blake

Cabinet Member for Business Transformation

1 Purpose

- 1.1 This report and the accompanying document set out the vision and strategic aims Aylesbury Vale District Council has for its future use of technology and data.
- 1.2 The Strategy was submitted to the Finance and Services Scrutiny Committee on 1 December 2016. The comments made at that meeting had then been considered by Cabinet, along with the report and accompanying document, on 10 January 2017, in making a recommendation to Council.

2 Recommendations/for decision

- | |
|---|
| 2.1 That Council approve the Connected Knowledge – Technology Strategy 2017–2022. |
|---|

3 Supporting information

- 3.1 The attached report was submitted to Cabinet on 10 January 2017 and sets out a robust technology strategy for AVDC for 2017-2022. It is designed to be the catalyst for technological innovation and change, propelling the Council into the future.
- 3.2 Extensive work was done with the senior management team to understand the Council's future direction and requirements. An initial vision was produced and agreed priority to the full strategy document being created.
- 3.3 The report and Strategy had previously been considered by the Finance and Services Scrutiny Committee on 1 December 2016 and the comments made at that meeting were reported to the Cabinet meeting in January. Cabinet noted that most of scrutiny's comments related to the implementation of the strategy and not the direction or approach set out within the document. Members of the Scrutiny Committee had been assured that before implementing any of the changes the issues raised would be addressed or were in fact in hand, to ensure that they were satisfactorily resolved. For example, it had been indicated that work had commenced on developing an Information Management Strategy which would address the issues around data security and regarding how data and knowledge would be shared within teams. The impacts of the strategy were also well understood by staff and unions as it had formed the main driver behind the recently agreed restructure proposals within the IT teams.
- 3.4 Council is asked to consider the contents of the Connected Knowledge – Technology Strategy 2017-2022, with a view to adopting it.

4 Options considered

- 4.1 None.

Submitted to Finance and Services SC on 1/12/2016 & Cabinet on 10/1/2017

CONNECTED KNOWLEDGE – TECHNOLOGY STRATEGY 2017-2022

1 Purpose

- 1.1 This document sets out the vision and strategic aims Aylesbury District Council (AVDC) has, for its future use of technology and data.

2 Recommendations/for decision

- 2.1 We seek approval for this report to move to next approval stage. The technology strategy will be published online once Cabinet and Council have approved it.

3 Executive summary

- 3.1 This document sets out a robust technology strategy for AVDC.
- 3.2 Designed to be the catalyst for technological innovation and change, propelling our organisation into the future.
- 3.3 Supporting us with the necessary tools, policies and people, within an environment that further enhances the commercial mind-set and company culture. For which we are already widely acknowledged as championing, as a public sector organisation.
- 3.4 The advances we made with our previous five year cloud strategy have created a strong foundation for the next five years. Enabling us to think bigger and more creatively about the challenges and opportunities and how we are best positioned to benefit from them. Primarily we are working to ensure the future happens for us, not to us.
- 3.5 This strategy and its accompanying roadmap sets out in the necessary detail, the guiding principles and objectives. It contains the key achievements we will meet. Ensuring critically important and interdependent milestones are managed to completion. This Includes:
- 3.6 The creation of the Connected Knowledge platform, a platform data and intelligent systems enabling properly integrated and automated transactions for all our customers.
- 3.7 The introduction of artificial intelligence (AI) and AI powered voice control, which over time will serve increasingly complex customer demands.
- 3.8 Being 100% cloud software based. Meaning a simplified, lower maintenance Information Communication and Technology (ICT) landscape.
- 3.9 A more strategic approach - to what we do, the services we provide, who we work with and what we buy.
- 3.10 In year 1 of this strategy we will have; moved more key systems to cloud based software-as-a-service (SaaS), published new policies and guidance on the use of ICT at the council, selected partners for the running of the network and telephony, established strong governance for the execution of this

strategy and roadmap and replaced the current Citrix user computing environment with a lower cost, lower maintenance alternative.

- 3.11 In year 2 we will have; a single payroll, Human Resources (HR) and finance system, phased-out desk based telephony with a more mobile solution, created a data and information hub and our staff are consuming all council systems via an Internet browser instead of being dependant on software installed on their computers.
- 3.12 In year 3 we will have; decommissioned remaining ICT assets, in favour of more agile cloud consumption models. Used AI and digital voice-control for multiple scenarios, provided commercial services to peers and private sector organisations and considerably reduced the number of software applications we use and have successfully integrated the remaining ones.
- 3.13 In year 4 and beyond we will have; made home working and remote working the 'new normal' for the majority of staff the majority of the time, become one of the smallest tenants of The Gateway Centre We have positioned our staff to deal with high-complexity-high-value demand while AI solutions meet the rest. Created opportunities, yet unforeseen, because of the preparatory work on better management and exploitation of our data.

4. Supporting information

- 4.1 Extensive work was done with the senior team to understand the council future direction and requirements. An initial vision document was produced and agreed priority to the full strategy document being created.

5. Options considered

- 5.1 None.

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Background documents;



Aylesbury Vale District Council

Connected Knowledge

Technology Strategy 2017-2022







Contents

1. Introduction	6
1.1 Scope.....	6
2. Executive Summary	7
3. Vision	9
3.1 Key Messages of the Vision	9
4. Our Mission	10
4.1 Business Value	10
5. Key Technology Outcomes	11
5.1 Singularity of purpose	12
6. Strategic Technology Objectives	13
7. Measuring Success	14
8. Principles	15
9. Connected Knowledge	16
9.1 The Rise of the Customer	17
9.2 The Platform	18
9.2.1 Strategic Purchases	19
9.2.2 Applications.....	21
9.2.3 API Management.....	22
9.3 Data.....	24
9.4 Security & Trust	25
9.4.1 Trust.....	25
9.4.2 SaaS Identity and Access Management	26
9.5 Server Infrastructure.....	28
9.6 Connectivity, Telecoms & PSN	29
9.6.1 Mobile Telephony	32
9.7 Non-Strategic Systems	34
10. Strategic Technology Operating Model	35
10.1 Model	37
10.2 Key Operating Model Outcomes.....	39
10.3 Leadership.....	39
11. Opportunities in Technology	41
12. Connected Knowledge Landscape	43
13. High Level Roadmap	44
14. Appendices	45
Appendices 1 - Current Application Estate.....	45
Appendices 2 - Commercial and IT Principles.....	49
Appendices 3 - AVDC Objectives and Principles.....	51
15. External References	52
16. Glossary of Terms	53

Table of figures

Figure 1 – Customer Expectations, Demands & Channels	17
Figure 2 - Virtual Purchasing Team	19
Figure 3 - API Management Use Case.....	23
Figure 4 - SaaS Access Arbitration Phase 1	27
Figure 5 - SaaS Access Arbitration Phase 2	28
Figure 6 - Current High Level Hub and Spoke.....	31
Figure 7 - Dis-aggregated Internet Access Model & No LAN	31
Figure 8 - Value Creation & Delivery.....	36
Figure 9 - High Visibility, High Value Roles.....	36
Figure 10 - FTE Ratios	37
Figure 11 - Logical Model	38
Figure 12 - Bridging the Gap	40
Figure 13 - Amazon Echo with AVDC App. 'Voice-as-a-channel'	42
Figure 14 - Connected Knowledge Landscape	43
Figure 15 - High Level Roadmap	44



1 Introduction

This document sets out the vision and strategic aims Aylesbury District Council (AVDC) has, for its future use of technology and data.

The document supports the strategic aims of the organisation as a whole. For that reason it is not simply an IT strategy. It is intended as a detailed narrative that describes how we (AVDC) will make full use of technology to meet our organisational aims, at the same time creating commercial opportunities for this council so we can continue to thrive amidst increasing budgetary pressures.

This document should also be read in conjunction with the accompanying AVDC Digital and Technology Roadmap 2016.

For clarity when we refer to ‘customers’ we refer to both external customers and AVDC staff and members. Additionally, we are purposefully distinguishing between partners and suppliers. Partners are those who support our strategic aims through co-creating products and services, helping us sell products and services and help us execute our roadmap. Suppliers are those who sell to us, and those which are supplying commodity items or less strategic services, such as water, power and facilities management.

Note: Where product and/or vendor logos and names are referred to, they are used for example only. This is to better illustrate a concept and not to commit to their use, now or in the future.

0.1. Scope

The scope of this strategy is Aylesbury Vale District Council.

However, its subsidiaries, such as Vale Commerce, can now make an informed decision on whether to adhere to this strategy, entirely, in part or not at all.

Customers

Customers will include businesses, residents, parishes, members, partners and staff.



2 Executive Summary

This document sets out a robust technology strategy for AVDC.

This strategy is designed to be the catalyst for technological innovation and change, propelling our organisation into the future. This will be achieved by supporting us with the necessary tools, policies and people, within an environment that further enhances the commercial mind-set and company culture for which we are already widely acknowledged as championing, as a public sector organisation.

The advances we made with our previous five year 'cloud' strategy (storing and accessing data and programmes over the internet rather than on local hard drives and servers) have created a strong foundation for the next five years, enabling us to think bigger and more creatively about the challenges and opportunities and how we are best positioned to benefit from them.

Primarily we are working to ensure the future happens for us, not to us.

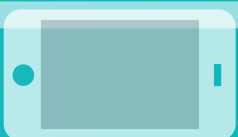
This strategy and its accompanying roadmap sets out in the necessary detail, the guiding principles and objectives. It contains the key achievements we will meet, ensuring critically important and interdependent milestones are managed to completion. This includes:

- The creation of the Connected Knowledge platform, a digital platform that pulls together integrated data and intelligent systems enabling us to properly integrate and automate transactions for all our customers.
- The introduction of artificial intelligence (AI) and AI powered voice control, which over time will automate responses to increasingly complex customer demands, reducing the time staff spend resolving the queries.
- Being 100% cloud software based, meaning a simplified, lower maintenance Information Communication and Technology (ICT) model.
- A more strategic approach - to what we do, the services we provide, who we work with and what we buy.

Connected Knowledge

We see the future as an interconnected world with staff, customers, partners all engaging with the digital technology to deliver the Councils Strategy.

See detailed connected knowledge landscape further on.



In year 1 of this strategy we will have; moved more key systems to cloud based software-as-a-service (SaaS – where software is licensed on a subscription basis and held for us by an external partner), published new policies and guidance on the use of ICT at the council, selected partners for the running of the network and telephony, established strong governance for the execution of this strategy and roadmap, and implemented a Cloud Access Security Broker (CASB – a software tool or service that sits between our customer devices such as PCs, tablets and phones, and the cloud provider’s infrastructure allowing us to extend the reach of our security policies beyond our own infrastructure).

In year 2 we will have; an integrated payroll, Human Resources (HR) and finance system, phased-out desk based telephony with a more mobile solution, created a data and information hub (Connected Knowledge Platform) and our staff are accessing all council systems via an internet browser instead of being dependant on software installed on their computers.

In year 3 we will have; decommissioned remaining ICT assets (such as scanners, network switches, in favour of more agile cloud consumption models, by using AI and digital voice-control for multiple scenarios, provided commercial services to peers and private sector organisations and considerably reduced the number of software applications we use, and have successfully integrated the remaining ones.

In year 4 and beyond we will have; made home working and remote working the ‘new normal’ for the majority of staff the majority of the time, become one of the smallest tenants of the Gateway Centre, positioned our staff to deal with high-complexity-high-value demand while AI solutions meet the rest. Created opportunities, yet unforeseen, as a result of the preparatory work on better management and exploitation of our data.

SaaS

Software as a Service is a software licensing and delivery model in which software is licensed on a subscription basis and is centrally hosted.

SaaS is typically accessed by users using a web browser

3 Vision

Empowering customers. Collective knowledge, through **Connected Knowledge.**

A unified, nationally recognised, digital customer experience. Powered by the information we hold and the technology we automate.

A digital service platform. We exploit technology to enable maximum business flexibility and offer seamless automated transactions for all., exceeding the expectations of both public and staff.

A market leading digital business service, which enables maximum flexibility, support for continuous improvement and value creation.

Our staff are our business experts and understand our organisation needs. Supported by our transformed technology function, they are equipped with the relevant skills and are empowered to continuously improve, finding opportunities and implementing solutions that can be measured using real-time information to provide better, faster and cheaper outputs.

3.1 Key Messages of the Vision

- Provide the same digital experience and channel shift for our customer internally and externally
- Recognising that data collection, storage and analysis is key to achieving our organisational aims
- The resilience of our platform becomes a measure of the resilience of our business
- Traditional IT cost base becomes indiscernible from the ongoing cost of serving our customers
- Staff become experts in our business, our customers and the use of our platform
- Specialised staff become experts in our data, turning our data into information we can use
- Create, promote and support commercial opportunities
- Technology choices, in line with our strategy, are appraised and informed by the needs of our customers
- Our data and information becomes a commercial opportunity for both our organisation and the district
- Security controls are transparent and evident from the start, with the focus on visibility not deniability

Channel Shift

Moving customer contact away from face to face and telephony to online channels including website, My Account, Social media, messaging apps (e.g. skype) and self service.

4 Our Mission

To operate an exemplary digital business service experience within a smarter, data driven council.

The main aims of our mission are to focus on serving customers not maintaining assets. To drive up mobility in the workforce and increase the level of organisational expertise while reducing the need for individual specialist IT expertise.

We will build on the past successes and drive up staff skillsets by integrating and automating SaaS solutions and reducing the reliance on Infrastructure and traditional IT skills.

Making the most of data will be a key aim of specialist staff using architecture, repeatable standards and exploitation of data to add value to all and supporting the business as a whole.

We will use the same solution for all that we do. This singularity of purpose (diagram below) will be achieved by closing the gap between external and internal demand types, closing the gap between the tools, platforms and skills as we rise to meet demand from inside and outside.

Our customers are empowered, can see their own data and self-serve.

4.1 Business Value

Three key business outcomes this strategy will create are:

1. A leaner, better and more unified customer experience
2. Improved access to information, enabling better and faster decision making for all
3. Commercial opportunities from both our innovation and the recognition it receives (from partners, industry and our peers)

5 Key Technology Outcomes

Key practical outcomes of this strategy will be:

- Being 100% Software-as-a-Service (SaaS) consumers
- Creation of a data and technology architecture team/function
- Creation of a data and information hub (Connected Knowledge Platform) for internal and external customers
- Introduction of machine learning predictions and artificial intelligence
- Practising strategic partner management and recruiting the staff it requires
- Enabling 100% of staff to work flexibly
- Enhanced network resilience and flexibility
- Enhanced security controls
- Reduction in number of 'suppliers', increase in number of 'partners'
- Reduction in applications with a narrow function, increase in number with consolidated functions
- Single identities and authentication management, consolidated into the cloud
- Retiring the use of Windows Server operating system(s) and Active Directory (see 'identity' box for more details)
- Retiring the use of the Citrix (the current technology used to provide virtual desktops for staff, rather than using desktop PCs or laptops) desktops.
- Use of email reduced significantly, replaced by in-app messaging functions
- An organisation wide strategic technology awareness programme

The citrix desktops have served us well in enabling greater flexibility, including hot desking. However they are becoming less useful in our SaaS world, and do require extensive day-to-day management.

Machine Learning

Machine learning is a type of artificial intelligence (AI) that provides computers with the ability to learn without being explicitly programmed. Machine learning focuses on the development of computer programs that can teach themselves to grow and change when exposed to new data.

(source Google)

Identity

Identity and access management (IAM) is the security and business discipline that “enables the right individuals to access the right resources at the right times and for the right reasons”.

AVDC currently use Microsoft Active Directory for basic identity management.

5.1 Singularity of purpose

Use the same tools, platforms and skills to meet demand from inside and outside. A single platform to manage all demand:

Figure 1 - Demand Confluence



As we move from the left of this diagram to the right, time moves forward. Today there is a big gap between the external demand from our external customers and the internal demand from staff. For example, a resident may want to know when they will receive their next benefit payment and a member of staff may want to see their pay slip. Today different solutions deliver these functions. Over time the same solution will deliver both requests in a similar way, via self service real time applications.

Similarly, today the IT costs are distinct from other council costs. As time moves forward these costs will align so that IT costs will be part of the cost of doing business. Each member of staff will have costs which will include the cost of any IT provision. Singularity enables cost visibility, predictability and better control.

Figure 2 - Cost Confluence

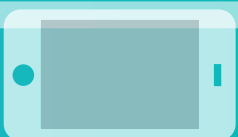




6 Strategic Technology Objectives

In-line with the overall stated strategic objectives of AVDC, the objectives for digital and technology use are:

- Provide an always-on, 24x7x365 public service, available to customers whenever and wherever.
- Continue to drive up engagement with our customers, through digital channels
- Digital services become the primary means of better understanding our customer needs (through data collection and analysis in a standardised way)
- IT as we know it disperses, to become a self-sustaining digital services team
 - ◆ Eliminating ICT asset ownership
 - ◆ Enabling AVDC to meet the needs of the district
- Making technology a profit centre and not a cost centre
- Technology is maximised to meet the commercial aims of AVDC.
- Transforming from hybrid-cloud Infrastructure as a Service (IaaS – providing virtual computing resources over the internet) and SaaS to pure cloud SaaS



7 Measuring Success

There are three key measures of success for this strategy

1. Receiving outstanding customer feedback
2. Achieving 100% software-as-a-service (SaaS)
3. All staff having ease of access to management information and data that they can use to improve our services

Other measures include:

- Our ability to execute high-priority aspects of the published roadmap
- The positive use of data to create and successfully launch new services and measurable improvements to existing services
- Presentation of actionable information to internal and external audiences
- Increased registrations and voluntary enrolment onto the digital offers by both consumers and businesses
- Our platform being nationally recognised as a model of 'commercial-for-public-good'
- Our platform being used by other organisations, as opposed to building their own, thus extending the benefit outside AVDC to benefit those living and working in the district.

Our ability to rapidly adapt the platform to accommodate new channels e.g. voice-as-a-channel (engaging with us through voice-controlled methods).



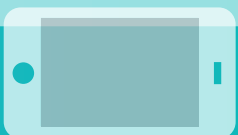
8 Principles

Overall principles that guide what we do and the decisions we make

- Understand that data underpins value
- Every purchase needs a champion
- Deliver configuration not customisation
- Be the customer
- Drive collaboration
- Be commercial-for-public-good
- Solve the hard problems to create strong opportunities

Design principles:

- One identity, one customer record
- Browser based, will run on any computer system
- Cost control and visibility
- Seamlessly interlinking services not websites
- Iteration is good
- Design for customer needs
- Security visibility as standard
- Open interfaces
- Customer to prefer to use digital
- Self service
- Upfront payment
- Identify upsell opportunities
- Digital not paper
- Process cost transparency
- Automation is the way



9 Connected Knowledge

Our strategic focus and a culture of striving for singular purpose will be enhanced by our customer's ability to use a common platform that joins all business areas, providing a single customer view and experience. This platform will over time, be indiscernible from, and even merge into, the one used to currently provide digital services to our external customers, such as will be the similarity of demand types.

Equal access to our data through the Connected Knowledge platform will drive up commercial behaviours, such as data-driven decision making and the need for measuring throughput and output.

Connected Knowledge also ensures the initial work is completed to enable us to make swift use of our information assets when, not if, the opportunities arise in the near future. For example, data collected on common demand types will enable greater automation. This will include the use of chat robots, also known as 'chat bots' (computers that can listen to customer queries, recognise the question, search the internal information and provide a spoken answer to the customer.), this can also be more easily fed into a machine learning environment for purposes of making predictions and commercial modelling.

The focus of the team(s) tasked with maintaining Connected Knowledge will be;

- Open data access
- Inter-operability/ integration
- Process automation
- Standards and continuous improvement

Rather than; individual asset management, lifecycles and commodity management, as these functions are the responsibility of the cloud SaaS provider.



9.1 The Rise of the Customer

We are well positioned to bring value to our customers.

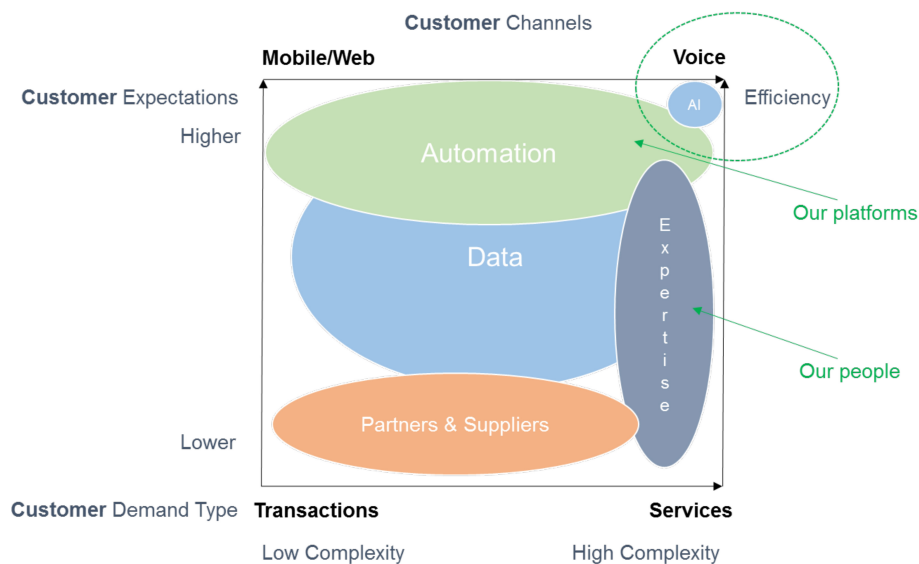
Our proven agility, innovative and commercially minded company culture and success of our last five year technology strategy, aligns well to what the market are calling ‘the age of the customer’.

The diagram Figure 3 shows alignment to the demands of today’s customer and their high expectations of a digital first experience. Complex needs (on right of picture) are met by our expert staff, but increasingly more efficient way of doing this is with voice activated services, artificial intelligence (AI) using our data, backed up by our people (our expertise).

Basic transactional demands / simple needs (on left of picture) are automated, but customers still have high expectations of these. As our customer expectations increase (at the top of the picture) increasingly more complex services (top right) will be delivered by people and AI, through a combination of online and automated chat and AI powered voice control. Whereas simple transactions (top left) will be served through mobile and web automation. Voice can also serve transactional needs.

Ultimately, AI & voice-as-a-channel will drive the highest level of efficiency (circled in dotted green below).

Figure 1 – Customer Expectations, Demands & Channels



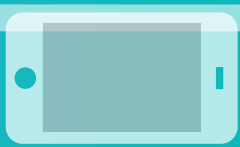
The orange sphere (bottom) is where partners add value. We will utilise partners to co-create value directly impacting customers but for less-visible, but still important, activities. An example of this would be providing Wi-Fi hotspots in our towns.

The Age of the customer

It’s all about the customer. People have more access to technology today in the form of smart phones, technology enhanced home appliances, and the internet where you can see and buy anything.

Customers expect things to be available all of the time, and expect clever, fast delivery of information.

The rise of the customer is about ensuring we are ready to meet the increasing customer demands fast enough, and being able to deal with complex queries well.



9.2 The Platform

In this case, the platform is a term used to describe a range of software solutions sitting on a pool of connected data. Cloud SaaS products provide these solutions, which have been evaluated by AVDC and integrated with the assistance of partners.

The platform value is enabled by the ability of all systems to work seamlessly together, ease of access, ease of use and continuous improvement.

Continuous improvement efforts will be focused on the ever present need to automate business processes, not on laboured customisation, building and bespoke tailoring.

- Both public and community cloud SaaS types will be considered for use in the platform
- The platform spans the entire organisation and can even be extended to partners where necessary
- AVDC will take on the roles of business as usual (BAU) platform customer support, architecture, data use/analytics, standards and policy.
- 3rd parties will be used for the roles of initial Application Programme Interface (API – a set of routines, protocols and tools for building software applications) integration and detailed technical escalations.

Types of Cloud

Clouds provide computing capability without the need to have all the infrastructure such as physical servers. A public cloud is open to all, for example Microsoft or Google email. Anyone can use it. A community cloud is where people with common interests share some computing capacity e.g. sharing parking data across Aylesbury Vale.



9.2.1 Strategic Purchases

Making technology purchases in line with this strategy is an important discipline, because this strategy aligns to pre-set organisational goals.

Straying from what this strategy defines will have a long term impact on the businesses ability to execute the roadmap in a timely way.

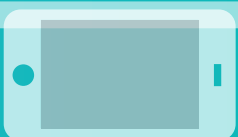
1. Purchasing criteria will stipulate minimum levels that each software (SaaS) purchase should confirm to. These criteria will need to be formulated.
2. All technology purchases will be reviewed by the technology strategy owner.
3. All existing purchases will be reviewed against this new criteria. Not to cause disruption or to prompt a re-procurement, but instead for us to have fuller understanding of our current digital 'landscape' and if it's in keeping with this strategy.
4. Tracking adherence to this standard (and the gaps, if any) will be the responsibility of the new data and technology architecture function. This enables informed decision making and drives up use and understanding of purchases.

In addition, Strategic technology purchases will each be successful when a virtual team is formed, comprising of stakeholders across the business, which will include:

- Procurement
- Partner management
- Data and architecture
- Project management



Figure 2 - Virtual Purchasing Team



Purchases will follow the summarised pattern below, as well as the principles set out in previous sections:

- **Business and financial needs being met**
 - ◆ Having a champion who understands the business need
 - ◆ Pricing model (i.e. a transparent, cloud pricing model in keeping with cost visibility)
 - ◆ Contracts compliant to the new contract clauses (data and intellectual property ownership)
 - ◆ Meets service level minimums (availability, performance, modes of support)
- **Technical needs being met**
 - ◆ Product is entirely SaaS
 - ◆ Use of well documented API's
 - ◆ Compatibility of API's with our platform(s), including the information hub
 - ◆ Browser based
 - ◆ No code or low code, absolute clarity on skill requirements
- **Security and compliance**
 - ◆ Compatibility with our chosen identity and authentication providers
 - ◆ Compatible with activity visibility and reporting mechanisms
 - ◆ Assurance level and controls in place proportionate to its use
 - ◆ General Data Protection Regulation (GDPR) impact
- **Strategic**
 - ◆ Complies with principles
 - ◆ Can't be done with existing tools
 - ◆ Enables us to consolidate other tools into it
 - ◆ Is purchased with our customers in mind
 - ◆ Doesn't require tailoring such that the real total cost of ownership (TCO) defeats the business case
- **Procurement**
 - ◆ Government Cloud Computing (G-Cloud) will be the default route
 - ◆ Contract length



With criteria in place, the business can yet again ensure business decisions are/were made based on data. Even where a system does not meet some of the criteria, it may still be chosen, but is done so based on the business being aware of and accepting its shortcomings.

The practical process of evaluation being followed ensures record keeping and continuity at important times, such as contract renewal points.

9.9.2 Applications

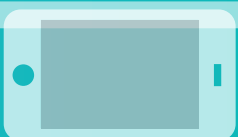
We currently make use of cloud software-as-a-service (SaaS) as well as cloud infrastructure-as-a-service (IaaS) for legacy (outdated) applications. Legacy applications are hosted on a range of servers in the Amazon Web Services (AWS) cloud virtual tenancy. The legacy applications are presented to users via a Citrix virtual desktop environment also in our AWS tenancy.

- The Citrix environment and the legacy applications create a significant challenge for AVDC due to the resources they consume. E.g. maintaining optimum running conditions, supporting users, supporting the infrastructure and importantly maintaining security and compliance.
- One significant other legacy application exists on our premises (software installed and running on computers in the council's building).

The need for rationalisations and consolidation

- We have 179 applications, from over 100 software vendors including those which are cloud SaaS related titles.
 - ◆ 60 of these have 10 or fewer users.
 - ◆ 18 are available to all users
 - ◆ 16 are available to 100 – 254 users
 - ◆ 35 are true cloud SaaS applications, accessed on the internet via a web browser
 - ◆ 66 are delivered through Citrix
 - ◆ 20 legacy applications are considered to be mission critical

(see Appendices 1 - Current Application Estate for detail)



We will:

- Use the criteria to replace legacy applications
 - ◆ Wherever possible consolidate application use cases (the list of actions and interactions between a customer and a system) into an existing or future cloud SaaS purchase
 - ◆ This could include asking partners to develop applications with narrow uses cases, to exist on an existing SaaS platform e.g. Salesforce.
- Seek off-the-shelf SaaS replacements for legacy applications where we cannot consolidate the functionality
- Seek to maximise returns on existing investments in SaaS while maintaining a balance between being seen to get better value from technology and customer need.
 - ◆ I.e. we won't use SaaS just because it's there, we will appraise each use case on its merits.
- Gradually introduce bring-your-own-device (BYOD) and over time phase out council supplied desktops, laptops, tablet computers.

9.2.3 API Management

We need systems that can talk to each other. Well designed systems have good interfaces that allow them to easily talk to other systems. We will need to manage these interfaces.

Our platform will depend on the ability of all systems to work seamlessly together to enable good integrations, which in turn creates a catalyst for process automation.

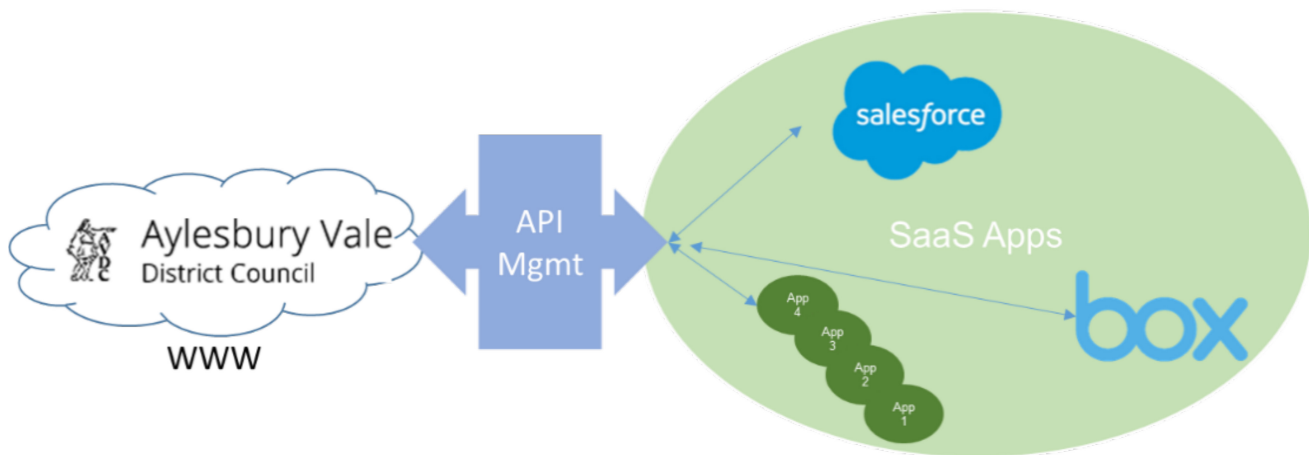
Any change to technology architecture should result in solved problems. We will have a number of SaaS applications in use, and we will need application programme interface (API) management. This is a requirement today, but will increase in scale as more applications are connected together. A better level of visibility, orchestration and policy management over how our SaaS purchases integrate is now needed. This need will only grow, to do this seamlessly and in a standardised way API management becomes a necessity.



We will:

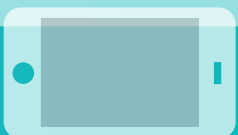
- Create a 'proof of value' trial with real world use cases
- Based on a successful outcome of the trial, commission the design of an API architecture aligned to this strategy
 - ◆ This will include the selection of cloud SaaS API management products and the implementation of such tooling
 - ◆ This will include a final decision on whether to include legacy applications or not.

Figure 3 - API Management Use Case



Challenges to this hypothesis

Whilst it is prudent to plan for API management being required it is possible it may not be needed if all the SaaS integrations co-exist on a common platform with a common API or where no-code/low-code use cases are presented on mass. E.g. Salesforce.



9.3 Data

Currently our data is in many different places and is not connected together. Going forward we will have easy ways of accessing information, and being able to report on it and use it for making decisions.

The management and use of data becomes a critical factor in the execution of this strategy and therefore meeting the stated organisational aims.

- We will use controls to keep official data within the European economic area (EEA) wherever it is possible to do so and where it is necessary to do so.
- Data is the most important and most sensitive asset we hold.

Our data is, and will continue to be, geographically dispersed on account of the distributed cloud infrastructure and SaaS architecture we are pursuing.

Previous efforts have been focused on migrating to cloud services and the use of virtual desktops infrastructure (VDI - a type of thin computing, whereby the desktop operating system exists in the cloud and is typically accessed using a more discreet user terminal). Now that this is being completed, we can start on the next evolution, focusing on the data in the cloud.

Creating a cloud data and information hub (Connected Knowledge Platform) will enable us to access our most valuable asset. This is done separately and discretely from the applications that have primacy over the data and also enables a standard toolset. This toolset will be used as the basis for data visualisations, presentation to customers via dashboards, exporting information and mining collectively.

Early value realisation will be achieved with 'proof of value' exercises being run with sample data sets. A key test of the value will be internal management information being made readily available to our stakeholders, and encouraging their input into its ongoing development. It will enable delivery of Business Intelligence to the organisation.

Key to achieving this are the following:

- Selection of SaaS Business Intelligence solution
- Formation of permanent Data and Platforms Team (described in later sections)
- Integration into existing data repositories/applications
- Internal discovery exercises with sector leads and managers into their reporting needs
- Agile and extensive data analysis



The enhanced use of data, turning it into information or knowledge we can use, will mark a significant milestone. It reflects the commitment and execution of more practical aspects of the commercial mind-set of AVDC and a tangible and visible outcome for AVDC to exhibit.

9.4 Security & Trust

We will set security visibility into the platform, with the emphasis being on knowing the data is secure, and not saying no. This enables informed decision making, saying 'no' restricts agility, innovation and business advantage.

The security policy will introduce a level of self-assurance into application usage, with clear guidance being published by AVDC for its staff. Staff will be accountable for their own actions in line with the policy. Agility is key to a sustainable business, meaning security must support this. We continue to use risk management and threat profiling to protect our data. Our level of real-time visibility will increase over time, meaning we can make better informed decisions with (more) real data.

Our staff will have one online identity, which will enable seamless transference from one application to another, via our new cloud-access-security-broker (CASB) portal and application.

Staff will only have access to business applications based on their role.

9.4.1 Trust

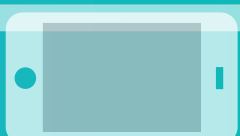
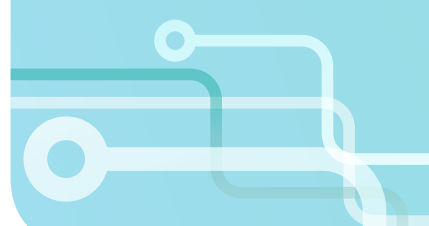
Trust will be enhanced by a stronger commitment to security transparency, vulnerability scanning by accredited 3rd parties, cross cloud boundary checking and spot checking will take place., ensuring we are able to not only evidence the effectiveness of our security visibility internally, but also to interested parties.

Until then the annual checking will be carried out as per the existing routines.

The integrated API SaaS design enables internal and external security testing to be more easily planned and executed .Most importantly, any remediation activities from these tests will thus be limited to a smaller set of components. This approach enables a significantly narrower scope to that of a traditional ICT operation which would have included; physical and virtual servers, storage systems, more complex networking, applications, hypervisors and other operating systems and appliances (and more).

Security

As our solutions will be supported by 3rd parties, our role will be to check their security is of a high enough level, not do our own internal checks.



9.4.2 SaaS Identity and Access Management

Security and compliance is of paramount importance to AVDC and no digital aims will be pursued without first being assured of the security controls in place.

Our cloud access security strategy includes:

- A SaaS identity management service
- A cloud-access-security-broker(s) (CASB)
 - ◆ This function acts a gateway for all internal users to gain access to all AVDC applications
 - ◆ Built-in to this will be security dashboards, capable of visual reporting on a per user/per app basis
 - ◆ Essential to this will be role based access control i.e. internal customers only see applications they need for their role
 - ◆ It is transparent to the users once authentication has taken place
- Multi-factor authentication for all internal customers (staff)
 - ◆ This will be based on the principle of the things you have and the things you know. I.e. a username, password and a one-time password delivered to a device, such as a pre-registered mobile phone.
- A level of mobile device and end user device management, which provides the council with assurance balanced against the risk and in view of the benefits of a more mobile and flexible workforce
- A review of the customer end user agreements, such as the Acceptable Use Policy, in-line with new strategy



Cloud Access Arbitration

Internal customers will access the platform through the CASB application on their smartphone and/or tablet and from their PC/laptop via their internet browser.

They will be authenticated against the new cloud identity service, which also requires them to provide the multi-factor authentication. This is likely to be delivered to their mobile phone via text message, but the system can also generate a 'onetime' password.

Once authenticated, the user will be presented with the councils cloud SaaS applications based on their role, defined using the rules about who can access what. The system brokers their connection to the SaaS applications, enabling visibility and therefore reporting/alerting on a detailed and granular basis.

There will be legacy applications incompatible with the CASB initially, but still compatible with the identity service. Shown immediately below as 'Phase 1', these applications (apps) will be phased out in line with the roadmap. Over time only fully compatible applications will remain, shown in the 'Phase 2' illustration.

Figure 4 - SaaS Access Arbitration Phase 1

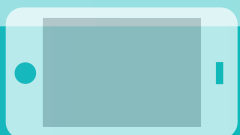
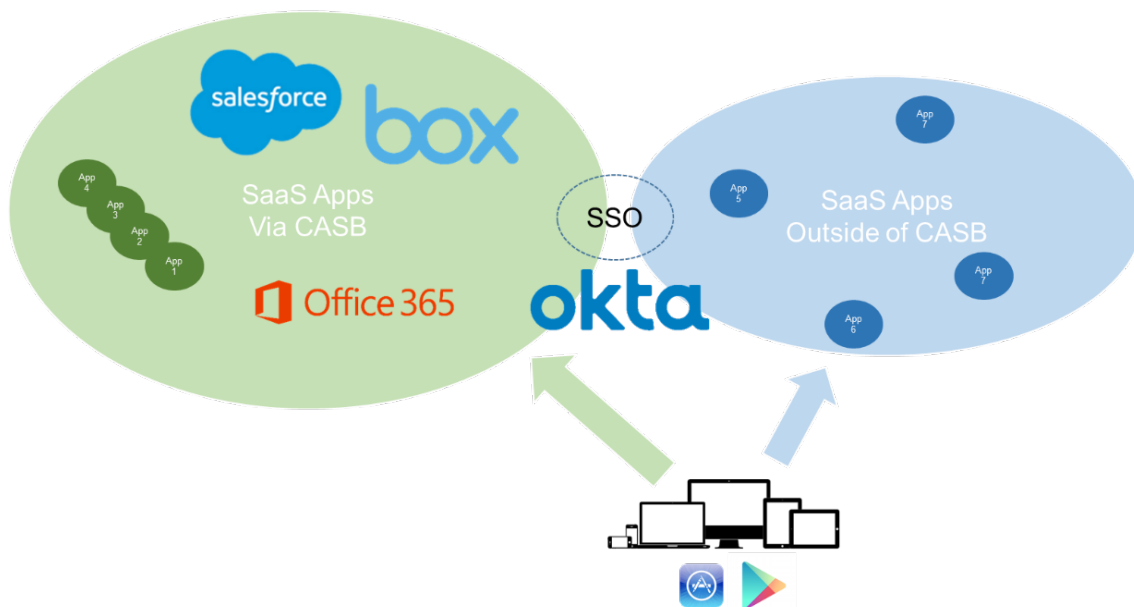
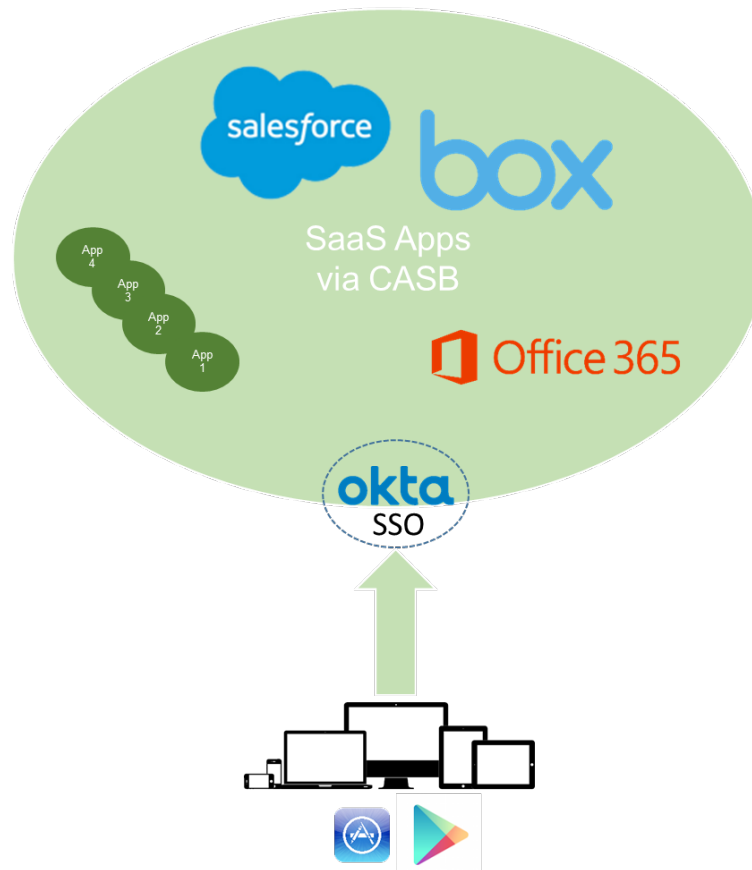


Figure 5 - SaaS Access Arbitration Phase 2



9.5 Server Infrastructure

The use of physical and virtual server assets that currently underpin the platform will be phased out.

This will be made possible as the applications are transferred to SaaS.

- Currently the council maintains Citrix and Windows application server environments hosted in virtual datacentres, in Amazon Web Services (AWS).

These will be transformed / transferred into SaaS services, in line with the key outcomes set out by this strategy.



We will:

- Phase out the Windows Server operating system
- Phase out use of Citrix desktops and servers, which may mean finding a cloud platform alternative in the short-medium term, as an interim solution.
 - ◆ This will reduce the burden of maintaining Citrix infrastructure, but the burden of application maintenance mostly remains during this interim period.
- Phase out Active Directory. Once it is only being used as a means of authentication for users and no services or servers rely on it, the identities can be fully migrated to the yet to be chosen SaaS identity management service

9.6 Connectivity, Telecoms & PSN

We will re-procure and redesign our wide area network, to better meet the needs of this strategy.

The PSN network connectivity we make use of is part of the existing contract, as are some other bundled services.

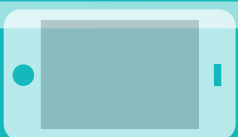
Today's issues include:-

- The current cost is competitive only when compared to services that also do not meet our needs.
- We need better resilience
- We need a partner to first take ownership of transition and then design our new dis-aggregated network (and implement it).

Network

Currently our IT network is made up of a Wide Area Network (WAN) that connects all our sites together, and, Local area networks (LAN) at each of our sites. Today to work we sit in the Gateway, access a desktop in Dublin, connect back to London, over the Bucks network to the internet.

Going forward, we will just connect via a browser over the internet to the applications we need to access.



We will:

- Replace the internet connectivity with dis-aggregated model, placing less reliance on the current hub and spoke layer 3 network model, focusing instead on providing the shortest, fastest path to the internet. For internal customers.
 - ◆ This means a far less complex WAN, with less dependency on our neighbours and their chosen providers
 - ◆ Seek a supplier who can suitably provide PSN Assured connectivity, Internet filtering, and resilient Internet connectivity. Which is suitable for mission critical Internet based services.
- Retain our LAN infrastructure in key locations but seek to renew and/or re-procure the LAN management contract on a fully managed basis
 - ◆ The LAN could, in time, be used solely for the tenants of the Gateway Centre
 - ◆ End-of-life equipment will be replaced with the cheapest supportable equivalent, that still meets security and compliance requirements but does not need to be as 'fully featured' as the current equipment. As AVDC has a reducing set of network requirements. In line with this strategy
- Move to wireless-by-default model, to better accommodate bring-your-own-device (BYOD), mobile telephony and reduce the need for wires to desks
- Continue to be PSN Assured compliant, but reduce the scope over time, as PSN use cases become more narrow and discreet.
- Phase out AWS Direct Connect. However it will be renewed/re-procured in the short term and later phased out. As our need for it reduces in line with the server estate in AWS reducing.
- Enable workers to take and make calls at times and from places they deem appropriate and from their own devices.
 - ◆ I.e. make it a necessity to have connectivity to carry out such tasks, but not dictate that such connectivity requires a desk in The Gateway Centre or other council locations.
- Continue to provide free Guest Wireless access, but re-evaluate the current provision against the backdrop of growing demand for wireless, by internal customers.



Figure 6 - Current High Level Hub and Spoke

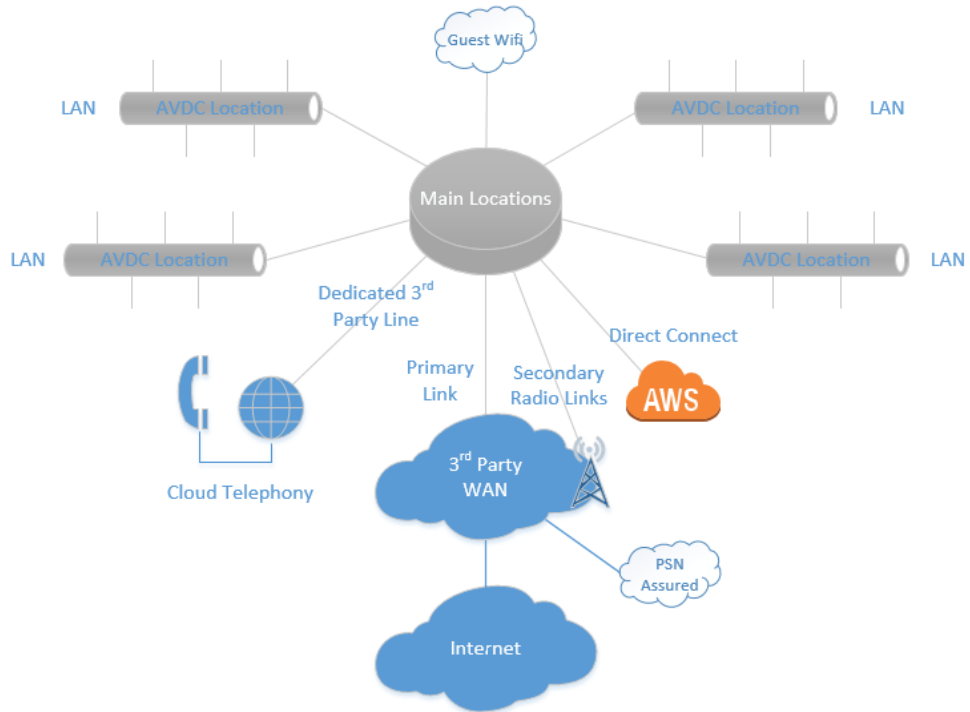
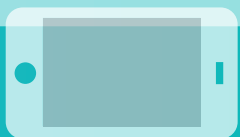
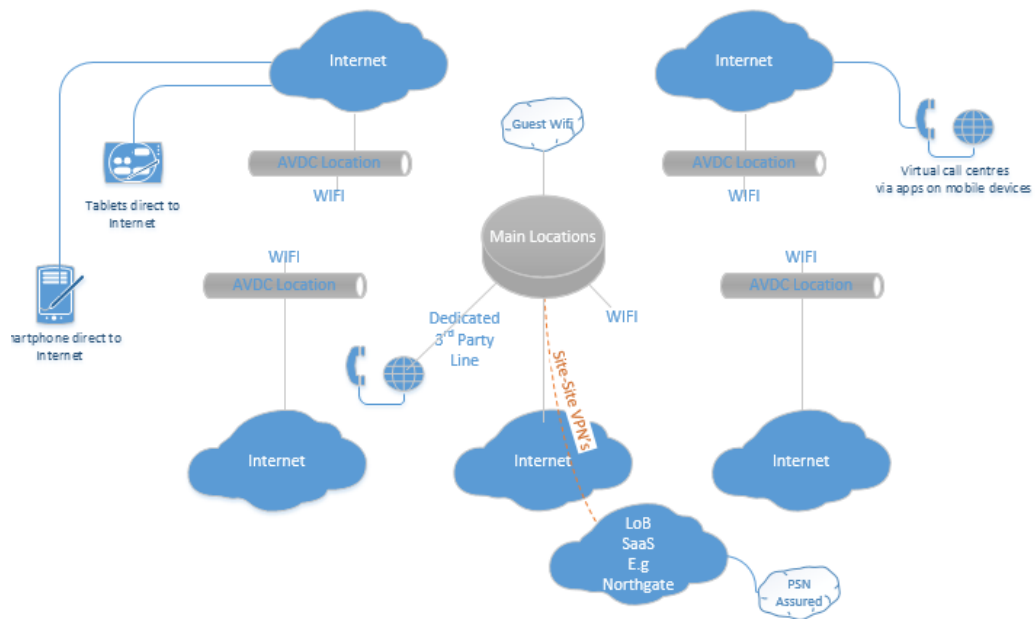


Figure 7 - Dis-aggregated Internet Access Model & No LAN



9.6.1 Mobile Telephony

We encourage a more mobile workforce, with this comes the need for a telephony solution that supports and encourages mobility.

Bring your own device (BYOD) is the practice of allowing the employees of an organisation to use their own computers, smartphones, or other devices for work purposes. With BYOD staff will use their own devices, such as phones, tablets, laptops chromebooks, Macs, whatever comes along, supporting their own devices and replacing their own devices. Staff will use their own device working from anywhere, whether in the office, at home or in the field.

Our new BYOD policy will extend to mobile phones. All staff that require a dedicated number/extension will have the (yet to be) chosen software phone (softphone app) loaded onto their devices. This will enable the same functionality, if not more, which staff currently expect from in the office.

Thus further enabling a seamless experience, regardless of location, as long as Internet connectivity is available.

- BYOD for mobiles will be a gradual, 'phased approach', introduced over a period of 1-2 years.
- No new investments in hardware desk phones
- All council calls will be routed in and out of the cloud telephony solution, via council numbers that are only available while the softphone apps are online
 - ◆ This enables (personal) number privacy

Bring Your Own Device

Managing The BYOD Revolution

Thousands of organizations around the world are going BYOD to save money and improve productivity by allowing more end-users to use their own personal devices in the office, classroom or out in the field.

BENEFITS OF BYOD



(Source: Bay Computing : BYOD and Your Business: Why BYOD Policies Are Key to Success by Lisa Meleney on May 8, 2015)

We will:

- Use cloud based telephony solution which support this activity with little or no customisation for call centre and other staff
- Encourage and even incentivise the use of own phones (as part of the BYOD policy)
- Over time, only supply smartphones by exception, i.e. in a small number of situations, to be laid out in the forthcoming BYOD policy
 - ◆ Supply a phone where we know there is requirement for a permanent phone number, for emergency use.
 - ◆ Retain a small stock of temporary 'loan' devices. For such things as temporary workers and unforeseen eventualities
- Not renew the current mobile phone contract. Instead allow it to rollover for a period of no more than 6mths from this document's publish date
- Use technology that allows 'secure hand-off' of payment details to assured payment systems
 - ◆ Thus ensuring payments are not taken over the phone
 - ◆ Provide new guidance to staff on the types of activities and behaviours we expect
- Investigate the viability of providing a level of subsidy for the cost of the bandwidth (an incentive to use own device)

One outcome of this telephony strategy is that mobile telephony becomes the new normal and that phones are no longer synonymous with a person's own desk or the need to be in the 'office. Home working will be encouraged.

9.7 Non-Strategic Systems

Some systems exist that do not warrant the time, effort and expense required to transform them. This is because these systems are functioning to meet a narrow need, not related to our strategic aims. Two examples of such systems are:

- CCTV Systems
- Door Access Systems

In these cases, suppliers will be sought to take ownership of the daily operation, maintenance and upkeep of such systems. These systems will not be 'transformed' by AVDC, instead they will continue operating but in the hands of suppliers who are selected based on competitive tender.

The example systems are required to securely run physical sites owned by the council such as the Gateway and are closely aligned to day-to-day running of that facility. It is possible that in the future that the Gateway facilities management was also outsourced or run at 'arm's length' and that space and services would be bought back by the council.

The desired outcome is that we are able to better focus on meeting organisational aims. Using suppliers on fixed price, fixed term contracts to operate systems not-aligned to our strategic aims.



10 Strategic Technology Operating Model

We must create teams, roles and make data-driven decisions that reflect the organisational aims.

We will gradually re-organise our existing ICT delivery teams as related roadmap milestone items are achieved. This means the creation of new teams and roles.

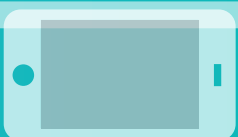
A two phased approach will be taken to this transformation of the ICT functions.

- Phase 1 – Changes to role descriptions and reporting lines, this is to be completed in first calendar quarter (CQ1) 2017.
- Phase 2 (detailed below) - Will be completed as and when dependant aspects of the technology roadmap are completed. I.e. Phase 2 can only happen upon successful completion of Phase 1 and subsequent completion of various linked items on the roadmap.

Phase 2 Summary:

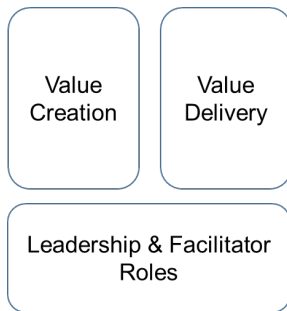
This strategy outlines the need for;

- A new role, reporting to the Executive Team, to oversee the execution of this strategy
- The creation of two new digital and technology teams
 - ◆ A Digital Support Team and
 - ◆ A Digital Data and Platforms Team
- The creation of a Strategic Partner Management Role within this new structure



Within the new teams, staff are assigned by their primary customer value. Either Value Creation or Value Delivery.

Figure 8 - Value Creation & Delivery

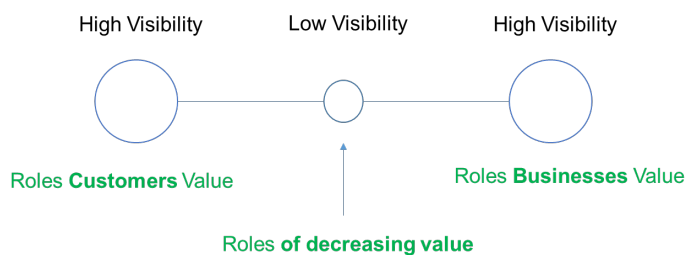


- The Digital Data and Platforms Team will concern itself with the standards, design, use of data and roadmap for the Connected Knowledge platform. This will be the value creation team.
- The Digital Support Team will arbitrate, broker and support customers through the benefits of the digital experience. This will be the value deliver team.

AVDC will invest in roles that create and deliver value to customers. Roles that are highly visible to customers and the business, rather than roles pre-occupied with the need to maintain assets and infrastructure, these roles are not typically visible to either end of the spectrum (figure 11).

As key milestones are achieved in the technology strategy, legacy infrastructure support roles (and others) can be transformed and better aligned to the two teams above. The new leadership role leading and commanding our council to execute the ambitious aims of the technology strategy, core to this is the need for strategic partner management with which AVDC can integrate high value commercial capability into its offer.

Figure 9 - High Visibility, High Value Roles





10.1 Model

There is no appetite to build an in-house, hands-on, technically led ICT function. There will be no assets to service in future, only the data the authority holds and the SaaS it is using to deliver the platform and vision. The figure below shows the new structure interacting with partners, peers and wider AVDC.

Figure 12, below illustrates that there should always be a greater number of staff focused on meeting customer demand (at the front-end) versus the number of staff at the back-end working on incremental development of data and product integrations. These two activities and their respective staff must however be tightly integrated culturally and practically, to create a high value feedback loop.

The strategy we already employ is about meeting customer demand rapidly and increasing the number of request types being resolved 'right first time', whilst striving for more self-service requests being met through digital means.

Figure 10 - FTE Ratios

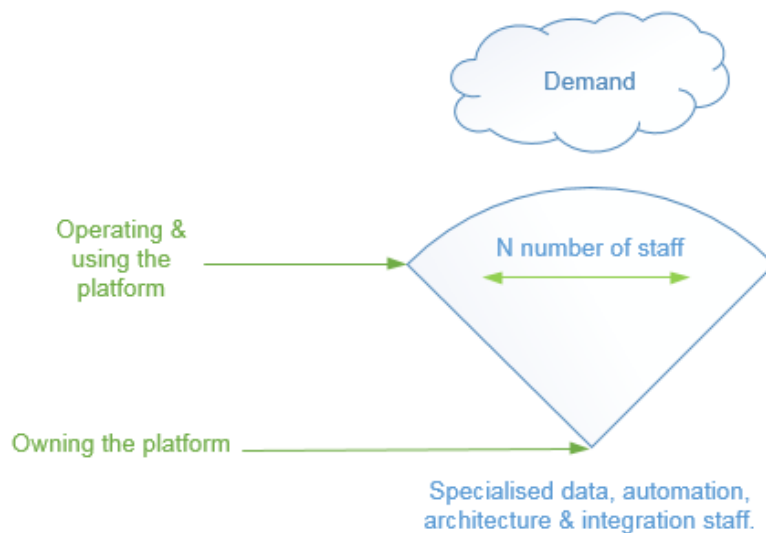
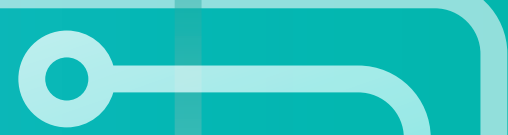
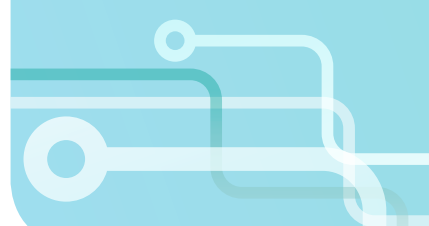


Figure 10 below illustrates digital support staff working in parallel with existing Customer Fulfilment digital staff. Over time, harmonising customer demand types, the tools they use and other working practices where relevant and not arbitrarily. There is clear potential for these teams to merge in the future, dependant on some major milestones being completed in the wider technology strategy.

As the vision takes shape a dotted line (arrowed feedback loop below) enables pooling of knowledge and the two functions get closer both logically and practically as the organisation and its customers change and adapt to a singular digital experience.

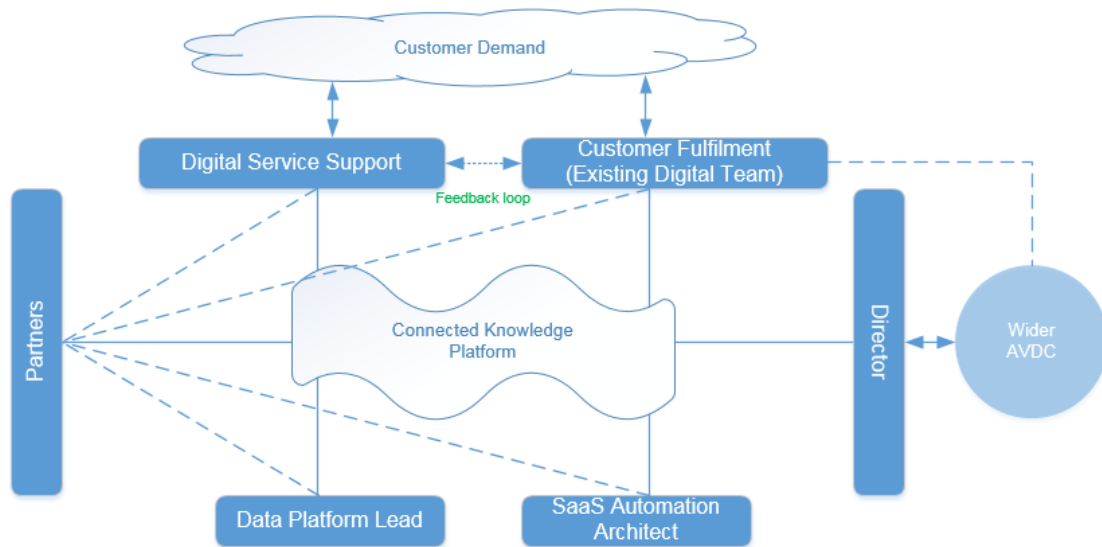
Front Office & Back Office

For instance you could have a ratio of 2.5 : 1 between front officer staff and back officer staff to meet customer demand



Partners (left on the figure) are small in number but key to the mission. Front-line teams and back-end teams are in regular contact with them, however the request types are different in nature, from support issues on the front-line to integration and interoperability queries for the back-end. Escalations and strategic decisions are fed back to AVDC either through the new structures reporting lines or in the case of Customer Fulfilment through the existing Head of Customer Fulfilment. Regular forums and communications will take place where processes, successes and failures are discussed and replayed to ensure iteration is not just possible but baked into continuous improvement and again to ensure no gulf is created between front and back-end roles.

Figure 11 - Logical Model





10.2 Key Operating Model Outcomes

The key outcomes of this transformed operating model are:

- Functional roles better aligned to strategic aims
- Roles aligned to demand types and value forms e.g. Creation or Delivery of Value
- Ownership of technical strategy and its execution
- Less visible roles are transformed to highly valued and visible roles, over time.
- Creation of roles responsible for horizon scanning, architecture, standards and automation.
- Creation of roles responsible for collection, processing and presentation of data
- Partners and suppliers are managed and selected strategically
- Partners and suppliers are used for low value, low visibility commodity and asset servicing, the need for which reduces over time.
- Partners are preferred for strategic aspects
- Customer Fulfilment and Digital Support become one, in due course.

10.3 Leadership

AVDC must pursue both commercial and efficiency opportunities. Technology facilitates both aims.

The approach must be consistent both in tone and methodology. For this to be executed as such, an authoritative position should be present to lead the transformed IT function and its commitments. A role shall be created to reflect these responsibilities and fill the current gap.

Figure 12 below illustrates a scenario, whereby a leadership role is required to appraise value, risk and opportunity in technological advances in relation to our strategic and tactical aims. It shows the gap existing between high-value-high-risk opportunities to exploit a product or technology and the planned projects on the published roadmap.

Managing this gap and finding the right balance between risk and reward will be a key responsibility of the leadership team and any new leadership roles.

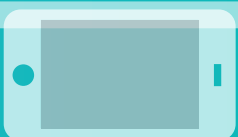
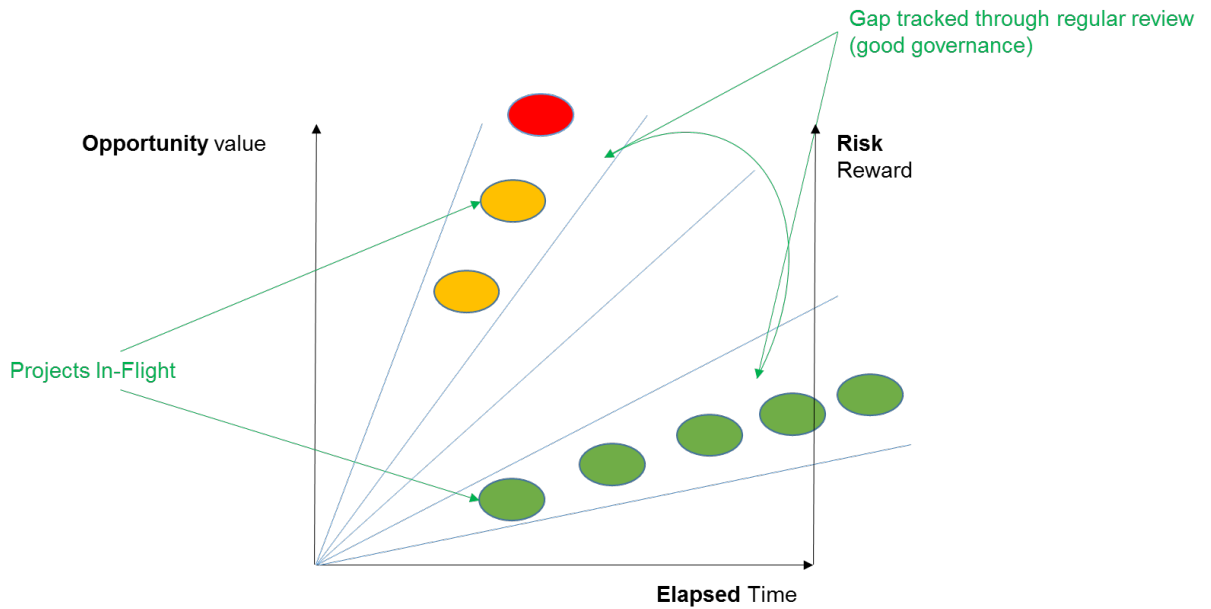


Figure 12 - Bridging the Gap



The following regular activities will be initiated:

- **'Horizon scanning'**
 - ◆ Regular briefings from presenters; including peers from the public sectors, commercial enterprises, vendors and thought leaders. Helping to understand trends, market conditions and opportunities.
- **User engagement**
 - ◆ Inviting more voluntary participation, feedback sessions, trials and piloting
- **Opportunity tracking**
 - ◆ Closely related to horizon scanning activities, the team will maintain a list of technology opportunities. For the purposes of tracking, and possible inclusion on the roadmap.



11 Opportunities in Technology

The technology areas identified for immediate/regular review are:

- Open data,
- Information hubs and data analytics,
- Artificial intelligence,
- Co-created intellectual property,
- IoT (Internet of Things) and Smart Cities, and
- Any technology that enables better use of existing data and its presentation to consumers. E.g. augmented reality via smart phones and other information overlays.

Technology initiatives already underway:

Artificial Intelligence (AI) - Types of AI are in use today, both in enterprise and the home. These are however narrow applications of AI, e.g. an online chat robot (also known as 'chat bots') used to answer frequently asked questions, this example aligns well to some AVDC customer transactions. There are likely to be more.

- For the reason stated, AI will be chosen as a key area for further research with the specific aim of producing a proposal on its possible uses, against specific pre-defined AVDC use cases.

Shifting channels – It is possible that 'the web' becomes a legacy form of digital presentation, and that the internet becomes nothing more than a means to transmit/transit data. This will happen as new means of accessing services, like voice control, gain popularity. Voice control is a means by which our customers may wish to engage with us in the mid-long term. For this reason we are expecting in 3+ years, technologies like Amazon Echo and Apple Siri to be a viable platform by which we can meet some demand types.

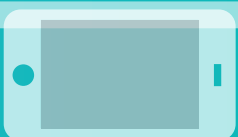


Figure 13 - Amazon Echo with AVDC App. 'Voice-as-a-channel'



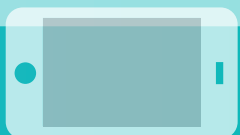


12 Connected Knowledge Landscape

Figure 14 - Connected Knowledge Landscape

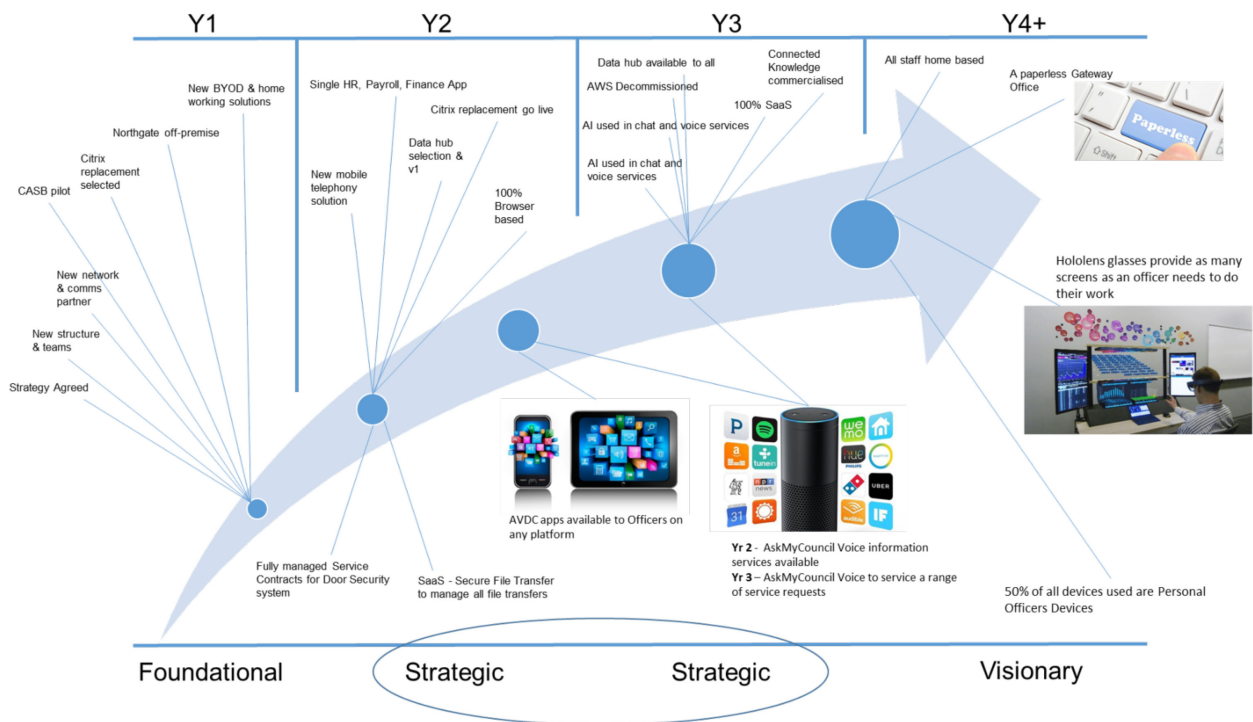


This is the framework that we envisage how all the elements of Connected Knowledge are grouped and joined



13 High Level Roadmap

Figure 15 - High Level Roadmap



These are some of the key elements on the future roadmap that will make up the delivery of this strategy

14 Appendices

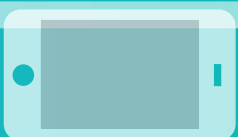
14.1 Appendices 1 - Current Application Estate

Application name	Application version	Type	Hosted by
7Zip	7Zip	On Premise - AWS	AVDC
8x8 Directory	8x8 Directory	SaaS	8x8
Abintegro	Abintegro	SaaS	Abintegro
Acorn Profiler		On Premise - AWS	AVDC
Active Directory		On Premise - AWS, AVDC	AVDC
ActiveSync		SaaS	Microsoft
ADFS		On Premise - AWS	AVDC
Adobe	Creative Studio 6	On Premise - AWS	AVDC
Adobe	Creative Cloud Applications	On Premise - AWS	AVDC
Adobe	Photoshop Elements 9	On Premise - AWS	AVDC
Adobe	Acrobat 10	On Premise - AWS	AVDC
Adobe	Reader 10	On Premise - AWS	AVDC
Adobe	Acrobat Pro		
Adobe	Photoshop 64Bit		
Adviser Net		On Premise - AWS	AVDC
AirWatch		End of life	End of life
Amazon Administration		IaaS	AWS
Amazon Web Services		IaaS	AWS
Appsense	Environment Manager	On Premise - AWS	AVDC
Appsense	Administration	On Premise - AWS	AVDC
Aptos (Data only)		End of life	End of life
Arc Cataloge	9.3	On Premise - AWS	AVDC
Arc Cataloge	10.3	On Premise - AWS	AVDC
Arc Map 10.3	10.3	On Premise - AWS	AVDC
ArcGIS Desktop			
ArcGIS Desktop Admin			
ArcMap 9	9.3	On Premise - AWS	AVDC
Ash	e-Go Recovery	On Premise - AWS	AVDC
Ash	Administration - Security	On Premise - AWS	AVDC
Authoring Tool NEW		On Premise - AWS	AVDC
Autocad		On Premise - AVDC	AVDC
AVDC-VERINT			
Balvin (Fuel pump system)			
Bartec R12	Bartec R12		
Bill Analyser (BT)		On Premise - AWS	AVDC
BOX (Edit)		PaaS	BOX
BOX (MS Office Plugin)		PaaS	
Business Objects (ITrent)			
Business Objects (Northgate)		On Premise - AWS	AVDC
CD View		On Premise - AWS	AVDC
Chrome for Business		On Premise - AWS	AVDC
Citrix	Citrix XenAPP 6.5	On Premise - AWS	AVDC
Citrix	Citrix XenDesktop 7.6	On Premise - AWS	AVDC
Citrix	Citrix XenAPP 5.0	On Premise - AWS, AVDC	AVDC
Citrix	AppCentre	On Premise - AWS	AVDC

Application name	Application version	Type	Hosted by
Citrix	Studio	On Premise - AWS	AVDC
Citrix	Director	On Premise - AWS	AVDC
Citrix	XenServer 6.2		
Citrix	XenCentre		
Cloudbridge (Arcus Box)			
Collective (Bartec)	Bartec R6	On Premise - AWS	AVDC
Condeco		SaaS	Condeco
Connect		SaaS	Axis12
CoreFTP		On Premise - AVDC	AVDC
Corel Draw		End of life	End of life
Crystal Report Writer 2013		On Premise - AWS	AVDC
Dameware		On Premise - AWS, AVDC	AVDC
Dashboard Powerpoint 2010			
DCTM		On Premise - AWS	AVDC
Desksmart	Intranet Payment	On Premise - AWS	AVDC
DHCP			
DNS	External		
DNS	Internal		
Energy Manager (Systemslink Energy)		On Premise - AWS	AVDC
Energy Manager folder			
Enterprise Car Club			
Express	Management	On Premise - AWS	AVDC
Express	Register	On Premise - AWS	AVDC
Ezytreev		On Premise - AWS	AVDC
Fibutex PC			
File-Aid		End of life	End of life
Fimms		End of life	End of life
FTP			
Galileo		End of life	End of life
Gandlake		End of life	End of life
GCSx Firewall			
Geocoder 63			
Harvest		SaaS	Harvest
HelioXD		SaaS	Annodata
Hornbill		SaaS	Hornbill
ICE Chat		On Premise - AVDC	AVDC
Iclipse	Back End Database	On Premise - AVDC	AVDC
Iclipse	Front End Client	On Premise - AVDC	AVDC
Idea		On Premise - AWS, AVDC	AVDC
IDOX CICO		On Premise - AWS	AVDC
IDOX EDMS		SaaS	IDOX
Internet Explorer		On Premise - AWS, AVDC	AVDC
iTrent		SaaS	Midland HR
iWorld		On Premise - AVDC	AVDC
IWS		On Premise - AWS	AVDC
Java		On Premise - AWS	AVDC
Kalamazoo		SaaS	Vendor
Kantech		On Premise - AWS, AVDC	AVDC
Kitty		End of life	End of life
Landlord Portal			
Laserform		On Premise - AWS	AVDC
Learning Pool		PaaS	learningpool
Lisson Grove QBC			



Application name	Application version	Type	Hosted by
LocalView General - Mavis			
Locata		SaaS	Locata
LogSmart	External - Payments	On Premise - AWS	AVDC
LogSmart	Internal - Payments	On Premise - AWS	AVDC
LogSmart	Administrators	On Premise - AWS	AVDC
LSS 3D Vantage			
LSS Elite			
McAfee Antivirus		On Premise - AWS, AVDC	AVDC
Metrel PatLink		On Premise - AWS	AVDC
Microsoft ISA			
Microsoft Office	Visio	On Premise - AWS	AVDC
Microsoft Office	Access	On Premise - AWS	AVDC
Microsoft Office	Excel	On Premise - AWS	AVDC
Microsoft Office	Outlook	On Premise - AWS	AVDC
Microsoft Office	Powerpoint	On Premise - AWS	AVDC
Microsoft Office	Project	On Premise - AWS	AVDC
Microsoft Office	Word	On Premise - AWS	AVDC
Microsoft Office	Word 2010		
Microsoft Office	Project 2013		
Microsoft Office 365	OWA	SaaS	Microsoft
Microsoft Office 365	Intune	SaaS	Microsoft
Microsoft Office 365	Administration	SaaS	Microsoft
Microsoft SharePoint		End of life	End of life
Microsoft SQL Server		On Premise - AWS	AVDC
Microsoft Windows	7 Professional	On Premise - AVDC	AVDC
Microsoft Windows	Server 2012 R2	On Premise - AWS	AVDC
Microsoft Windows	Server 2008 R2	On Premise - AWS	AVDC
Milestone Protect CCTV		On Premise - AVDC	AVDC
Netcall			Netcall
Netsweeper		SaaS	Update
NEW ASH TEST			
One Drive		SaaS	AVDC
Oracle		On Premise - AVDC	AVDC
OrgPlus 2012		On Premise - AWS	AVDC
OS Mastermap Data Converter			
Outlook for Ezytreev			
P11D		On Premise - AWS	AVDC
Pencil Project		On Premise - AWS	AVDC
Performance Plus	Standard	On Premise - AWS	AVDC
Performance Plus	Admin	On Premise - AWS	AVDC
PGP Encryption		On Premise - AVDC	AVDC
Planning Portal		SaaS	PlanningPortal
Policy Hub		SaaS	Hiteclabs
Productivity Suite License Manager			
ProSteel,Super Beam,EuroBeam		On Premise - AWS	AVDC
Public Access		SaaS	IDOX
Quark Express 7		End of life	End of life
RAG			
Reach SMS		SaaS	Reach
Remote Desktop			
Renovator		On Premise - AWS	AVDC
Repliweb			



Application name	Application version	Type	Hosted by
Safend		On Premise - AVDC	AVDC
Safenet Management		SaaS	Safenet
Salesforce	Customer Fulfillment Team	PaaS	Salesforce
Salesforce	myaccount	PaaS	Salesforce
SFTP			
Shaw Forms		On Premise - AWS	AVDC
Skeddly		SaaS	Skeddly
Sketch Up		On Premise - AVDC	AVDC
Skype		On Premise - AWS	Microsoft
Smart Sheet		SaaS	Smartsheet
SMTP			
Spur Parking		SaaS	Xerox
Steve Grimmer DTI			
Symantec Backup Exec			
Systemslink Energy (Energy Manager)		On Premise - AWS	AVDC
TeamViewer		SaaS	AVDC
Tech One		SaaS	technologyonecorp
TEST ArcMap			
Timebase	Admin	SaaS	Timebase
Timebase	User	SaaS	Timebase
Uniflow	MomClient	SaaS	Annodata
Uniflow	Admin	SaaS	AVDC
Uniform		SaaS	IDOX
VisionApp		On Premise - AWS	AVDC
Vodafone mail			
VPN			
VT Multiclient		On Premise - AWS	AVDC
Websmart	AWS-ITWSRV01	On Premise - AWS	AVDC
Winzip		On Premise - AWS	AVDC



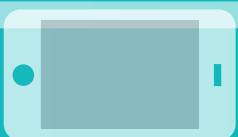
Summary information

Total Apps	Known Types	Count	AVDC Hosted
	SaaS	32	#
	On Premise - AWS	67	
	On Premise - AWS, AVDC	7	
	On Premise - AVDC	12	
	IaaS	2	
	PaaS	5	
	End of life	10	
	Awaiting Assessment	44	

4.2 Appendices 2 - Commercial and IT Principles

Commercial Principles

- Work in a Commercial Way based on AVDC Behaviours Framework
- Utilise knowledge of our customer to provide services across the organisation and ensure services are designed from the customers perspective
- Provide a single and informed view of our customers
- Own the customer relationship regardless of customer delivery model
- Support organisational flexibility from start up to maturity
- Create empowered and appropriately skilled and equipped staff and teams
- Enable and encourage upsell opportunities
- Encourage 'up front' payment
- Understand demand and cost of delivery
- Maximise self-service and automation for all processing



Commercial IT Principles

- Provide anytime, anywhere end user focused, easy to use services and systems for customers and staff
- Automate customer interaction, test with end users and enable continuous improvement
- Remove complexity
- Provide standard solutions
- Be consistent in design
- Ensure service management, not equipment provision
- Provide standard, predictable, user based costs
- Provide a scalable, agile platform for the future and be horizon scanning
- Consolidate suppliers into a small set
 - ◆ Consider the benefit of whole, and minimise specialist solutions
 - ◆ Each project doesn't require a financial case, but must have a business case
- Buy not build, sourcing expertise from the market and internal resources
- Ensure systems have open interfaces
- Ensure solutions meet security standards
- Ensure good information management and provide single, logical data model

14.3 Appendices 3 - AVDC Objectives and Principles

Aylesbury Vale District Council

Our Vision

"To secure the economic, social and environmental wellbeing of the people and businesses in the area"

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Aylesbury Vale District Council

Customer Principles & AVDC Values

We will:

Provide a great service every time, meaning:

- We will listen to our customers, treat them as we would want to be treated and recognise individual needs.
- We will always leave the customer with a good impression of ourselves and the Council
- We will deliver our promises on time and keep the customer informed of progress on their enquiry.

Be open, trustworthy, innovative and efficient, meaning:

- We will go the extra mile for customers and take personal responsibility for making things happen.
- We will communicate clearly with our customers, in line with our customer care standards and make it easy for them to contact us and get the services they need.
- We will be open and honest in our dealings with customers, and willing to learn from mistakes.
- We will look for better and more cost effective ways of doing things and be open to ideas and challenge.
- We will look for opportunities to involve local people and communities in decisions where appropriate.

Aylesbury Vale District Council

Strategic Objectives

- Create brilliant commercial offerings, which our customers value, in order to profitably generate income
- Understand our customer needs and use every opportunity to gain a better understanding of them
- Make the difference, and be trusted, reliable and respected by our communities
- Make our core services as efficient as we can, bridging the £5m gap in funding
- Be an ambitious, innovative and efficient customer focused organisation, available online 24 x 7 x 365

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Aylesbury Vale District Council

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15 External References

None used.



16 Glossary of Terms

Active Directory: Identity and access management (IAM) is the security and business discipline that 'enables the right individuals to access the right resources at the right times and for the right reasons'. AVDC currently use Microsoft Active Directory for basic identity management.

API management: 'Application programme interface' - a set of routines, protocols and tools for building software application interfaces. These interfaces will need to be managed to ensure that the data is moving effectively between the applications.

Augmented reality (AR): a less immersive experience where digital information is overlaid onto real or digital artefacts. E.g. digital camera images with information transposed onto them. For example Google Maps satellite images with hints about your nearest points of interest (restaurants, cash machines etc.)

Bring your own device (BYOD): the practice of allowing the employees of an organization to use their own computers, smartphones, or other devices for work purposes

Cloud strategy: storing and accessing data and programmes over the internet rather than on local hard drives and servers

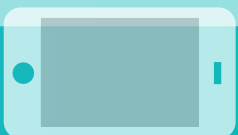
Cloud Access Security Broker (CASB): a software tool or service that sits between our on-premises infrastructure and the cloud provider's infrastructure allowing us to extend the reach of our security policies beyond our own infrastructure. CASBs allow better control, visibility and management of access to applications through a 'portal like' experience.


Community cloud: A cloud type, with similar functionality to public cloud but is used only by a community of like-minded and/or similar organisation types. In this context community cloud is likely to be local government customers using a common platform, such as a cloud software solution which is exclusive to the public sector.

Connected Knowledge platform: a digital platform that pulls together into one place or 'hub' integrated data and intelligent systems enabling us to properly integrate and automate transactions for all our customers. Also know as 'data and information hub'.

Digital landscape: the framework within which we envisage all the elements of Connected Knowledge are grouped and joined

Infrastructure as a Service (IaaS): a form of cloud computing that provides virtualized computing resources over the Internet





Legacy applications: applications that are outdated and need to be phased out

Machine learning: a type of artificial intelligence (AI) that provides computers with the ability to learn without being explicitly programmed. Machine learning focuses on the development of computer programs that can teach themselves to grow and change when exposed to new data

Platform: a range of software solutions sitting on a pool of connected data, usually online

PSN: Public Services Network, the framework for delivering secure connectivity for (and on behalf of) public sector organisations and suppliers

Self-Serve: also known as web self-service is a type of electronic transaction that allows customers to access information and perform routine tasks over the Internet, without requiring any interaction with a member of staff

Software-as-a-service (SaaS): where software is licensed on a subscription basis and held for us by an external partner

VDI: Virtual desktop infrastructure, a type of thin computing, whereby the desktop operating system exists in the cloud and is typically accessed using a more discreet user terminal.

Voice as a channel: an emerging way of communicating where customers will use voice control to engage with us

