West Berkshire Council
ICT & Digital Services Strategy 2017 - 2020

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0.7	08/05/2017	Included more detail into Delivery Activities table (Section 11)	

This version of the strategy is not for publication externally

West Berkshire
C O U N C I L

Contents

1. Foreword by the ICT Portfolio Holder and the Chief Executive

ICT Portfolio Holder, Cllr Dominic Boeck

West Berkshire Council has for many years deployed information and communication technology (ICT) to aid the delivery of effective, high quality and cost-effective services to its citizens, customers and service users.

Recent investment in West Berkshire's broadband infrastructure means that the district will by the end of 2017 have the best superfast broadband coverage in Berkshire and some of the best in the United Kingdom.

This excellent connectivity provides the district with tremendous social and economic opportunities as well as allowing the Council to further develop how it communicates and interacts with its public.

This new 3-year strategy combines, for the first time, the Information & Communications Technology strategy with a Digital Services strategy.

This strategy sets out how we will develop the Council's service delivery to meet people's heightened expectation that information and services should be available at the 'touch of a button' 24x7, whilst recognising the constraints imposed by reduced Government funding.

Chief Executive, Nick Carter

Digital technology is now an everyday part of our lives and has transformed the way we all live. We are now connected to each other in a way few of us could have imagined 30 - 40 years ago.

Digital technology has also had a profound impact on how the Council carries out its business. Letters and telephone calls are now increasingly being replaced by email, texts and the use of social media. This strategy recognises that but goes further recognising that digital technology also requires a fundamental rethink in how we design our services.

Technology is not something that just sits alongside what we do, it effectively should completely reshape it. In the same way that technology has transformed our lives so it needs to transform the way in which the Council plays its own role in supporting and working with our own residents.

2. Executive Summary

2.1 West Berkshire Council is dependent upon Information and Communications Technology (ICT) for most of it day-to-day interactions and transactions with its citizens, customers, service users, partners and suppliers. Therefore it is extremely important that the ICT infrastructure and systems are continually maintained and developed to ensure they remain fit-for purpose for this important role and that are affordable within shrinking Council budgets.

2.2 Continued technological advancement, such as the widespread popularity of ever more capable smartphones and the widespread use of social media has changed the way many people interact with each other and with their service providers. The challenge for an organisation like the Council is to keep pace with these advancements and changes in customer preferences in a way which improves customer satisfaction and delivers process efficiencies.

2.3 In embracing new technologies we need to ensure that we invest in sustainable solutions i.e. ones that will not disappear overnight and that we maintain the security of our systems and data in the face of increasing cyber threats.

2.4 This new 3-year ICT and Digital Services strategy sets out the Council's aims which are to embrace technological advancements to;

- move some of our ICT infrastructure or systems into 'the cloud' where beneficial
- increase the mobility of our staff so that they may serve our customers better
- redesign services, where appropriate, so that they may be delivered by digital means
- enhance existing systems and processes to improve system integration and data re-use

In implementing our strategy we will expect to;

- be more agile and responsive to the changing needs of our business and customers
- provide more access channels for many citizen and customer interactions
- achieve greater take-up of customer self service
- deliver greater availability and resilience for many of our systems

3. Introduction

3.1 Purpose

In common with other organisations the use of Information and Communications Technology (ICT) is intrinsic to the day-to-day operation of West Berkshire Council (hereafter referred to as the Council).

The purpose of this document is to set out the Council's ICT and Digital Services Strategy for the next 3-years (2017-2020).

3.2 Vision for ICT

The Council's vision is to embrace technological advances to create a digital enabled environment within the Council that is flexible yet secure, highly functional yet cost effective and which is agile enough to meet the changing needs of our staff, customers and service users.

We will develop our processes and our digital services to ensure they are the best they can be to help the Council deliver its corporate objectives and to address the challenge of meeting increasing customer demand whilst Council funds and resources are diminishing.

We aim to use ICT as a catalyst for change to improve the efficiency and effectiveness of the Council

3.3 Harnessing new opportunities

Rapid developments in technology over recent years have revolutionised how people communicate with each other and how they interact with businesses and service providers. Listed below are some specific opportunities that will be harnessed by, or will influence, the Council's new ICT and Digital Services Strategy.

- **Broadband infrastructure improvements** – As a result of commercial broadband rollout and the State-aid funded Superfast Berkshire project almost all premises in West Berkshire will have access to superfast broadband services (24Mbps or faster) by the end of 2017.

  As well as benefitting communities and allowing citizens and consumers to access Council services online, this technology is being exploited directly by the Council to reduce some of its intra-site networking costs.

- **Growth in smartphone ownership** - A report [1] published by Deloitte in Autumn 2016 records that 4 out of 5 adults in the UK now owns a smartphone and increasingly they use these in preference to computers for conducting online transactions such as banking, bookings and purchases.

  Since the advent of 4G, mobile coverage and bandwidth has increased considerably and continues to improve. The Council will enhance its online facilities to engage with this smartphone owning audience to improve customer interaction and to reduce transaction processing costs.

  Around 50% of access to the Council's own digital services and information is done by using a smartphone or tablet device.

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[1] Deloitte "**There's no place like phone** | Global Mobile Consumer Survey 2016: UK Cut"

- **Public sector move towards digital transactions** – Central Government's GOV.UK initiative has dramatically changed the way customers apply for car tax, renew their passports or driving licences etc. Processes have been redesigned to ensure that they are "so good people want to use them". These redesigned processes have removed many labour-intensive elements and reduced or eliminated the use of paper forms and licences.

  As large sections of the public have now become accustomed to conducting these type of activities digitally it should be easier for the Council to get its customers to accept and adopt any new digital services it develops.

- **The 'Internet of Things'** – Over the lifetime of this strategy we will expect to exploit the technical advancement and adaptation of traditional assets which allows them to connect to the internet. In their personal lives people have become used to smart TVs, smartphone controlled heating systems, cars whose software is updated remotely via an onboard SIM card and more recently smart electricity meters.

  As the 'Internet of Things' gathers pace we will expect to see traditional Council assets replaced with 'smart' equivalents that may be automatically or remotely controlled and managed . These will include, but will not be limited to, smart streetlights, automated parking pay stations, number plate recognition systems, smart building controls, vehicle mounted GPS. We also expect to see greater use of telemedicine and telemonitoring for our homecare and reablement services

3.4 Challenges and constraints

There are some specific challenges to developing a new 3-year Council ICT strategy worth acknowledging, including;

- **Government funding reductions** – Councils, including West Berkshire Council, have suffered successive Government funding cuts over recent years and this trend is continuing.

  These cuts have meant we have had to deliver ICT services with fewer people, and lower goods and services budgets. This has encouraged us to introduce tools to automate processes, to negotiate better deals with our ICT suppliers, and to switch to cheaper systems or solutions when available.

  The need to make further savings provides motivation to explore how ICT innovation and targeted investment in technology (invest to save) can be deployed to reduce the cost of labour-intensive activities across various Council departments.

- **Council funding model** – West Berkshire Council's ICT costs currently comprise a mix of recurring annual revenue costs (circa £2.2million per annum) which is spent on items such as staffing, software maintenance/licences, data usage and telephony charges etc. together with periodic capital investments (averaging £800k per annum) used to procure ICT assets such as computers, servers, data storage devices, network equipment and other hardware items which typically require renewal every 5-7 years.

  It is the Council's revenue budgets which are under greatest pressure, and this can act as a disincentive for the ICT department to move away from (capital funded) inhouse systems to (revenue funded) cloud-hosted alternatives, even when these appear to offer a lower whole life cost over a number of years, or where they would offer greater operational flexibility.

  It is also worth noting that many software vendors are moving away from offering traditional perpetual licences towards annual subscription-based services , and this may place an additional strain on already stretched Council ICT revenue budgets.

- **Business system supplier conservatism** – With only 418 principal local authorities in the UK, software suppliers for specialist Council functions such as Planning, Revenues & Benefits, Social Care etc., are catering to a relatively small market. These specialist application vendors have significant expertise and investment in traditional client-server applications and are often unwilling to risk alienating their existing customer base by moving too soon to a new platform. We will work with other local authorities and through organisations such as Socitm [2] and LocalGov Digital to influence and encourage our system vendors towards earlier adoption of new technologies to support digital services and mobile working.

- **Cyber security threats** – The dramatic rise in the number of people conducting their financial transactions online has also resulted in online fraud (including telephone scams) becoming one of the most prevalent crimes in recently published statistics. This, together with new threats, such as the emergence of ransomware (which is used to extort money from people to unlock maliciously encrypted computers) means that the Council needs to maintain and strengthen the protection it has in place to counter these threats.

- **Pace of technological change** – The pace of technological change continues to increase, particularly with regard to devices like computers and smartphones, such that it is now not unusual to see devices superseded within 2-years of their introduction.

  Whilst these changes can provide opportunities for the Council to deliver many of its services by digital means in order to provide a better or more cost effective service, it also makes it harder to maintain standardised devices, systems and policies for the Council's computer users. Too frequent changes in technology can have an adverse affect on staff proficiency to use it, may increase staff training needs (and associated costs) and can make IT support more labour intensive.

[2] Society of Information Technology Management
A professional association, founded in 1986, for ICT managers working in or for the public sector.

4. How was this strategy developed?

4.1 This strategy was developed by;

- Considering the resource and financial constraints we are working within
- Reviewing the corporate aims of the Council articulated in its various strategies
- Consulting with Council Members, officers, parish Councils, customers and services users and with peers from other Local Government organisations
- Reviewing current and emerging technology trends
- Adopting best practice guidelines set out by HM Government guidelines and by professional bodies such as the Society of Information Technology Management (Socitm)

5. Key Principles

5.1 This strategy conforms to four key principles, as listed below;

1. **Customer centric** – Our systems, processes and information provision will be tailored to the needs of our customers. This means developing systems that are easy to access and easy to use and that encourage self-service. Our customer include our internal computer users (officers and Members) and the Council's citizens and service users.

2. **Cost effectiveness and cost saving** – We will ensure, through making good choices, procuring competitively and negotiating hard, that our ICT costs are as low as practically possible. We will also invest in technology that can be demonstrated to lower our service delivery costs by process improvements or in driving customer self-service.

3. **Safety and security** - Our systems will be maintained up-to-date, be designed for resilience and be configured in a way which safeguards the integrity and security of the sensitive and personal data with which the Council is entrusted. We will also maintain necessary safeguards against existing and emerging cyber-security threats.

4. **Innovation and agility** - We will stay in-tune with the changing needs of the business and will adopt new ICT systems and business processes as quickly as possible to support these needs.

6. Supporting Infrastructure

Every computing task performed within the Council, every customer accessing online information or digital services and every ICT enabled front-line service activity is reliant upon the underlying ICT infrastructure of networks, servers, business systems and databases etc. This section will outline our current infrastructure setup and explore how we expect this to develop over the period of this strategy.

6.1 The Council's current ICT environment

The Council's ICT service is run by Council staff as a centralised service based in its Market Street offices in Newbury. This service supports around 1,600 computer users across a network comprising 36 sites. The majority of its 350 or so application and file servers (Mostly virtual servers), are hosted in the 3 data centres within our office estate, together with our data storage facilities

Most of our computers currently run Microsoft operating systems and business software and these are licenced under a Microsoft Enterprise Agreement.

We also run more than 100 specialist back office applications and around 120 desktop applications from a variety of vendors, which support the work of the various departments and teams across the Council.

Our telephony estate employs a mix of desk phones and mobile phones (smartphones)   The Council employs a unified communication system which allows its mobile staff to redirect their primary published phone numbers either to any of the Council's desk phones, or to their mobile phone, or to any other convenient phone that they have access to during the course of their work
The Council also operates a customer contact centre which receives around 13,500 telephone enquiries per month from our customers. The Council also receives around 10,000 calls a month to its switchboard and 50,000 direct dialled incoming calls to its various departments.

The Council's website(s) are an increasingly important channel for the public to access the Council's information and services. The Council website www.westberks.gov.uk receives around 90,000 visits per month together with a further 54,000 visits per month to our planning applications portal and 12,000 visits to the online library system.

6.2 System replacement strategy

The Council owns and operates a significant ICT estate and most of these assets have a relatively short lifespan (3-7 years) before they need replacing. It is anticipated that as we update/replace systems then more of them will be cloud hosted rather than managed on site in our Council data centres. This is explored further in the sections below.

6.3 Network strategy

Wide Area Network
Although most of West Berkshire Council staff are based in its Newbury offices the entire Council property estate (excluding schools) comprises 36 separate sites connected together on a wide area network (WAN)

Originally these sites were physically connected to our Newbury via expensive leased line network circuits in a 'hub and spoke' arrangement. More recently we have been exploiting the improved superfast broadband coverage in the district and substituting many of our leased line connections with lower cost alternatives i.e. connecting sites to the internet via a local connection then using virtual private networking (VPN) solutions to connect back to our centralised computing facilities in Newbury.

Our network strategy is to continue to lower our costs through the expansion of our virtual network model. We will also be reviewing our core network supplier arrangements with the following objectives;

- Ensuring we achieve best value for the bandwidth and availability we require
- Ensuring we have the bandwidth and flexibility to support future changes in data requirements (Whether that be data growth or data decline)
- To explore opportunities to develop Gigabit cities or smart city partnerships (See note below)

Gigabit Cities and Smart Cities
The West Berkshire district is largely rural, so does not naturally lend itself to the smart gigabit and smart city initiatives being explored and adopted by some more urban areas. However, even in Newbury there is supplier interest in looking at the ultrafast broadband requirements of local public bodies, including the Council, alongside the needs of local businesses and to consider whether to invest commercially in fibre infrastructure upgrades.

There is also interest from suppliers to access assets such as public buildings and street furniture to use as sites for their networking equipment, such as Wi-fi transmitters, CCTV cameras etc. The Council may be able to 'trade' the granting of this access for free or subsidised services e.g. town centre public wifi.

Local Area Network (LAN)
In order to ensure the continued productivity of our office based staff we are upgrading the LAN infrastructure to provide high speed (1Gbps) connectivity to every desktop in our core offices. We are also upgrading the speed of the server network infrastructure in our data centres to 40Gbps.

Wireless
In a home setting wireless internet connectivity, or WiFi is becoming the norm. Providing wireless connectivity in Council building with sufficient bandwidth, signal strength and with the security requirement prescribed for Council data is more of a challenge than in a domestic setting. However we recognise the role that 'blanket cover' Wi Fi connectivity will play in supporting the always on, always connected agile working practices the Council is moving towards and expect to have this infrastructure completed by 2019.

6.4 Server and data storage strategy

Some Councils are now pursuing 'infrastructure free' or cloud–based infrastructure models and cite a variety of reasons for this strategy including;

- **minimising capital expenditure** on renewing aging on-premise hardware
- **supporting ICT support insourcing** , where following previous outsourcing they no longer have on-premise data centre facilities
- **improving agility** in responding to significant organisation change for example when a Council changes to a commissioning only organisation

As an early adopter of VMWare virtual server technology the Council has a modern consolidated on-site server and storage infrastructure in modern Newbury-based data centres. Recent analysis indicates that there is currently no compelling reason for a quick or wholesale move of the Council's infrastructure into the cloud.

However it is recognised that a selective cloud migration of certain infrastructure or systems could yield resilience benefits and allow our support staff to gain the support skills the organisation will require in the future. We are investigating two specific cloud migration scenarios which are described below.

Migration of our core office services to the cloud
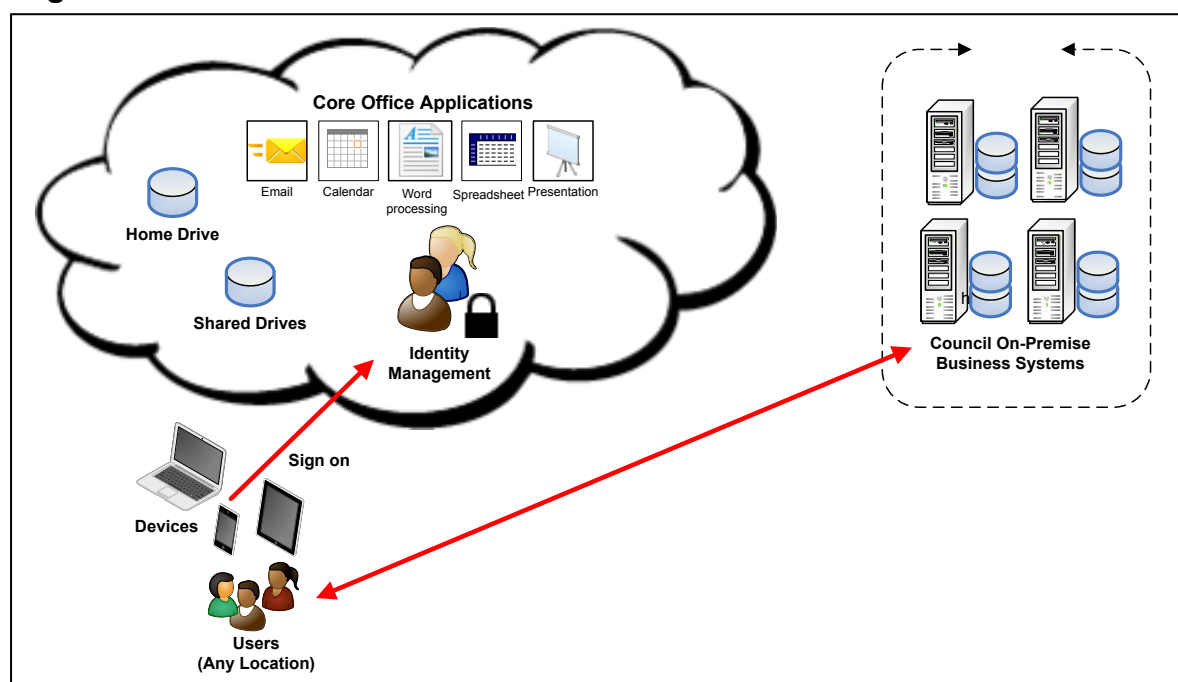
A high proportion of WBC's computer users can undertake some, or all, of their computer-based tasks using only a relatively small subset of the ICT systems and functions employed across the whole Council. These core office services include logon authentication, internet connectivity, personal or 'Home' data drives/folders, shared data drives/folders, email and Microsoft Office applications.

By hosting these systems/functions in the cloud, rather than in the Council's data centre(s), would enable staff to work using their laptop or tablet computers from any internet-connected location, even during periods when the Council's other systems are unavailable due to system maintenance, or some type of system or utility failure.

Migration of our disaster recovery facility to the cloud

The Council operates a replicated subset of the critical systems that are hosted in its Newbury data centre in a second data centre in the East of the district. This facility is designed for the initial recovery phase of systems and business functions in the event of a disaster, such as a fire or flood, which incapacitates our Newbury data centre.
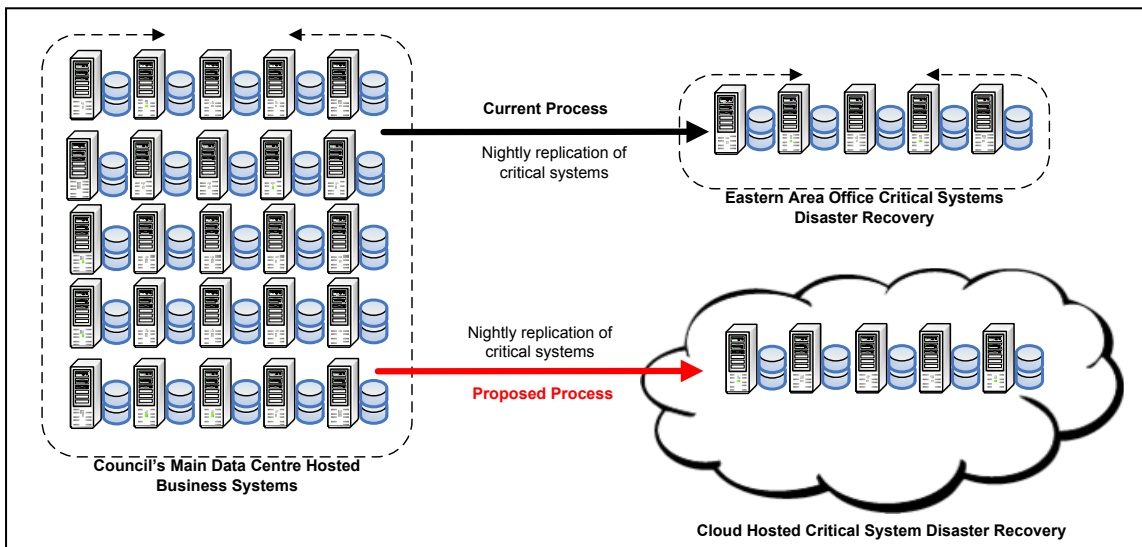
Moving our disaster recovery facility into the cloud would make it easier to keep it up to date, provide us with more accommodation options in the event of a disaster and its superiority scalability would allow us to replicate/recovery/reinstate a larger number of systems than the critical subset currently supported in our eastern area office.

7.   Device Strategy

7.1   Providing the right tools for the job

In order to make it easier to control, manage and support an organisation with such a diverse range of departments and services the ICT Service has traditionally restricted staff choice when providing personal technology such as laptop computers, smartphones or tablets.

Nowadays people have more choice than ever before over the variety of items and services they can buy and who provide these. Unsurprisingly our IT users expect this same choice in their workplace, particularly over the type of computer or smartphone they should have and which software applications they are allowed to use.

The Council's future strategy is to allow users greater choice over their personal technology to ensure that staff have the best tools for their job. However with choice comes responsibility; we probably all know someone who has bought a sports car or convertible that they have always desired instead of the 'sensible' family car they really needed!

ICT equipment choice will be governed according to agreed criteria which identify which type of device is best suited to each individual's job role, rather than leaving this to personal preference. We will also enhance our central management tools to ensure the extra demands of supporting choice can be met within our existing manpower resources.

7.2   Computing strategy

The Council ran its "*Timelord Programme*" from 2009-2011 which introduced large-scale flexible working practices to the Council. This allowed us to operate from fewer office buildings and for our staff to work in a more flexible and mobile fashion.

More than 79% of our workforce is currently classed as mobile. Each of these mobile staff members is currently equipped with a laptop computer and/or a smartphone together with software which allows them to access systems and data from any location and to use '*follow me'* systems to redirect their telephone calls and to print documents using a device local to their chosen work location on any given day.

Our strategy is to enhance the mobility of staff by supporting a greater range of computers than before, specifically we expect;

- **lighter more portable laptops** to be issued
- **greater numbers of tablets** to be issued , possibly including some non-Windows tablets (using iOS or Android operating systems)
- greater use of **always-on wireless connectivity**
- **biometric security measures** to be introduced (We are working with CESG as part of their Secure by Default Programme to explore the use of biometric passwords and secure access to data whilst on the move.

To manage this diverse computing estate without increasing manpower resources, we will extend the capability and utilisation of our centralised software configuration and deployment tool, Microsoft System Centre Configuration Manager (SCCM).

7.3   Telephony strategy

Our **mobile telephony strategy** is to migrate away from our legacy BlackBerry only smartphone estate to a mixed mobile estate.

This new estate will comprise a mix of modern 4G smartphone choices of all types and manufacturer (Android, BlackBerry, iOS), according to which is best suited to each individual's job role or business function.

We will utilise a suitable mobile device management (MDM) tool to ensure our more diverse estate can be centrally managed with our available manpower resources.

We will competitively retender our mobile device contract to ensure it provides the right mix of device choice and flexibility and provides the lowest cost call and data tariffs for our anticipated future demands.

Our **fixed phone strategy** is to review our desk phone estate to determine whether staff issued with smartphones also need access to a desk phone when working in the office. Depending upon the outcome of this review we will consider reducing the number of desk phones deployed in the Council offices.

Our **telephone contact strategy** is to retain one (follow me) number for each member of the Council's mobile staff. However we will seek to integrate the functionality of our unified communication (UC) system that supports this number e.g. instant messaging (IM), voicemail, presence management, audio and video-conferencing etc. into the Microsoft Outlook interface.

8. Other Development Themes

This section identifies other (non-infrastructure) themes that will be a focus of this new 3-year strategy.

8.1 **Communication improvements** – Good communication is essential in any organisation, both internally and with external stakeholders. This strategy will consider implementing or improving a number of different technologies capable of enhancing communication, including;

- Audio/Video-conferencing – The Council already makes regular use of audio conferencing to facilitate 'virtual meetings' and to reduce unnecessary staff travel between sites. Our strategy will be to further increase take-up of this technology and to introduce video-conferencing too where appropriate.

- Customer Contact Channels – The most cost-effective way for the Council to communicate with its citizens is through online channels. Our strategy is to maintain all current forms of customer contact, so as not to exclude anyone, these will include online, telephone and face-to-face and we will investigate the introduction of web chat channels where appropriate. However our strategy will prioritise the delivery of services and information by digital means and establishing the Council as a digital by choice organisation.

- Social Media – The Council already makes use of social media channels such as Facebook and Twitter to share information and video sites such as YouTube to provide informational videos. There is significant variance between departments regarding how well or how frequently these social media tools are used. Our strategy is to raise the confidence and competence of those non-adopting departments so that they can use social media channels to provide more and better information to our service users.

- Video Streaming – The Council internet streams some of its public meetings in order to make them accessible to a wider audience, thus improving democracy and transparency. Our strategy is to increase the number of meetings streamed where this will increase engagement with our communities and service users and/or where it will improve the transparency of the Council's decision making processes.

With the continued development of the Internet and the increasing power and sophistication of smartphones, many of our customers have got used to accessing the information and services that they need at anytime and from anywhere. Increasingly they will expect the same facilities to be provided by their Council.

8.2 **Delivering digital transformation** – We will transform many of our customer-facing processes and move West Berkshire Council towards being a *Digital by Choice* organisation.

The Council has signed up to create and deliver digital services according to the principles of the Local Government Digital Service Standard, developed by LocalGov Digital and the Government Digital Service.

The diagram below illustrates a cross section of the Council and the departments and processes currently in place to service requests from citizens or service users.

Traditional Council Customer Service Delivery Model
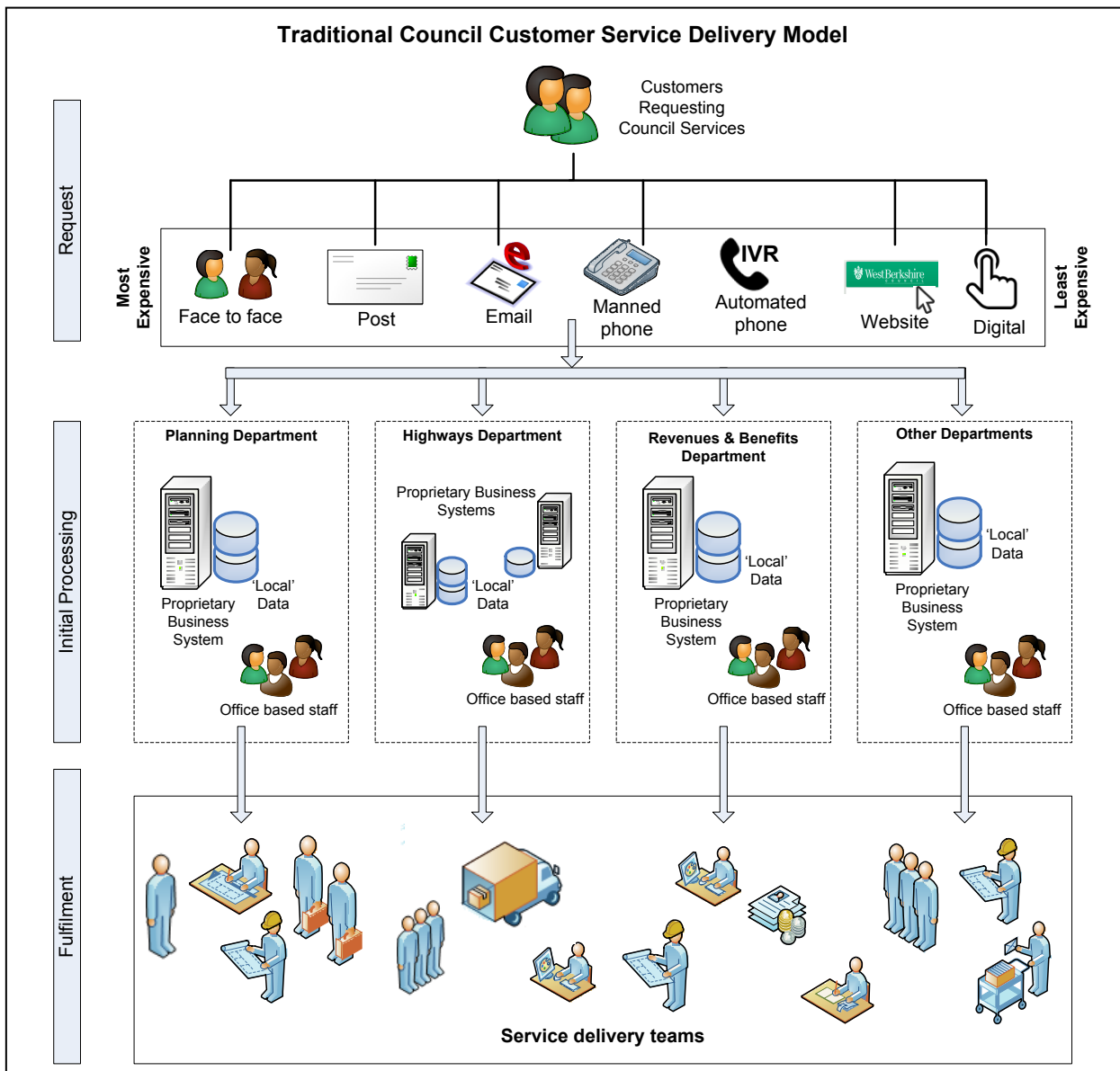
The aim of digital transformation is to apply the culture, practices, processes and technologies of the Internet-era to respond to people's raised expectations and to find the shortest and most cost-effective route from customer request to service fulfilment and to reduce the amount of Council manpower and other resources consumed by each process.

An example customer transaction, based on components from the diagram above is illustrated below to compare the current (traditional) process with a digitally transformed

Council Customer Transaction - Traditional

1 Customer Phones to report pothole.

2 Call logged by Contact Centre and passed to Highways Department.

Highways Department

Office based staff

Highways System

Engineer

3 Engineer sent to inspect highway, informs maintenance contractor of findings.

4 Crew from maintenance contractor sent to repair pothole.

Council Customer Transaction- Digital

1 Customer reports pothole using **digital app**.

Photographs and geo-location of pothole included

2 Data processed by digital system (Artificial intelligence or remote manual assessment)

3 Crew from maintenance contractor sent to repair pothole.

Advantages of the digitally enabled service delivery are that;

- it uses fewer ICT systems
- it involves less data input (by Council staff)
- it involves fewer, or no Council staff
- it can be available 24x7x365

Digitally transformed processes will by design;

- be delivered by online web channels, or via a mobile app if appropriate
- be customer-focussed
- encourage self-service
- eliminate unnecessary process steps
- reduce or eliminate paper forms
- reduce the amount of Council manpower and resources used for fulfilment
- be (re)developed using Agile software development methodology according to our digital principles

The challenge for digital transformation developments is to break tasks out of their traditional Council departmental 'silos' and from the constraints of the specialist line-of-business applications used by those departments.

Some digital solutions will be developed inhouse, others will be procured externally using the Council's standard procurement routes. The Council will also source solutions via the Digital Marketplace

8.3 Supporting alternative operating models

The services that the Council provides can be considered to consist of 3 tiers;

- **Tier 1 – Customer Self Service** (Provided by online information or transactions)

- **Tier 3 – Specialist Support** (Provided by Council professionals/specialists with an in-depth knowledge of a particular subject or discipline)

- **Tier 2 – Generalist Support** (Provided by Council staff with a reasonable depth of knowledge across a wide range of topics). Tier 2 bridges the gap between what can not be done through self-service, yet does not require high-cost professional knowledge

The diagram below illustrates the Council's current and target service delivery models.
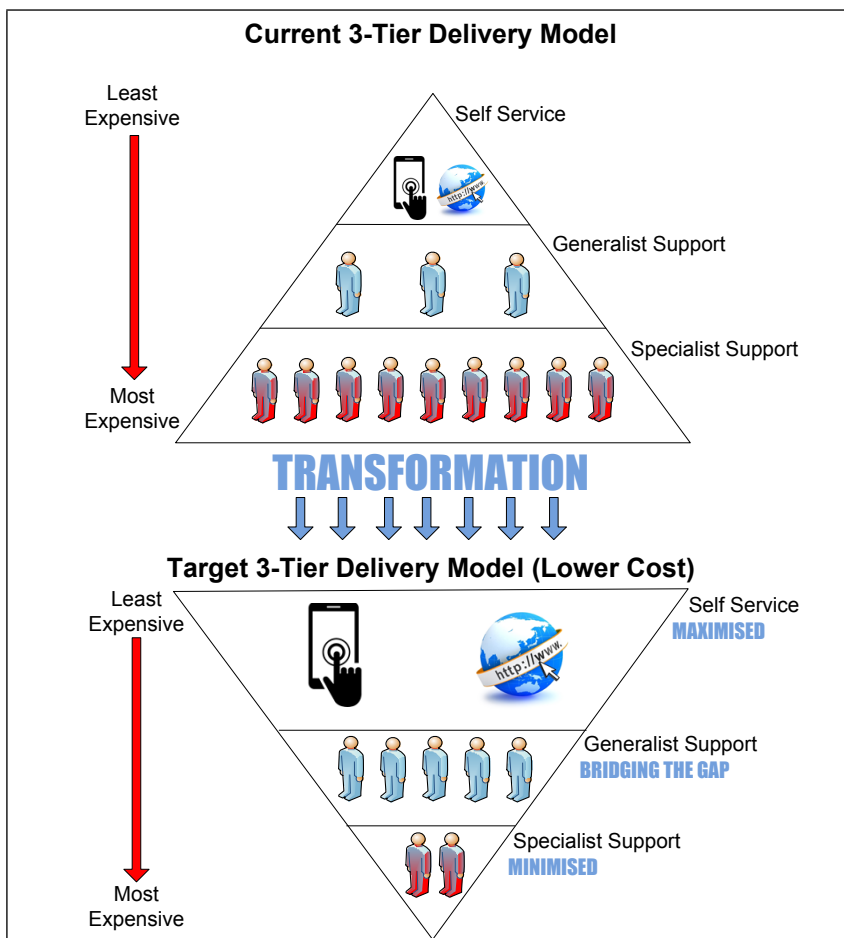
The current model employs relatively little self-service functionality and for many services is highly reliant upon high-cost professionals.

Transformation tools will include;

- Case recording/tracking
- Knowledge management
- Online content/apps
- Video instructions
- Web chat

The target model makes use of digital transformation and a range of technology tools to flip the 3-tier model on its head so that the self-service tier is maximised and the high-cost specialists tier is minimised, allowing the Council to operate within its shrinking budgets.

8.4 ICT System and process improvements

Wherever possible our aim is to simplify our ICT infrastructure and systems by reducing the number of discrete applications, databases and devices used by the Council, whilst still meeting the needs of the business. Where systems cannot be consolidated we aim to improve the integration between them to automate processes and to avoid data re-entry. This improvement strategy will involve a number of different activities including;

- Device convergence – Many of the Council's mobile staff have a mobile phone or smartphone, and a laptop to use whilst away from the office but use a desk phone when in the office. As we negotiate better mobile tariffs and the functionality of smartphones increases we are likely to be able to reduce the size, and therefore costs, of our desk phone estate and in many cases equip staff only with a smartphone, rather than providing 2 separate devices.

- Application consolidation - The Council currently employs over 100 individual line-of-business applications of varying size and complexity and the functionality provided by some of these systems overlaps with others. Our strategy is to review how much rationalisation is possible in order to reduce the number of systems supported, without negatively impacting business efficiency within individual departments. This review will be undertaken whenever any system reaches end-of-life or requires replacement and more proactively by looking across our entire software estate.

- Deliver digital capabilities – In order to meet a requirement such as booking a sports pitch the Council would traditionally look at developing, or procuring, an IT system for that purpose. In future our approach will be to break such requirements down into its constituent parts ie. store user details, book something, pay for something etc. By developing these individual 'capabilities' we can use to meet our initial requirements, then re-use them to meet other requirements across the Council. This approach of creating a set of common capabilities has the potential to save money, improve agility and provide better customer services.

- Re-using data – Wherever possible we will link to local or publically available data sources such as address lookups, or vehicle registration data to save time in completing applications/updating records and to verify peoples eligibility to access certain Council services e.g. residents parking permits, access to recycling centres, etc.

8.5 **Exploiting spatial data and geographic information systems (GIS)**

The Council continues to make extensive use of geographic (spatial) data in many of its databases and systems. This provides a detailed understanding of where our citizens live, where our assets should be located, how our resources should be deployed and how our services should be designed to best serve our customers'.

The Council's GIS system currently holds 495 'layers' of data on addresses, flood plains, property ownership, road layouts, school catchment areas etc. This data is deeply embedded within many of the Council's business processes and systems.

The shares much of its data publicly as part of the [European INSPIRE directive](#) for geospatial data.

In order that we can effectively maintain and manage the Councils valuable data resource and to provide greater access to it we are modernising and restructuring our systems so that they are easier to keep up-to-date and so that they can provide more benefit to more people, specifically our new GIS facilities will allow us to;

- **automate data management** processes to improve data quality and integrity with fewer man-hours of effort

- **integrate geographic data** with more of our business system

- **develop GIS applications quickly** by using standard template solutions and avoiding the requirement for bespoke developments

- **exploit public data sources and mapping services**[3] in addition to the Council's own data

- **publish maps and geo-processing services** through a portal on our web site promoting data sharing with partner organisations

- **support digital transformation** activities by providing a simple map and other location based functionality for our website developers.

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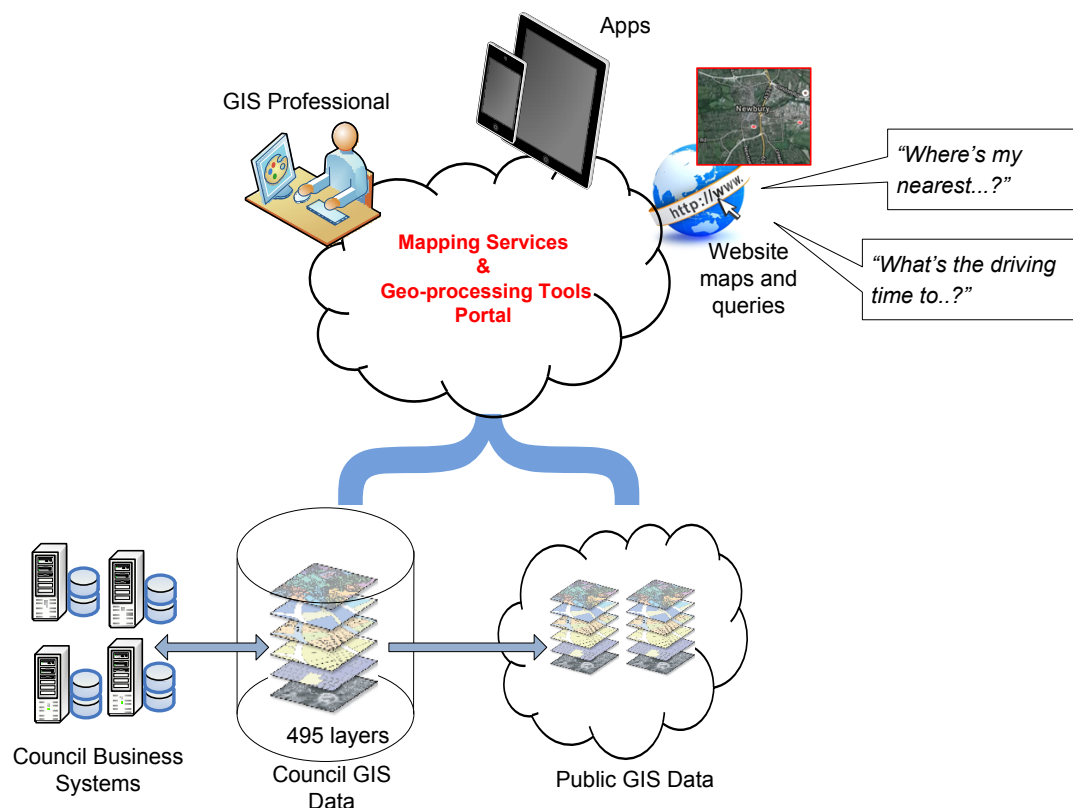
[3] **Public GIS data sources include :** *ArcGIS Online, British Geological Survey, Canals & Rivers Trust, Data.gov.uk, Health & Safety Executive, Elgin, English Heritage, Environment Agency, Land Registry, Met Office, National Grid, Natural England, NHS, Office of National Statistics, Ordnance Survey ,Southern Gas Network.*

8.6 **Employ Data Analytics** – Data is collected and stored for a wide variety of purposes by the Council and this is often analysed to produce performance report to ensure we are delivering according to prescribed service standards.

Our strategy is to use our analytical skills to perform more predictive analysis of our data to uncover trends that we were not previously aware of and to use this to help improve services, save money and to plan for our future service provision.

9.   ICT Governance

9.1 Good governance is important to ensure the reliability, security and effective use of resources when implementing and using ICT in the Council. Our governance methodologies include;

- Agile development: The Council has recently adopted Agile development principles for its digital services initiatives.

- IT Infrastructure Library (ITIL): The processes used by the Council's ICT Service are based upon OGC ITIL Best Practice Guidelines.

- Project Management Methodology (PMM) **:** The Council's Prince-2 based methodology is used to manage most ICT and other projects (except where agile is being used) to help keep them on track in terms of budget and timescale and to help ensure they deliver their specified objectives.

- Risk Management Methodology**:** The Council employ a likelihood vs impact matrix methodology for assessing risks each with scores ranging from 1-4 which are then multiplied together. Gross risks (before mitigation applied) and net risks (after mitigation applied) are assessed for key ICT systems and processes and during the implementation of ICT projects.

- Understanding users' needs: In developing its digital services the Council will follow Government Digital Service guidance . Criteria 1 of this guidance relates to understanding who your users are and what they want prior to developing a solution for them.

9.2 An important role of the Council's ICT Service is to understand the 'big picture' context for technology deployment and to advise individual parts of the organisation, who may be proposing to procure or implement new business systems, on the suitability of their chosen systems in order to ensure these function for the common good of the whole organisation.

Practitioner needs and preferences for a particular ICT system are sometimes at odds with corporate policies, national security standards or local system compatibility considerations. Our governance bodies are used to broker the best compromise when these situations arise. Governance bodies within the Council include;

- Change Advisory Board (CAB): A small group of Council officers who meet on a weekly basis (every Wednesday morning) to assess the viability and impact of ICT change requests and to prioritise the allocation of resources to implement approved changes.

- Capital Strategy Group (CSG): An officer/Member group which oversees the Council's Capital Programme. The Council's ICT Capital Programme has an annual budget of circa £700k per annum.

- ICT Programme Board (ICTPB): An Officer Board which oversees the Council's portfolio of active ICT projects, ICT procurement decisions and ICT policy and strategy. The group also makes recommendations to Capital Strategy Group on the required budget quantum for the 5-year ICT Capital Programme.

- Executive: The main decision making body of the Council. ICT matters are represented at Executive by the Council's ICT portfolio Member.

10. ICT Standards

10.1 The Council conforms to a number of standards for the use of ICT and information. These are all listed at Appendix A, but key standards include;

- Information Security **–** Complying with the requirements of HM Government Public Services Network (PSN)

- Cyber Security **–** Employing HM Government's *Cyber Essentials* scheme to assess and address common internet based threats to the Councils systems and information

- Digital Services – We will create digital services in accordance with the Local Government Digital Services Standard

11. Delivery Activities

11.1 Listed below are currently identified activities that will help deliver what has been set out in this strategy.

Key Principle Supported	Activity/Project	Objectives	Target Year 2017	2018	2019	2020	Reference Paragraph	Page Number
Safety & security	PSN Accreditation	Maintain appropriate system and information security controls to satisfy requirements of PSN annual accreditation. Task is ongoing as the security threat is continually changing.	●	●	●	●	10.1	21
Customer centric	Superfast Berkshire project	Pan-Berkshire State aided initiative to improve the county's public superfast broadband coverage towards 100%.	●	●			3.3	5
Customer centric Safety and security	"Secure by default" mobile device project	Working with CESG to review how mobile devices (tablets, smartphones) can be made easier to use by Council staff in the field whilst maintaining security and ease of use.	●					
Cost effectiveness and cost saving	ICT Tools Review	To review the applications used for essential activities such as disk encryption, anti-virus, ICT asset mangement etc. To see if these can be delivered more cost-effectively	●	●				
Business Alignment	Social Care System Replacement	Replace the current social care case-mangement system (Careworks Raise) before it reaches end of life with a modern successor system (Careworks Care Director)	●	●				
Business Alignment Safety & Security	Data Storage Review/Replacement	Replace the Council's data storage facilities before the current inhouse systems go end-of life and to ensure it continues to meet the needs of the Council. Engage with market providers and examine feasibility of cloud hosted or hybrid system/storage models.	●	●			6.4	11-12
Cost Saving Customer Centric	Digital Transformation Programme	Use Agile project managment methodology to identify and create "common capabilities" for digital services e.g. booking modules, payment modules, ID verifification etc., to enhance the ease of use by customers of our online services, so that they become the customers' first choice method of perrforming transactions.	●	●			8.2	15-16
Business Alignment Ease of Use Safety & Security	Corporate Replacement Programme (CRP)	A rolling programme to ensure that computers, servers and telephony devices used within the Council are kept up to date and remain fit for purpose. Our CRP aims to have no computer assets in use that are more than 5-years old.	●	●	●	●		
Cost effectiveness and cost saving Customer centric Innovation and agility	Mobile Telephony Reprocurement	We have recencently reprocured our mobile telephony contract to ensure we are getting best value. We are working with this partner to introduce mobile device management (MDM) to allow us to have a more modern and diverse smartphone estate to improve our business processes and customer service.	●				7.3	13
Customer centric Safety and security	Connected Care Programme	A programme to allow client information to be shared between the local authority and health partners. It also involves the Council obtaining a connection (N3) into the NHS secure network.	●	●				
Communications	Council Chamber AV Upgrades	We are upgrading the audio-visual facilities in our Market Street Council Chamber to improve audibility for all attendees at public meetings and to allow us to webcast important meetings that are of public interest.						
Innovation and agility	New Ways of Working Reviews	Conduct a series of reviews across all the Council's services to determine whether alternative operating models or digitally transformed processes can save money and/or improve customer service.	●	●	●		8.2	15-17

Glossary of Terms

Acronym	Stands for	Description
4G	4th Generation standard for mobile phones (Supersedes 3G)	Describes the cellular network used by modern mobile phones, smartphones and tablets to access Internet services.
GIS	Geographic Information Systems	Systems and software for capturing, storing, analysing and manipulating geographical data for assets owned, managed or served by the Council.
ICT	Information & Communications Technology *Often formerly known as information technology (IT).*	ICT comprises the computer hardware, networks, data storage, software, programs, systems and services that enable people to communicate with each other, using a wide variety of channels.
ITIL	Information Technology Infrastructure Library	A Best Practice Framework set up by the Office of Government Commerce to describe how ICT services should be managed and delivered.
MDM	Mobile Device Management	A tool for the central administration of mobile devices such as smartphones, laptop computers and tablets for ease of software update and to ensure data security controls are maintained.
UC	Unified Communications	A communications system that utilises multiple media usually including phone/voice, video, email, text. Most UC systems have a concept of 'presence' where users can identify whether they are available to communicate with, or not, together with the ability to dynamically (re)direct communications to different destinations or devices.
Socitm	The Society of Information Technology Management	A professional association, founded in 1986, for ICT managers working in or for the public sector.

Term	Description
Digital Services	A digital service is a service, or transaction, that is delivered with little or no human intervention. A common example is the online streaming of music or videos which has largely replaced the purchase and ownership of physical music or film media by individuals.
Internet of Things	A development where everyday and previously passive objects are made 'smart' by being connected to the internet. Examples include smart street lights, smart electricity meters, smart TVs, internet connected vehicles.
Local Government Digital Service Standard	A standard published by LocalGov Digital. The Standard suggests a common approach for local authorities to deliver excellent quality, user centered, value for money digital services.
Superfast Broadband	Broadband service with a download speed in excess of 24Mbps usually delivered wholly or partially via fibre optic cables.
	A communications system that utilises multiple media usually including phone/voice, video, email, text.

Appendix A - ICT Standards Employed by West Berkshire Council

Category	Sub Category	Standard & Version			Review Cycle	Last Reviewed	Review Due
		Current/Preferred	Supported	Unsupported			
Authentication	WBC Internal Login	Microsoft Active Directory 2008 (AD)	Solaris 10, Linux		Annual	24/01/2017	24/01/2018
	External Remote	Safeword Token Authentication			Annual	24/01/2017	24/01/2018
Communications	Fax	Group 4 Fax			Annual	24/01/2017	24/01/2018
	Email (Corporate)	Microsoft Exchange2010 SP3/Outlook			Annual	24/01/2017	24/01/2018
Data	Addresses	BS7666, OS Addressbase			Annual	24/01/2017	24/01/2018
	Integration Standards	e-GIF			Annual	24/01/2017	24/01/2018
	Data Transfer	XML			Annual	24/01/2017	24/01/2018
	GIS Data Transfer	GML, WMS/WFS, Shapefile, ArcGIS Server Services			Annual	24/01/2017	24/01/2018
Databases	Major Systems	Oracle 11.2.0.4 to 12.1.0.2			Annual	24/01/2017	24/01/2018
		Microsoft SQL Server 2012 - SQL Server 2016	SQL Server 2005-2008 Microsoft Access 2002,2003		Annual	24/01/2017	24/01/2018
Data Network	Protocol	IP.V4	IP.V6	IPX/SPX	Annual	24/01/2017	24/01/2018
		Address Range RFC1918, RFC3927, RFC5735	TCP/IP (RFC1780), Netbios		Annual	24/01/2017	24/01/2018
		DHCP (RFC1541)	NSAP		Annual	24/01/2017	24/01/2018
		DNS (RFC1035)			Annual	24/01/2017	24/01/2018
		BOOTP (RFC951)			Annual	24/01/2017	24/01/2018
		iana.org database	Port allocation (RFC1700)		Annual	24/01/2017	24/01/2018
		SFTP	FTP, TFTP, CIFS		Annual	24/01/2017	24/01/2018
		OSPF, BGP	RIP, RIP2, EIGRP, Static		Annual	24/01/2017	24/01/2018
		PPP/MLPPP, LAG	PPTP		Annual	24/01/2017	24/01/2018
		MIB/ MIB2 / SNMP.V3	SNMP, SNMP.V2		Annual	24/01/2017	24/01/2018
		WPA2, 802.1X, 802.11i	WPA	WEP	Annual	24/01/2017	24/01/2018
		IPSEC	L2TP		Annual	24/01/2017	24/01/2018
		MAPI	SMTP		Annual	24/01/2017	24/01/2018
		XML, TLS1.2, SSL.V3	HTTP/1.1, SSL.V2	SSL.V1, TLS.V1	Annual	24/01/2017	24/01/2018
	Voice over IP (VoIP)	Openscape RFC(3725), SIP			Annual	24/01/2017	24/01/2018
	Building Cabling	Cat5e/Cat6/Fiber 50/125 62.5/125	Cat5	Cat 3/4	Annual	24/01/2017	24/01/2018
		TIA 568B, I2000			Annual	24/01/2017	24/01/2018
		802.3ae (PoE)			Annual	24/01/2017	24/01/2018
	Circuit Connectivity	Lan Extension Service 10/100/1000	EPS 8/9, Cable services	Megastream, Kilostream, IPStream	Annual	24/01/2017	24/01/2018
		Dark Fibre 50/125, 62.5/125	Free space optics (laser), licensed/unlicensed radio	Modem V.92	Annual	24/01/2017	24/01/2018
		ADSL 2, SDSL, VDSL (FTTC)	ADSL, Annex M		Annual	24/01/2017	24/01/2018
		GSM, 3G, 4G	2.5G		Annual	24/01/2017	24/01/2018
	Network Security	IPSEC, Firewall - EAL4	Sonicwall, Juniper firewall extensions		Annual	24/01/2017	24/01/2018
	Switch / Router Devices	Brocade, Juniper	Cisco, HP		Annual	24/01/2017	24/01/2018
	WiFi	802.11g/n/ac	802.11ad (WiGig)	802.11b	Annual	24/01/2017	24/01/2018

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Category	Sub Category	Standard & Version			Review Cycle	Last Reviewed	Review Due
		Current/Preferred	Supported	Unsupported			
Hardware	Servers (Physical)	Dell Poweredge R720	Dell R900, Dell Poweredge 2950 II, Poweredge R200, Dell Poweredge R710	Dell PowerEdge Pre 2006 Models	Annual	24/01/2017	24/01/2018
		Sun Microsystems Sun Fire and T&M Series		Sun Ultra Enterprise Series	Annual	24/01/2017	24/01/2018
	Servers (Virtual)	VMWare ESX / vSphere			Annual	24/01/2017	24/01/2018
	SAN Networking Fabric	Brocade Fibre Channel Switches			Annual	24/01/2017	24/01/2018
	Storage (Virtual)	Hitachi AMS2500, Dell Compellent			Annual	24/01/2017	24/01/2018
	Storage (Physical)		IBM TotalStorage DS4000 Series		Annual	24/01/2017	24/01/2018
		Sun StorEdge 3500 Series	Sun StorEdge 3300 Series SCSI Disc Arrays		Annual	24/01/2017	24/01/2018
		Internal Storage supported by RAID technology	Dell PowerEdge NAS Servers	Any storage not supported by RAID technology	Annual	24/01/2017	24/01/2018
						24/01/2017	24/01/2018
	Tape Storage	Quantum 80i, LT05 tape media	Sun SL48 tape library, LTO4 Tape media	LTO2 Tape Media	Annual	24/01/2017	24/01/2018
				Sun StorEdge SDLT320 Tape Drive & Media	Annual	24/01/2017	24/01/2018
	Desktop PC (Traditional)	HP Prodesk range	Dell Optiplex 390, 745,755,760,780 3010, GX270, GX280,GX520,GX620, Precision M6400, M90, Workstation 390, workstation T3400, HP Presario	Previous Dell models, all other brands except those named.	Annual	24/01/2017	24/01/2018
	Desktop PC (Thin Client)	No longer supported			Annual	24/01/2017	24/01/2018
	Laptop PC	Various (see supported)	Dell E5420, E5430, E5440, E6400, E6410 HP 820, 840 Lenovo X240, X250, T450		Annual	24/01/2017	24/01/2018
	Tablet PC	Microsoft Surface Pro 3	HP Folio Lenovo Tablet 10, T450 iPads and Android tablets for special applications		Annual	24/01/2017	24/01/2018
					Annual	24/01/2017	24/01/2018
Printers	Personal Printers	Only supplied by exception for special applications			Annual	24/01/2017	24/01/2018
	Team Printers	Provided on special request only			Annual	24/01/2017	24/01/2018
	Departmental Printers	Xerox Multi-function devices (MFDs)			Annual	24/01/2017	24/01/2018
	Printers Consummables	Original Branded items only	All manufacturer approved/branded items	3rd party Recycled, remanufactured or refilled items	Annual	24/01/2017	24/01/2018
	Print Room Printers	Oce/Cannon Various models			Annual	24/01/2017	24/01/2018
System Software	Remote Working	Citrix XenApp 5.0 Featurec Release 2			Annual	24/01/2017	24/01/2018
		Citrix Web Interface 5.3.0.34			Annual	24/01/2017	24/01/2018
		Citrix Access Gateway 4.6.1			Annual	24/01/2017	24/01/2018
		Citrix Provisioning Server 5.6.1.1			Annual	24/01/2017	24/01/2018
		Application Virtualisation for Terminal Services 4.5.0.1485			Annual	24/01/2017	24/01/2018
	Desktop Operating System Deployment	Microsoft System Center Configuration Manager (SCCM) 2012			Annual	24/01/2017	24/01/2018
	Software Deployment/ Remote Admin	Microsoft System Center Configuration Manager (SCCM) 2012			Annual	24/01/2017	24/01/2018
		Microsoft Deployment Toolkit 2010 6.0.2223.0	Microsoft Deployment Toolkit 2010 5.1.1642.01		Annual	24/01/2017	24/01/2018
		Microsoft Automated Installation Kit 2.0.0.0			Annual	24/01/2017	24/01/2018

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Category	Sub Category	Standard & Version Current/Preferred	Supported	Unsupported	Review Cycle	Last Reviewed	Review Due
Server Software	Operating Systems	Microsoft Windows 2008 - 2012		All prior Microsoft versions	Annual	24/01/2017	24/01/2018
		Microsoft Windows 2008 - 2012(64 bit)		All prior Microsoft versions	Annual	24/01/2017	24/01/2018
		Sun Solaris 11	Sun Solaris 9,10	All prior Sun Solaris versions	Annual	24/01/2017	24/01/2018
				Novell Netware 4.11	Annual	24/01/2017	24/01/2018
	Backup Software	Legato Product Suite Post January 2017			Annual	24/01/2017	24/01/2018
	Server Hardware Management	Dell Open Manage			Annual	24/01/2017	24/01/2018
Desktop Software	Operating System	Microsoft Windows 7 Enterprise	Microsoft Windows 8.1, 10	Microsoft Windows XP or earlier	Annual	24/01/2017	24/01/2018
	Internet Browser	Internet Explorer 11	Google Chrome		Annual	24/01/2017	24/01/2018
	Desktop Apps	Refer to Desktop Applications: Definitive Software Library (DSL)			Continuous	24/01/2017	24/01/2018
Information Security	Information Security Management System	Public Service Network (PSN) Code of connection standard			Annual	24/01/2017	24/01/2018
	Removable Data Storage (USB Sticks)	SafeXs	Kingston Encrypted Memory Stick, Safestick	Standard Memory Sticks	Annual	24/01/2017	24/01/2018
	User Data Storage	Centralised Network Drives		Local PC C:/ drive back-ups	Annual	24/01/2017	24/01/2018
	Perimeter Security - Web Filtering	Websense Web Security Gateway V 8.2 Blucoat ProxySG V6.5			Annual	24/01/2017	24/01/2018
	Secure Email	Mimecast (Cloud based solution)			Annual	24/01/2017	24/01/2018
	Desktop Security	Sophos endpoint protection			Annual	24/01/2017	24/01/2018
Telecoms	Unified Communications	OpenScape Web Client - 1.0 - Version 7.2-0.11.18-52148			Annual	24/01/2017	24/01/2018
		OpenScape Voice - Version 7 - R1.51.7					
	PABX	Realitis - Version 9.0.061 , 9.2.081 or 12.0.161			Annual	24/01/2017	24/01/2018
	Telephone Handsets	Siemens/Unify AT600, DT60, DT70, OptiPoint 420 Standard, IP35G or IP55G			Annual	24/01/2017	24/01/2018
	Mobile/Smart Phones	MobiWire (Dakota) and Blackberry Leap	Previously issued devices whilst still on contract. Anything on the Vodafone PSN Device Price List		Annual	24/01/2017	24/01/2018
	Voicemail	Xpressions 8.11.0.17973	Vodafone 121		Annual	24/01/2017	24/01/2018
	Contact Centre	OpenScape Contact Centre - Version 8 - R2.5.146			Annual	24/01/2017	24/01/2018
	Call Logging	Oak Telecom AI Office - Comms Suite 09 - Version 10.2.0			Annual	24/01/2017	24/01/2018
Web Publication	Documents	PDF	Microsoft Office Documents (Word/Excel etc)		Annual	24/01/2017	24/01/2018
	Images (Photographs)	JPG			Annual	24/01/2017	24/01/2018
	Images (Graphics)	GIF			Annual	24/01/2017	24/01/2018

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Category	Sub Category	Standard & Version Current/Preferred	Supported	Unsupported	Review Cycle	Last Reviewed	Review Due
Software Development	Database\Report development Tools	VB Script			Annual	24/01/2017	24/01/2018
		Oracle Forms/Forms Server			Annual	24/01/2017	24/01/2018
		Reporting Services 2012	Reporting Services 2008	Reporting Services 2005	Annual	24/01/2017	24/01/2018
		Crystal reports 2011-2016	Crystal reports 2008		Annual	24/01/2017	24/01/2018
			Business Objects XI		Annual	24/01/2017	24/01/2018
			Impromtu 7.3		Annual	24/01/2017	24/01/2018
	GIS Development Tools	VB.Net, Python, Javascript		VBA, Avenue	Annual	24/01/2017	24/01/2018
	Software Development Tools	VB.Net		VB6	Annual	24/01/2017	24/01/2018
		Python 2.7			Annual	24/01/2017	24/01/2018
	OLAP	Excel 2007 -2016		Excel 2003	Annual	24/01/2017	24/01/2018
		MS SQL Server Analysis Services 2012 - 2016	MS SQL Server Analysis Services 2008		Annual	24/01/2017	24/01/2018
		MS SQL Server Integration Services 2012 - 2016			Annual	24/01/2017	24/01/2018
	Web Development Tools	Visual Studio		Microsoft Frontpage	Annual	24/01/2017	24/01/2018
		Chrome Developer Tools			Annual	24/01/2017	24/01/2018
		Postman Chrome Extention			Annual	24/01/2017	24/01/2018
		Notepad++			Annual	24/01/2017	24/01/2018
	Web / API Data Formats	XML			Annual	24/01/2017	24/01/2018
		Json			Annual	24/01/2017	24/01/2018
	Web Servers	IIS	Apache Tomcat		Annual	24/01/2017	24/01/2018
	Web Languages/Formats	HTML 5	HTML 4.01	Java	Annual	24/01/2017	24/01/2018
		C#.Net / ASP.Net			Annual	24/01/2017	24/01/2018
		JavaScript			Annual	24/01/2017	24/01/2018
	Web Frameworks	.NET4.5	.NET2		Annual	24/01/2017	24/01/2018
		.NET4			Annual	24/01/2017	24/01/2018
		JQuery			Annual	24/01/2017	24/01/2018
		Twitter Boostrap			Annual	24/01/2017	24/01/2018