

<b><u>MEETING</u></b> <b>POLICY AND RESOURCES COMMITTEE</b>
<b><u>DATE AND TIME</u></b> <b>WEDNESDAY 5TH OCTOBER, 2016</b> <b>AT 7.00 PM</b>
<b><u>VENUE</u></b> <b>HENDON TOWN HALL, THE BURROUGHS, LONDON NW4 4BQ</b>

Dear Councillors,

Please find enclosed additional papers relating to the following items for the above mentioned meeting which were not available at the time of collation of the agenda.

Item No	Title of Report	Pages
12.	ICT STRATEGY – Appendix 3	3 - 66

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# LONDON BOROUGH OF BARNET

## INFORMATION AND COMMUNICATIONS TECHNOLOGY STRATEGY

### UPDATE

<b>Work stream</b>	ICT
<b>Owner</b>	Jenny Obee
<b>Client</b>	London Borough of Barnet Council (LBB)
<b>Version</b>	Version 1.4
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## 1 EXECUTIVE SUMMARY

This Information and Communications Technology (ICT) Strategy document has been developed with the aim of providing the Council with a clear and concise vision for the future state of the ICT Service and Infrastructure.

The ICT Strategy seeks to underpin the Council's business strategy and plans which in turn support the Council's vision and strategy as described in the Corporate Plan 2015-2020. This is based on core principles of fairness, responsibility and opportunity to make sure Barnet is a place:

- of opportunity, where people can further their quality of life
- where people are helped to help themselves, recognising that prevention is better than cure
- where responsibility is shared, fairly
- where services are delivered efficiently to get value for money for the taxpayer

The strategy seeks to consider external factors such as government health reforms and austerity measures which have financial and organisational impacts felt by employees, partners, service providers and the residents of Barnet. ICT services, like all other Council services, need to contribute to the savings.

Technology within the Council is critical to business success. Almost without exception delivery units rely on technology services to enable successful outcomes for the residents of Barnet. Business areas and ICT could do more to ensure that maximum benefits are being derived from current and future technologies. For this to happen, the business needs to embrace ICT within key decision making processes and the Council's major line of business systems need to be viewed more as Council strategic assets. Achieving this, will require cultural and procedural changes but the potential benefits in the form of reduced costs, improved business efficiencies and delivery of faster outcomes should be viewed as essential.

The primary driver for the ICT strategy is the Council's Information Management Strategy<sup>1</sup> and acts as an enabler to its delivery. It is also informed by additional sources including the London Borough of Barnet (LBB) Corporate Plan, Delivery Unit objectives, Priorities and Spending Review 2016-2020, Customer Access Strategy, Smarter Working Programme, UK Government ICT Strategy, ICT management and security policies, feedback from key business stakeholders, Government legislation, ICT architectural principles, the existing ICT estate and corporate and local programmes portfolio.

This ICT strategy is supported by a five year implementation roadmap influenced by an assessment of business risks, priorities and the likely availability of funding and business cases.

The vision for this ICT strategy for 2020 is to **“Enable Barnet residents, local businesses, Members, staff and partners to access the information and services they need securely and reliably from anywhere through any device.”**

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<sup>1</sup> 2013-2016 London Borough of Barnet Information Management Strategy v01.0 dated 16<sup>th</sup> August 2013

Below we outline the future vision in more detail:

### **Future Vision – More detail:**

#### **Better Value for Money**

- Technology investment decisions are guided by clear principles to deliver business priorities, maximise value, adopt economies of scale and avoid duplication
- The number of systems has been significantly reduced; maintenance costs are controlled and focussed on business critical systems where this is of benefit to the users
- Cloud services are used to complement data centre hosting services; costs are reduced whilst providing improved levels of availability and maintaining security
- Duplicated systems have been replaced by a smaller number of cost-effective solutions that are shared in common across the Authority
- Shared services and collaboration with private, voluntary and public sector partners enables investments to deliver greater value
- Office space has been rationalised enabled by a flexible and mobile workforce using mobile technologies

#### **Flexible and Agile Working**

- Staff carry out their duties from any location using approved end user devices maximising their productivity
- Staff carry out business functions enabled by improved ICT systems and processes streamlined to remove duplication, maximise efficiency and support business change
- Business processes are supported by widely available automation and data integration
- Front office staff are supported by joined up systems and processes which maximise their ability to deliver personalised services and enhance the customer experience
- Staff can focus on their business functions supported by a suitable and reliable infrastructure, both within the office and remotely

#### **Maximise Value of Information**

- Information is managed as a corporate resource, recognised as vital to the success of the Council and its partners
- Decision making is rapid and informed by accurate and easy to use management information and reporting
- Staff, partners and service providers handle information collaboratively and securely according to best practice standards
- The Council's key systems are connected using standard methods, and streamlined business processes can access information as required through a corporate integration capability
- Documents and Records are stored and accessible to enable appropriate sharing between staff and with partners and the public consistently in line with the Data Protection Act and Council information management policy

#### **Effective Partnership and Inter-agency Working**

- The Council's infrastructure and applications are integrated with that of partner organisations, to support a multi-agency shared service culture across shared locations
- The mobile and multi-agency workforce uses shared protocols and common solutions to collaborate and share information to support seamless joined up working

#### **Strong and Appropriate Security and Compliance**

- The technology services used provide an appropriate level of security and assurance to ensure the Council can meet its obligations under the law, and are compliant with the public services network and with the information management strategy
- Appropriate and proportionate security is applied to information systems to enable broad availability across numerous access methods without compromise to data security or Cabinet Office accreditation

In order to deliver the strategic vision, four delivery themes have been identified:

- **Mobile & Flexible:** Providing support for a range of devices and connectivity methods to enable staff to be more mobile and less dependent on offices while remaining connected with their teams, systems and information
- **Integrated & Digital:** Enabling data and information assets to be stored, shared and consumed electronically and in a compliant way to reduce the use of paper and integrate systems effectively
- **Secure & Reliable:** Delivering a reliable, robust and secure service which makes best use of existing investment, reduces duplication and ensures it delivers what the business needs
- **Partnership & Sharing:** Enabling working and sharing with Barnet residents, local businesses, partners and third parties through pooling resources and creating shared platforms accessible through a variety of channels

These themes build on the ICT transformation programmes which have run since September 2013 creating a very strong foundation for a capability-based strategy. Establishing core capabilities will support the Council's transformation and efficiency objectives in a consistent and re-usable way avoiding the cycle of buying new services for every new initiative and allowing existing ones to fall out of support whilst still being depended upon. The incremental benefit of this approach is illustrated below:

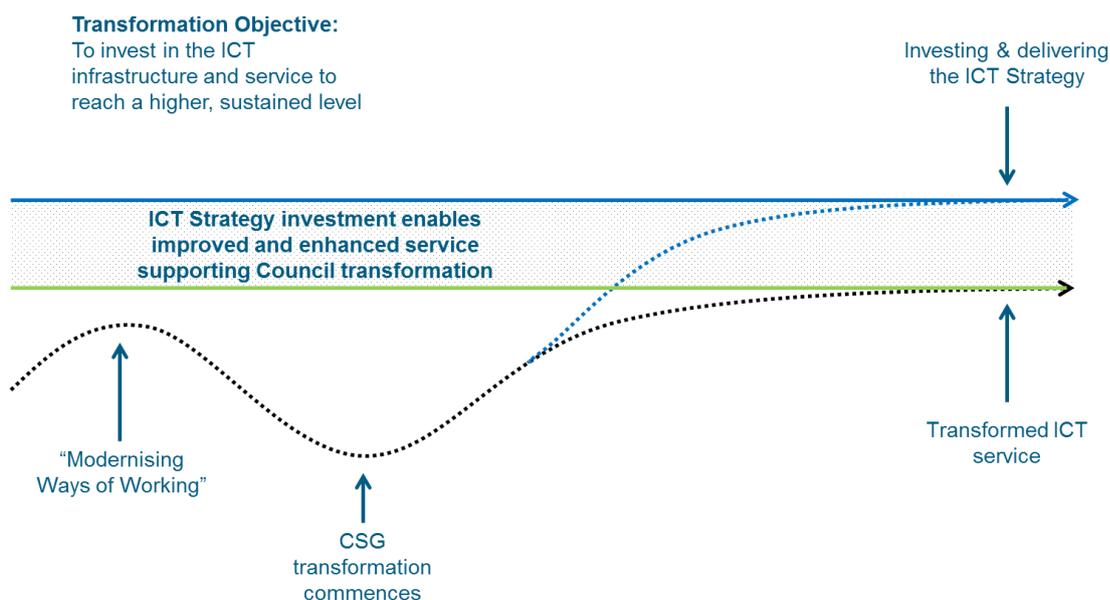
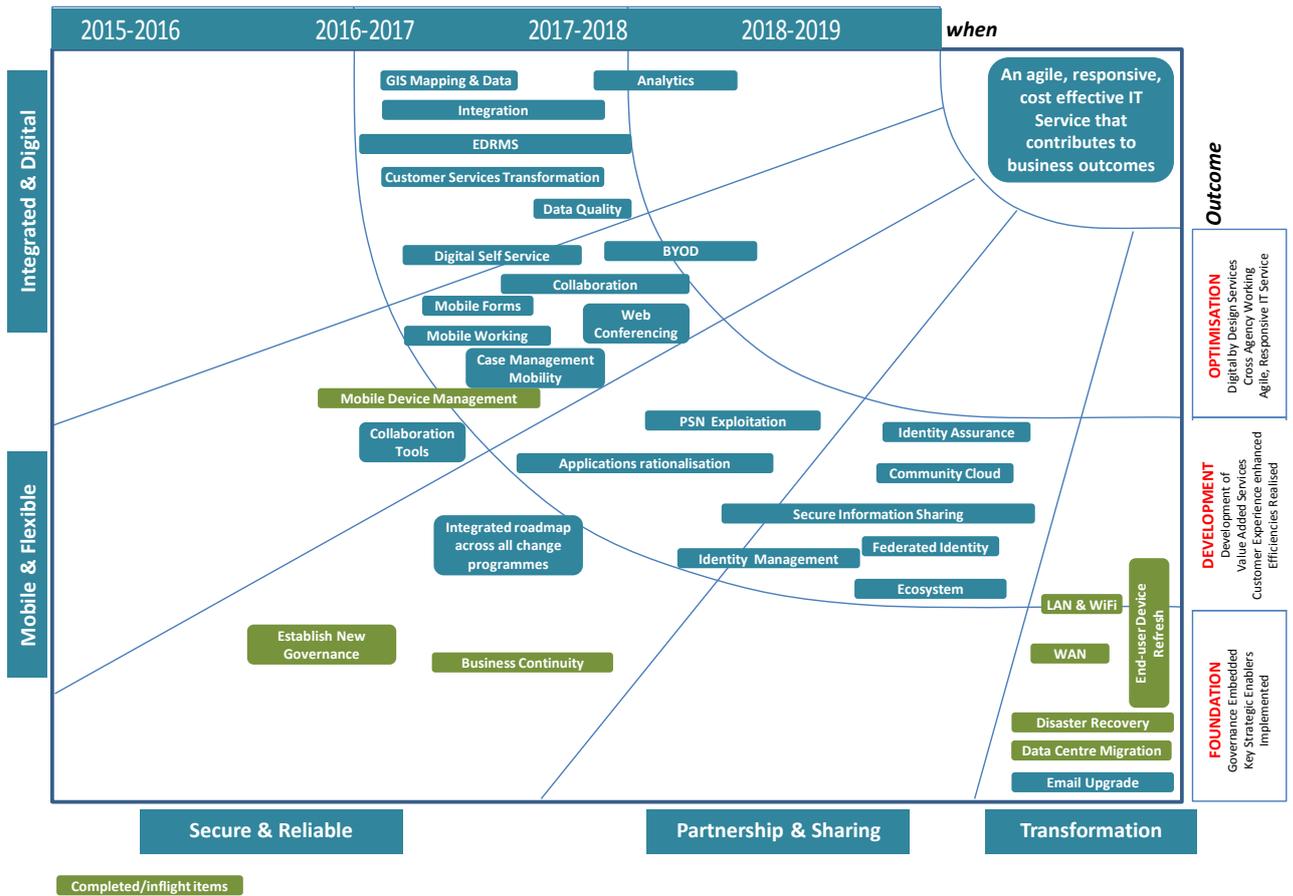


Figure 1: Enabling Council transformation beyond ICT transformation

The roadmap shows the broad timelines for the implementation of strategic platforms and capabilities including the internal steps which will make up their projects including:

- Requirements/Proof of Concept
- Product selection
- Design and Build
- Testing and Training
- Rollout



## 2 ICT STRATEGY – SETTING THE SCENE

### BACKGROUND

London Borough of Barnet Council faces a number of significant challenges over the next five years. Some of these are financial, some are organisational but all will impact upon the Council’s staff and customers. All portfolios and delivery units are faced with reducing costs whilst striving to enhance the quality of service delivery. Information and Communication Technology (ICT) can directly help by providing a robust and flexible technology platform for the Council to deliver services from and by introducing new, cost effective solutions.

ICT must also contribute to the savings the Council needs to make by providing solutions which represent value for money. Over the next five years we will see Government change the way it invests in ICT, and that Local Government organisations need to become increasingly aligned with Central Government, Health and partnerships. This will drive an increasing need to realise the benefits of shared services and alternative models of delivery.

Business involvement and ownership is essential to benefit from technology innovation. As we look to the future, ICT and the business work closely together to enable the Council to adapt to current and future challenges and organisational changes. ICT is an enabler as opposed to a driver of transformational change.

Thus, the overarching aim of this ICT Strategy is to provide clear and concise direction on how we will be investing in, managing and utilising ICT in the future, it provides pointers to business changes, but places the detail outside the scope of this document.

This document will be updated and reissued annually to reflect the impact of ongoing strategic planning and needs assessment, with any changes being captured back into ongoing ICT change programmes.

### ICT STRATEGY IN CONTEXT

**Where does the ICT Strategy fit?** This ICT Strategy is primarily influenced by the Information Management strategy. Its context is shown in the following diagram taken from the LBB IM Strategy:

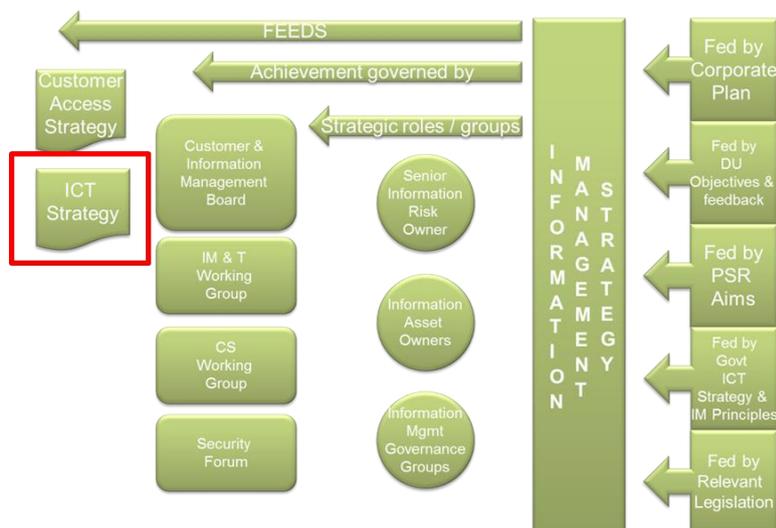


Figure 2: ICT strategy in context with IM strategy

**What is an ICT Strategy?** The purpose of an ICT strategy is to provide the Council with a clear vision for the future state of ICT Services, the core architecture underpinning the business and to provide a direction of travel from the current state to the future state. Importantly, the ICT Strategy is not focused on technology itself, but on how new or revised technology is introduced for business benefit.

**Why do we need an ICT Strategy?** A strategy provides a framework within which a business can operate. In ICT this means it ensures that the introduction, management and retirement of new systems, standards and infrastructure are planned efficiently and in a way that best meets the Council's needs whilst delivering value for money. A strategy helps to manage risks arising from uncoordinated and incremental growth of ICT services. It also aids the Council with managing priorities and financial investments over time.

**Who is the ICT Strategy for?** The ICT Strategy is an important reference source for anyone involved in business transformation, commissioning and any service delivery function that is enabled by technology within the Council. It is intended to support the business, partners and service delivery teams by clearly describing the journey being undertaken in the form of a roadmap of activities and outcomes.

**How was the ICT Strategy developed?** This ICT Strategy has been developed through broad consultation within the Council and an awareness of external drivers such as industry and local government trends, key life-cycle dates, commercial and governance requirements.

**Why is it important to get it right?** Investment in ICT needs to be aimed at supporting the key objectives of the Council whilst recognising that ICT alone is an enabler and in isolation cannot deliver sustainable benefits. Resources should be focused so that the correct type and level of ICT investment is provided on those priorities that will deliver the most benefits in terms of service delivery and value for money. It is also important for the strategy to drive consistent decision making to avoid unnecessary diversification of ICT and make best use of existing investments.

**Refreshing the ICT Strategy:** LBB is not standing still and must continually review its position as a business, reassess its local and national drivers, goals and priorities and update its approaches accordingly. The ICT strategy must be able to track these changes and update to suit. The strategy will be scheduled for review annually with an opportunity to consider an interim update should a material change in business goals or drivers become apparent.

**ICT Strategy Outcomes:** The ICT Strategy aims to enable the following outcomes:

- Ensure ICT alignment to business strategy and objectives (future vision)
- Opportunity to implement industry best practice
- Improve efficiency through an architectural approach
- Improve communications through demonstrable technology roadmaps
- Minimise tactical solutions through use of strategic components
- Maximise Return on Investment (ROI) through maximum utilisation and reuse of strategic investments
- Identify opportunities to exploit developing or existing capabilities
- Reduce financial, commercial and reputational risk

## LBB INFORMATION MANAGEMENT STRATEGY

The Information Management Strategy identifies Information as a strategic asset and the need to manage it well to realise its potential for the organisation. It describes a vision for LBB and a set of principles which support the vision and provide an influence for the management of the delivery of the IM Framework.

The vision for Information Management is as follows:

- Our information and data, whichever part of the council that collects it, is recognised as a **critical and strategic corporate asset owned by the council**, rather than the possession of an individual or service.
- We transform the **quality of the Barnet customer / resident experience through the provision, analysis and application of good quality, timely and targeted data and information** from a large range of organisational sources.
- We **understand the information and data we hold** (and the processes for its management and dissemination) and **realise its value and potential for lawful re use**, reflecting our desire to **collect data from staff and customers once and share with other parties that need it** (internally and externally).
- We manage our information and data (including information systems) in accordance with **Information Principles**.
- We aim to **ensure access to the right information, at the right time, to the right person, and in a swift and intuitive way**, ensuring that staff have the information required to perform their roles and that customers have access to information that supports them to take better control of their needs and interactions with the council.
- We approach the **protection of our information in a way that is consistent with its value, ownership and source** in order to ensure the confidentiality, integrity and availability of information and systems; and that **when our information and data is particularly sensitive, we are confident that it is kept securely**.
- We **train and guide our users** through the use of information systems and information processes, and **communicate information management initiatives and policies in an effective way**.
- We recognise that different parts of the council have different aims and objectives and that a **diverse approach to implementation** across the organisation will be required to meet the standards set out in this strategy.

The principles are as follows:

- Information is a valued asset
- Information is managed
- Information is fit for purpose
- Information is standardised
- Information is re-used
- Public information is published
- Residents and businesses can access information about themselves

The delivery framework approach is divided into 9 parts as follows:

1. Promote a governance structure that enforces a consistent approach to adoption of the Information Principles
2. Create and maintain practical and realistic information management policy and procedures
3. Structure our information and data stores in such a way that information and data can be effectively stored, found, used and re-used for the benefit of Barnet customers and staff
4. Introduce and maintain an information and data management architecture that fits the needs of the organisation
5. Use our information in a collaborative way, with appropriate technology and processes to help us achieve this
6. Promote a proportionate, risk based approach to security and information governance
7. Recognise the importance of managing data through a principled approach, ensuring the right quality of data to meet business purposes
8. Promote an open and transparent approach to the proactive and reactive release of data and information
9. See our information and data as a bedrock to enabling our Customer Access vision, channelling the Insight and release of data to make this a reality and that re-use is implicit in how we use our data and information

The IM Strategy goes on to identify its drivers and strategic forces:

- Barnet Corporate Plan 2013-2016
- Priorities and Spending Review 2016-2020
- Delivery Unit Objectives
- Customer Access Vision
- Partnership Approach
- Issues (staff feedback)

The detail of these drivers is included in the IM Strategy and replicated in Appendix 1. Since the ICT Strategy is required to enable the IM Strategy, all of these drivers are taken into account and alignment with their enablement identified.

### 3 CURRENT ICT SITUATION

In September 2013, Capita was appointed via the Customer and Support Group (CSG) contract to manage the ICT service and estate and behalf of the Council. As part of the contracted services, Capita embarked on two transformation programmes to improve the state of the ICT service and to deliver additional infrastructure and applications to support other CSG business transformations such as Finance, Human Resources, Customer Services, Insight, Corporate Programmes, Revenues & Benefits, Estates, Procurement and Schools traded services.

The ICT transformation programmes are ongoing into 2016. A large part of this involves implementing a fit for purpose infrastructure to deliver greater levels of service, increased agility for local staff working practices and building locations, support for business continuity and disaster recovery (DR), stronger virtualisation of servers and applications and bring all infrastructure components into a supportable state.

#### APPLICATIONS

The current applications landscape consists of a combination of business-specific services such as case management and information stores. There are also applications which could be considered corporate resources which are used by most or all users such as email, document management and directory services. Other than the business ICT services introduced through the CSG contract such as CRM and the data warehouse for Insight, there is little in the way of shared applications which can be directly exploited as strategic capabilities across LBB.

Currently the application estate includes a register of around 200 applications. However a scan with the new SNOW software indicates a detailed list of some 1,344 applications including their various versions and editions. For example there are 56 variants of Adobe products within the estate of which 22 are different versions of readers or media players. This sort of diversity impacts supportability and licensing and gives an inconsistent user experience.

Application delivery to remote users has been enhanced through the Citrix replacement project.

#### INFORMATION

The ongoing implementation of the IM Strategy is making inroads into bringing the storage and processing of information into standardised and policy-driven maintenance. There is considerable work still to do around data quality which could then lead to opportunities for effective systems integration, information sharing and process automation. There are considerable opportunities to create enabling ICT capabilities through the strategy to support the IM strategy and improve efficiency across the Council.

## INFRASTRUCTURE

The following diagram provides a high-level illustration of the transformed ICT estate upon which this strategy will build and extend the ICT capabilities at LBB:

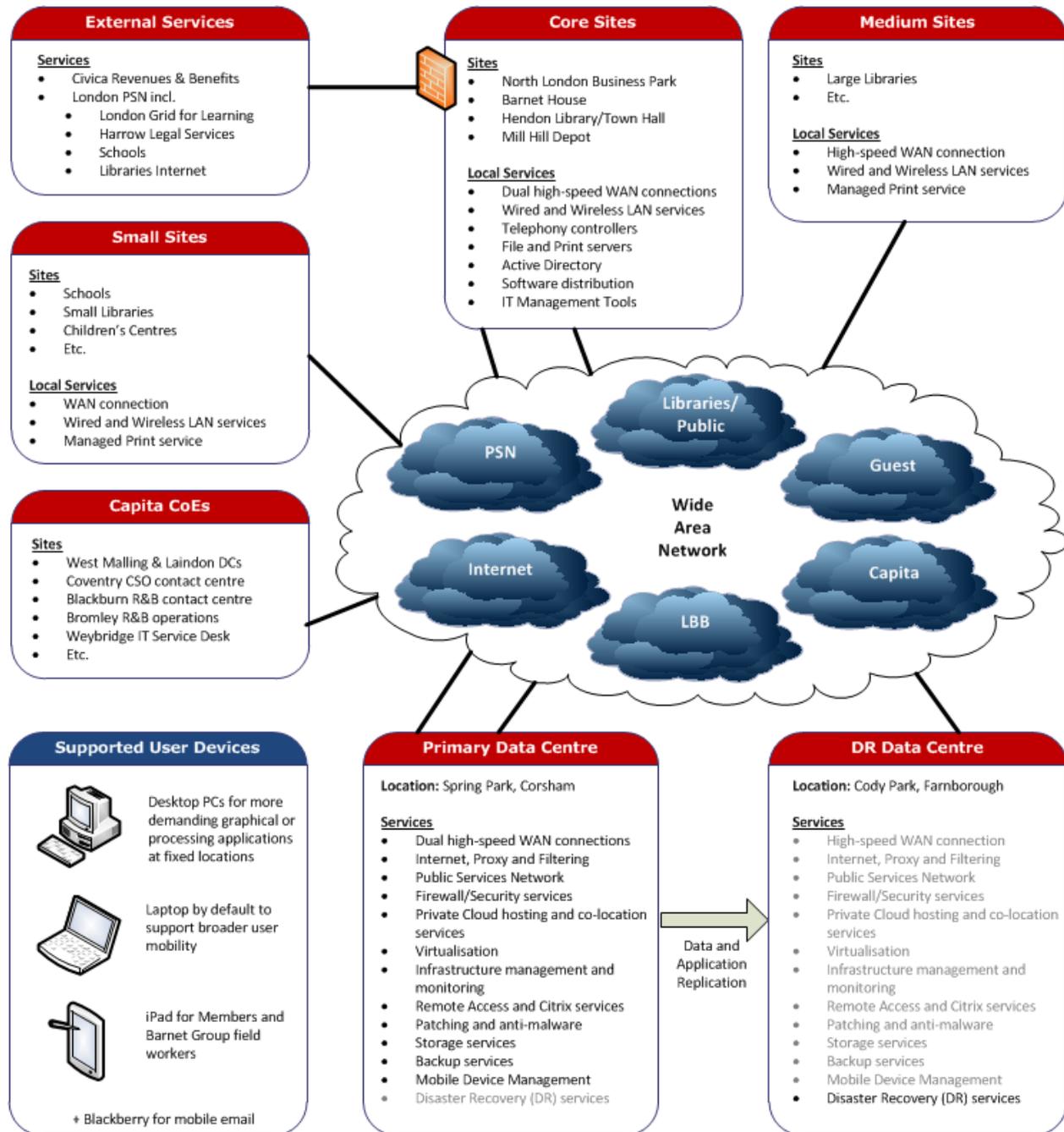


Figure 3: Post-transformation ICT infrastructure

The key features of transformed ICT include:

- moving the majority of server and application resources into primary and secondary data centres delivering higher levels of service, DR and reduced dependence on LBB sites for ICT delivery,
- a new Wide Area Network removing dependency on LBB sites to act as relays of network traffic, stronger management and quality of service, compliance with PSN CoCo and more flexible deployment to a changing user base and property estate
- refreshed Local Area networks at each site and a cyclical end user device refresh regime
- refreshed/renewed core infrastructure services such as email, Citrix client services, remote access
- service improvement projects including a new service desk, ISO20000-based management and Information Security Management System

The strategic aim for technology infrastructure and applications is to increasingly standardise and consolidate in the areas of data centre, network, end user devices and telephony.

## COMMUNICATIONS

The ICT transformation is delivering a step change in the quality and serviceability of the networks in LBB through the Wide Area Network (WAN), Local Area Network (LAN) and Wireless projects. This will deliver site independence for access to ICT resources for an increasingly dispersed workforce. This should be considered an essential bedrock for delivery of the capabilities in this strategy.

Current telephony services are delivered using a combination of Cisco IP Telephony for LBB sites and Capita's Managed Voice Service for the Customer Services contact centre. For mobile telephony, the primary service is delivered through a recently negotiated contract with O2 and standard mobile or RIM Blackberry handsets.

## SECURITY

ICT security is managed through both governance and the implementation of an Information Security Management System (ISMS). The latter is being delivered as part of the ICT service improvement programme and was initiated within the transformation programme.

The design of the new networks both within the data centres and across LBB has security inbuilt and this has been reflected through continued achievement of PSN code of connection accreditation annually. There are still improvements which can be made to ensure security is proportionate to the access needs of the user versus the requirements of policy and these are to be considered in this strategy.

## SERVICE MANAGEMENT AND SUPPORT

Service management and support are provided by a team located in Barnet supported by other Capita and external organisations. Core applications and infrastructure teams are local managed by a service delivery manager and operations manager.

The ICT service desk is managed by the local team. Other Capita teams provide additional resource support to the local function as well as data centre operations and some specialist applications support. Third party contracts for application support are run by Capita to ensure appropriate depth of services across the application estate commensurate with the service level requirements of the contract.

## PROGRAMMES AND PROJECTS

A programme and projects team is in place in Barnet to manage and support the implementation of projects across all LBB business areas. These include bespoke systems in support of business change, new/replacement systems, infrastructure and desktops.

Projects of varying sizes are accommodated ranging from smaller workpackages through to large programmes. Capita can call upon internal dedicated project resources, local ICT service staff and the considerable breadths of skills across Capita and partner organisations.

## 4 FUTURE STATE OF ICT SERVICES

The ICT strategic needs of the Council have been derived from a combination of documentary inputs such as the corporate plan and the IM strategy and a board range of consultation across commissioners and delivery units and partners.

As stated previously, the aim of this strategy is to build upon the transformed ICT infrastructure as a modern, robust and flexible service. The focus is to establish a range of corporate level capabilities which link to business drivers and initiatives. These are to be adopted as the standard solutions for the majority of non-specialist requirements to deliver reusability, economy of scale, standardised solutions and excellent interoperability. The capabilities are determined from the strategic themes which in turn have been defined from the strategic needs.

### BUSINESS DRIVERS

The themes have been validated against the results of extensive consultation activities which have led to the understanding of the business drivers affecting this strategy. The details of the drivers and how they link to the themes are contained in Appendix 3. The following depiction shows the desired outcomes from the drivers which the themes will be expected to deliver:



Figure 4: Business driver outcomes

In addition to these there were some key priority messages which were taken from the stakeholder interview process and are used as additional principles in constructing this strategy and will be used to influence delivery. These are shown below:

- Never assume that users are unable or unwilling to use new technologies nor that they cannot provide key insights into transformation opportunities
- Integration and interfaces are essential for information exchange with partners – some will require compliance with external standards whilst others will need to comply with Council defined standards
- Accurate and efficient case management is key to managing performance and deriving essential analytical decision support
- Enable the drive for information provision and transactions for customers towards self-service channels
- Enable the broadest range of fit-for-purpose device types to access ICT services so that users only need office space due to team needs rather than technology and business process limitations – but limit the number of devices an individual requires to do their role
- Provide consistent, converged and compatible productivity applications to avoid unreadable or unusable shared documents and data
- Provide a usable and reliable geospatial-enabled data platform
- Promote and enable trust in the stewardship of customer and partner information through data quality and integrity processes – store once and use many times
- Make the ICT user experience attractive, reliable and good value to encourage continuous take up across the broadest possible range of Council and partner organisations
- Make user authentication and security proportionate and as simple to use as possible while recognising the need to comply with policy

### STRATEGIC IT THEMES

A number of business capabilities have been identified as key to the Council meeting its challenges and achieving its vision. These capabilities fall into four Strategic IT Themes with core components:

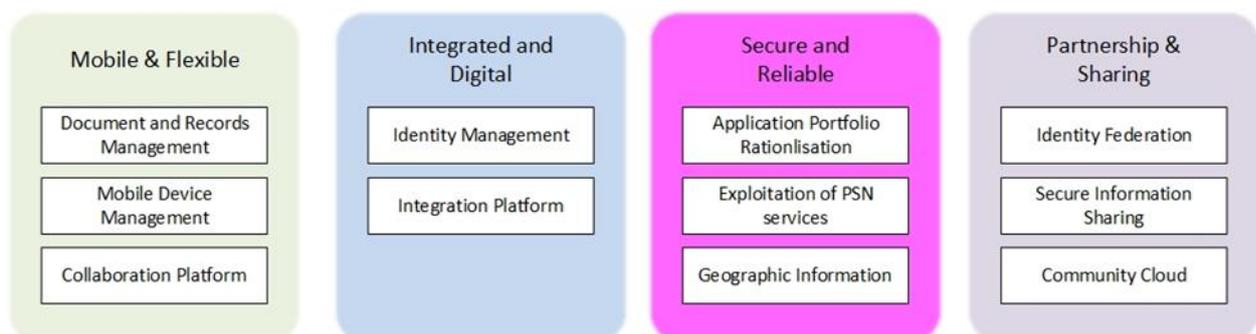
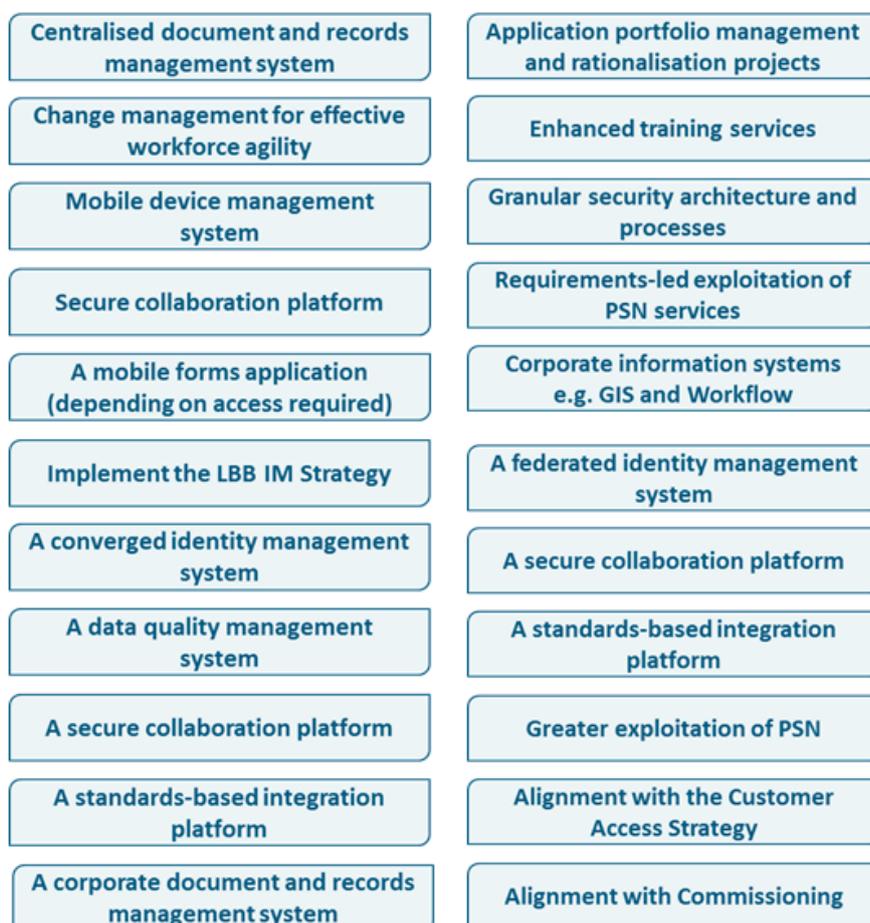


Figure 5: IT Themes

The strategic themes are:

- Mobile & Flexible:** Staff are mobile and less dependent on offices while remaining connected with their teams, systems and information. Providing support for a range of devices and connectivity methods to enable staff to be more mobile and less dependent on offices while remaining connected with their teams, systems and information
- Integrated & Digital:** Systems are integrated enabling data to be stored, shared and consumed digitally and securely, to drive reliable, consistent and efficient processes. Enabling data and information assets to be stored, shared and consumed electronically and in a compliant way to reduce the use of paper and integrate systems effectively
- Secure & Reliable:** A reliable and secure service that leverages existing investment, reduces duplication, and delivers what the business needs. Delivering a reliable, robust and secure service which makes best use of existing investment, reduces duplication and ensures it delivers what the business needs
- Partnership & Sharing:** Platforms are shared and accessible through a variety of channels, enabling collaboration with residents, local businesses, partners and third parties. Enabling working and sharing with Barnet residents, local businesses, partners and third parties through pooling resources and creating shared platforms accessible through a variety of channels

In order to deliver the drivers and outcomes there are a number of specific ICT capabilities which need to be established either through adapting and enhancing existing applications within the LBB landscape or introducing new ones. These capabilities are as follows:



**Figure 6: Strategic ICT capabilities**

These capabilities will provide a better user experience, service and reduced cost to run. The intention is not only to implement these services but to retire (where feasible) any other systems or components which duplicate, in whole or in part, these functions. This is required to realise the benefit of value for money and reduce technology diversity.

The core capabilities are arranged in line with a strategic ICT architecture to deliver a componentised landscape which can be organised and deployed in a variety of ways to satisfy business requirements. The following diagram illustrates the candidate architecture:

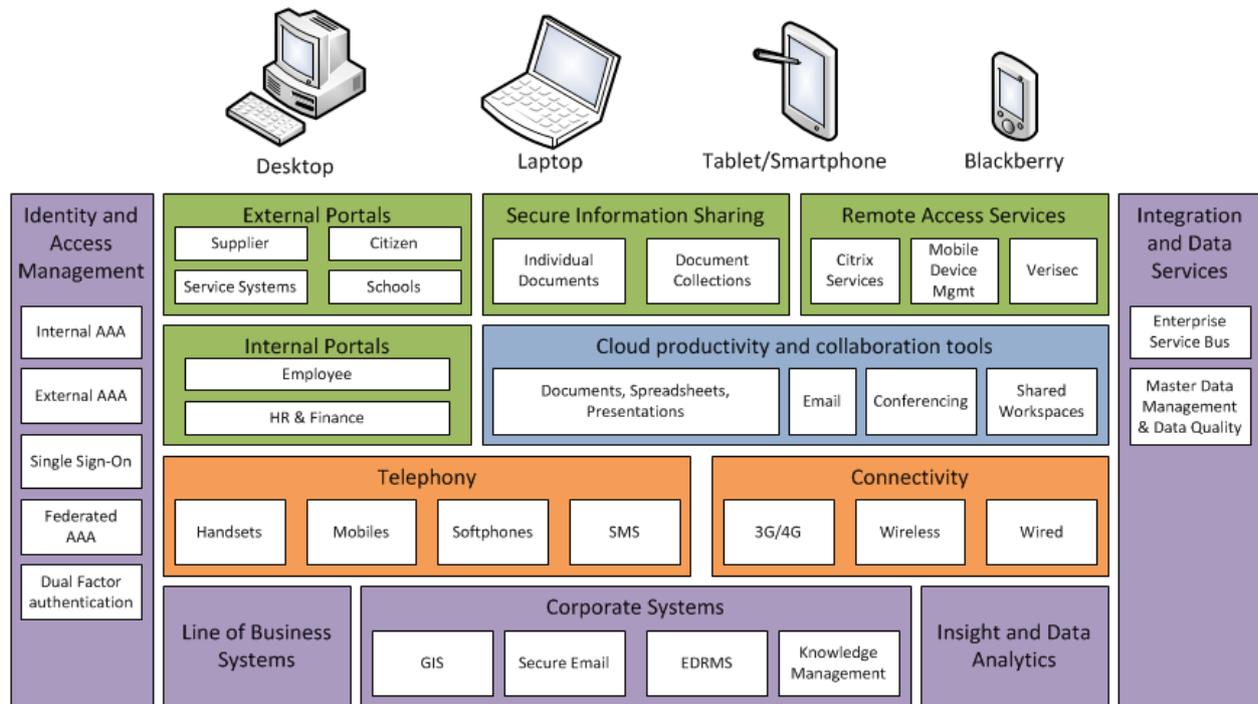


Figure 7: Candidate strategic ICT Architecture

A common set of capabilities provide the “glue” around the internal business systems and the externally facing services as consumed by users with a variety of devices. The purpose is to achieve a consistent way of delivering services and information securely to a variety of consumers while maintaining value by achieving improved economies and efficiencies. Economies are achieved by having a less diverse estate and so reducing costs to manage, a smaller skill set to maintain in support and development and reduced user training. This also leads to efficiencies by enabling a greater degree of re-use when change occurs – for instance when systems are replaced.

The capabilities may not necessarily be one single application (although the fewer the better to minimise interoperability issues), but rather a set of services specified to fulfil business requirements.

In order to be effective the capabilities are dependent on each other. For example integration is dependent on having good quality information. The following sections summarise each capability and how they contribute to delivering the strategic themes. They are described in more detail in Appendix 4.

## Integration

An Enterprise Service Bus (ESB) which is capable of communicating with a broad range of systems using a broad range of protocols and message formats. Able to orchestrate multi-step information exchanges and provide data mapping and transformation services. Able to provide consistent, consumable services from data stores for the consumption of business systems e.g. LLPG feeds.

This would be a new service to be implemented at Barnet.

- 2 Provides consistent and manageable information transfer, orchestration and provides data services from the data quality platform
- 3 Provides a secure and consistent integration point for all systems, eliminating bespoke “spaghetti” integrations which are complex and expensive to maintain
- 4 Potential for providing information and data access for external agencies and partners

## Data Quality and Data Management

A repository and toolset to store, match, analyse and report on numerous data sources. Able to apply complex matching rules and build aggregated, reliable data sets. Able to provide an automated cleansing feed via the integration platform. Able to provide definitive reference data to business systems and for Information Asset Owners.

Consideration should be given as to whether existing toolsets (such as those used for the Insight data warehouse), could fulfil this requirement.

- 2 Provides the basis for data quality capture, analysis, reporting and cleansing. Acts as a reference point for other business systems. Enables effective integration by ensuring consistent indexing information is accessed by all business systems to avoid duplication and mismatches
- 3 Provides improved assurance that data protection is minimised e.g. by avoiding the inadvertent matching of incorrect customer records between systems

## Identity & Access Management

A common identity management capability enabling a single point of the truth for managing access, revocation, authentication and authorisation of system users. Able to interface with HR records to ensure identity information is kept up to date. Able to federate with other identity providers, both external and internal. Able to support a wide range of industry authentication protocols. Able to deliver multi-factor authentication capabilities. Able to support multiple user contexts against a single identity.

This could be an extension to the current Barnet active directory in combination with the existing authentication appliances. Could require significant extension for non-Microsoft authentication requirements and applications. Should strongly consider the Government Digital Service identity assurance for external customers and service consumers.

- 1 Provides a single identity service for user information, authentication and authorisation for remote access, application access and directory services irrespective of the user’s approved device or method of connectivity
- 2 Provides a reliable source of user information linked to authoritative sources e.g. HR, in a single location
- 3 Provides a reliable, single security persona for users allowing for rapid and effective changes linked to business processes such as starters, movers and leavers e.g. revocation of access to numerous systems from a single management interface
- 4 Provides a strong authentication and federation capability for secure information sharing with external parties

## Geographic Information

A corporate GIS unifying GI and its management across the Council. Accurate geospatial data is critical to keeping customers informed, for example advising residents of planned works in their area, as well as being essential for asset management and effectively planning and managing the Barnet environment.

- 1 Assists field workers in accurately arriving at service delivery and incident locations and associated supporting information e.g. street lamp asset information
- 2 Provides an authoritative source of geographic information to a variety of internal and external users in both mapped and data forms

## Electronic Document and Records Management (EDRMS)

A key enabler of the IM Strategy, EDRMS enables centralisation of document storage and records management and provides a secure, efficient access from a variety of locations. Able to provide document storage to business applications. Provides scanning capabilities and supports a common taxonomy, metadata model and features to automate their population such as barcoding and intelligent character recognition. Able to support paperless office initiatives and access to documentation for mobile workers. Able to act as a corporate-wide electronic information store.

- 1 Enables access to business information from any corporately enabled device in any location with appropriate security controls; no need to “return to base” to access paper files
- 2 Provides a corporate document and records management capability enabling electronic delivery of information and consistent security; reduces diversity of information storage structures and repositories
- 3 Greater exploitation of existing systems across the corporate domain; reduce proliferation of document management and storage e.g. shared drives
- 4 Provides a robust, secure repository for information sharing when associated with federated identity management

## Collaboration

Delivers tools to facilitate shared work spaces and communication both internally and with external partners. Consists of configurable shared spaces and meeting tools including audio and video conferencing, email, calendar, contacts, etc. Able to provide presence information (if this is proven to have some value). Enables secure shared spaces for working with external parties – linked with Integration to deliver data services. Able to act as the “shop front” for staff to access automated processes, work items and EDRMS linked to the employee portal.

Should include consideration of Office 365 and associated Microsoft tools such as SharePoint and Skype for Business.

- 1 Enables collaboration, sharing and access to productivity tools to an increasingly mobile workforce and between partner organisations; improves lines of communication
- 2 Enables the reduction of unstructured information stores and a consistent, secure data sharing environment
- 3 Provides a consistent, usable solution across internal and external information sharing and collaboration use cases; reduces the diversity of communication tools; drive towards cloud-based solutions for commodity applications
- 4 Provides a robust, secure platform for collaboration with partners

## Mobile Forms

Enables simplified and out-of-band access to business process, service delivery and productivity tools directly focussed at the task at hand. Able to deliver a cut-down and device-friendly user interface for field working without needing access to a full-blown business system for relatively simple, repetitive tasks. Requires integration to fetch and deliver information to business systems. This would be a new service to be implemented at Barnet.

- 1 Enables field working across a broad range of devices where a business system may not lend itself to ease of use and simplicity; provides off line working capabilities
- 2 Assists with improvement in data quality by focussing field working processes at task-based data capture and validation closest to the point of data collection

## THE BUSINESS VALUE OF ICT IN BARNET

ICT is essential to the delivery of services in Barnet and to support the achievement of the Corporate and Delivery Unit plans. The value and effectiveness of ICT can be measured in terms of (a) the “fitness for purpose” of systems to support business operations, (b) the cost of ownership, and (c) its alignment with the strategic technology environment. The aim of the strategy is to address these elements to improve fitness for purpose and strategic alignment while maintaining value for money.

As well as establishing common, core capabilities within the ICT estate, the applications portfolio itself needs to be assessed and rationalised. This reflects the driver to make best use of existing ICT investments and to drive down operational costs through reduced complexity of the application estate.

The ICT service is delivering a Service Improvement Programme (SIP) as initiated by the transformation programme. This includes an application portfolio management workstream which includes a rationalisation methodology.

Each application will be assessed and charted according to Business effectiveness and Technology state. The size of the bubble represents the total cost of ownership and can be improved by indicating the level of business risk of each application not being available to staff and managers to help assure the correct level of BCP and DR is provided. There is also the facility to show where known investment is already planned (the red and green arrows). Decisions can then be made as to what to do next using a “four R’s” approach: Redesign, Retain, Retire, Refresh. The following diagram is an example of a portfolio assessment output and will be developed by the SIP in due course to support development of the strategic roadmap (note this will require input from the Delivery Units and Information Management to assess a score for the business fit measure):

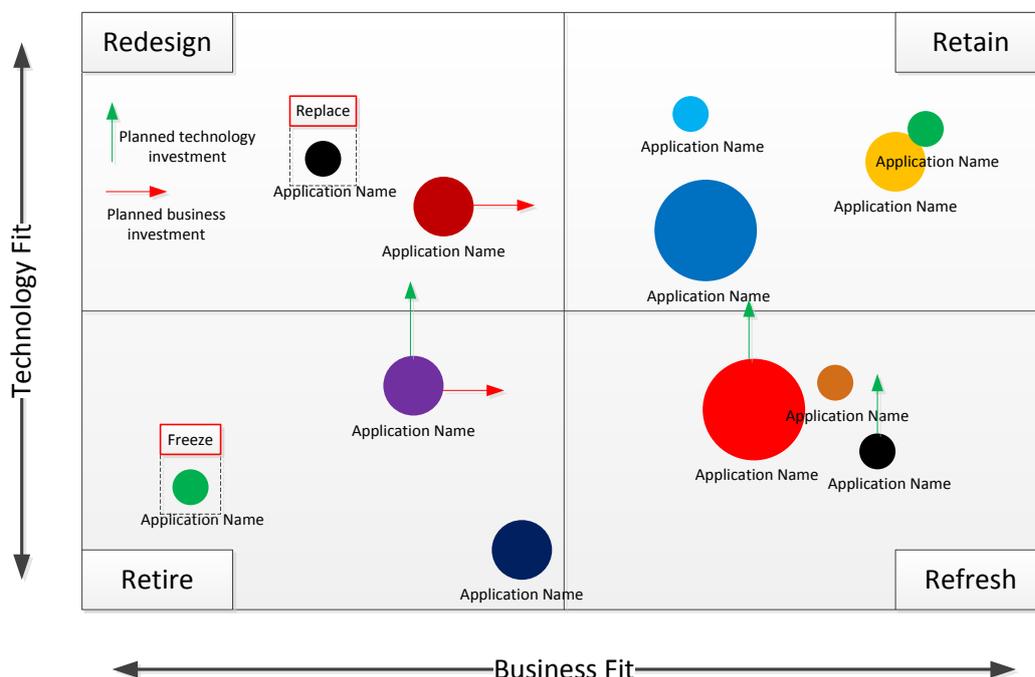


Figure 8: Sample application portfolio assessment diagram

By mapping or charting the applications in this way, a default course of action is suggested for each application. In some specific cases other drivers will override the default.

- Redesign – the upper left quadrant represents those applications which have a strong technology state e.g. strategic fit, but a low business effectiveness e.g. functional fit with business requirements. This suggests rework is needed to getting it working better for the users.
- Retain – the upper right quadrant represents those applications which have both a strong technology state and strong business effectiveness. The latter quality suggests that investing in strengthening the technology state through a refresh would represent the best value for the business.
- Retire – the bottom left quadrant represents those applications which have a weak technology state such as a poor strategic fit or out of date/unsupported components and low business effectiveness. This suggests that the application has very little value and should be retired.
- Refresh – the bottom right quadrant represents those applications which have weak technology state and strong business effectiveness. This suggests retaining it in its existing state is the best future action.

All of the above positions will need to be tempered by the financial dimension. For example an application with a strong fit in the upper right quadrant but is expensive to develop and maintain may lend itself to additional scrutiny as to whether it should be retained or replaced.

More detailed analysis may alter the initial assessment for an application and a business case to improve the application will be needed. An opportunity to reduce ICT cost and improve value for Barnet may be to add applications that need remedial work to the scope of business transformation projects that impact the business unit and users of the application.

The application portfolio assessment will also enable a roadmap to be developed showing upgrade paths and functional capabilities to allow a greater degree of lifecycle planning and a more distant business as usual change horizon. This means that upgrade events and keeping applications within support becomes a more predictable process and allows the business to plan ahead e.g. when user acceptance testing will be required and how to avoid heavy activity peaks such as year-end. Functional capability maps allows for planning and consolidation to understand where change and new requirements could be satisfied by an existing component rather than investing afresh every time.

## ENTERPRISE ARCHITECTURE

This strategy promotes the use of Enterprise Architecture (EA) to drive value out of investments in ICT. It does this by aligning organisation-wide ICT strategy and governance to the goals, drivers and objectives of business operations.

The EA approach is simple to describe and harder to deliver due to the temptation to optimise locally which prevents the realisation of corporate benefits. The purpose of EA is to relate the impact of change from four different perspectives to improve corporate decision making and resource allocation. The four different perspectives used in the Government IT strategy and TOGAF<sup>2</sup> version 9.1 are Business, Information, Application and Technology (Infrastructure).

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<sup>2</sup> TOGAF: The Open Group Architecture Framework

This model is often represented in the form of a reference architecture. This is a representation of the categorisation of all ICT and related business drivers, objectives and goals against which all ICT components and change must be measured for compliance. The governance for this is described in the Governance section below.

The candidate top level (“Level 0”) reference architecture for Barnet is shown below:

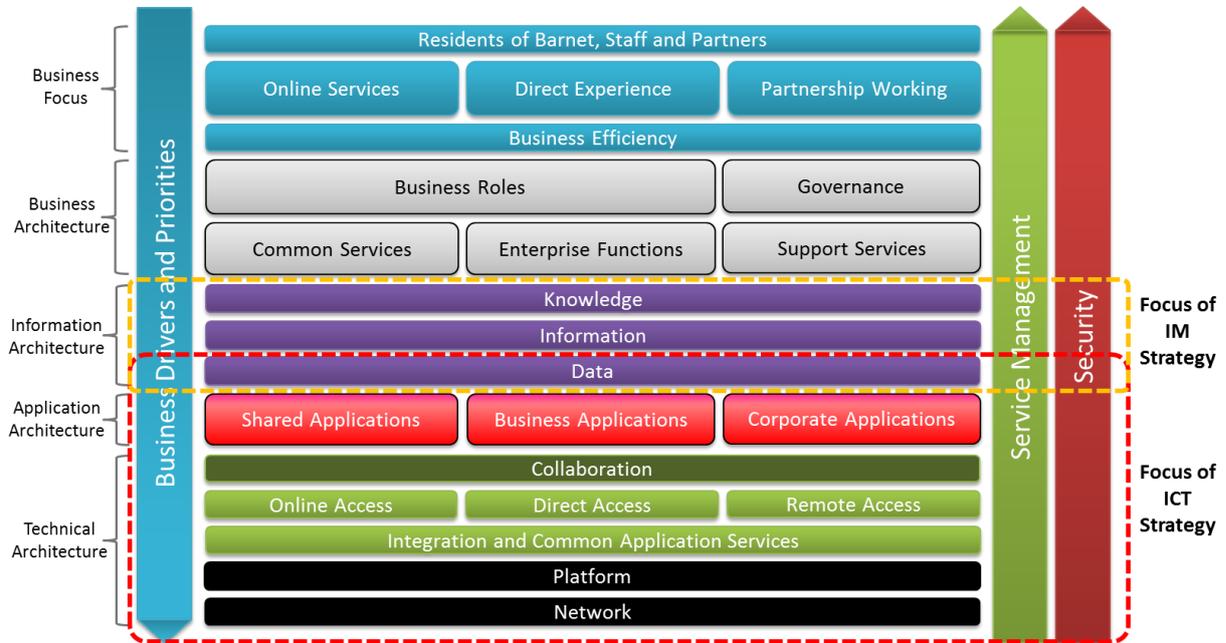


Figure 9: Level 0 Reference Architecture candidate

The reference architecture is developed to the next level by populating the Level 0 category areas with architectural components. The top-down approach allows viewpoints to be developed which focus on the specific interests of different stakeholders.

From this top level, further levels of granularity or drill-down can be modelled to represent the complexities of the ICT estate and how its interdependencies and interfaces are related. Usually a complete modelling of the enterprise is not useful or even affordable. Rather, efforts are focussed on where the greatest value lies i.e. where real change is taking place. The model then naturally matures and builds over time.

To realise improved value of ICT, the architectural maturity of the enterprise needs to improve. The MIT Center for Information Systems Research published a paper in February 2006 which described four levels of maturity. This was revisited in a paper<sup>3</sup> in February 2011 which defines the maturity levels as:

1. Business silos: in their early years, firms build point solutions and localised business systems to respond to immediate business opportunities. The result is a complex, expensive and risky technology and business process environment.
2. Standardised technology: firms pursue operational excellence within IT, specifically low unit cost and high reliability. They develop disciplined processes around IT investment prioritisation, project methodology, IT service delivery and standards management.
3. Optimised core: firms invest in digitised data and process platforms (packaged or customised integrated core transactions processing systems). Digitisation no longer focuses on solutions to local or functional priorities; management defines and funds enterprise priorities.
4. Business modularity: firms define strategic initiatives that leverage the capabilities of the firm's digital platform. Operational level decision makers base decisions on clear business rules and reliable data. Strategic decision makers rely on data analytics to consistently improve business rules. Occasional off-platform experiments address the risks of disruptive technologies and business trends.

In simpler terms, the maturity levels represent the progression from very complex, expensive, locally driven and non-integrated ICT estates to a centralised and strongly governed reduced collection of flexible systems. The payoff is how to identify the most appropriate and aspirational level of maturity for an organisation such as LBB whose services are diverse in nature.

Study of the LBB estate and applications landscape suggests that the Council currently sits between the business silo and standardised technology levels. It is recommended that LBB aspire to level 3: optimised core. This has benefits to cost of service as well as improved governance and a reduced complexity of the ICT estate.

The reduction in costs can be attributed to the application of Enterprise Architecture governance, joined up thinking, an increase in sharing of a homogenised ICT application and infrastructure estate. The improved estate underpins the strategy as it will enable improved information flow to staff, residents and partners.

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<sup>3</sup> 2011 MIT Sloan CISR, Ross and Beath

The implications to governance of a move to an optimised core level of maturity are as follows which shows the capabilities which will need to be grown or introduced (and at which maturity level they are introduced):

Business Silos	Standardised Technology	Optimised Core
Business cases Project methodology	Business cases Project methodology IT Steering Committee Formal compliance process Centralised funding of enterprise applications Architects on project team Architecture exception process Infrastructure renewal process Centralised standards team	Business cases Project methodology IT Steering Committee Formal compliance process Centralised funding of enterprise applications Architects on project team Architecture exception process Infrastructure renewal process Centralised standards team Process owners Enterprise Architecture principles Business leadership of project teams Senior executive oversight IT Programme Managers

Figure 10: Governance requirements matched to maturity levels

For EA to be implemented effectively, it needs to work closely with the Programme Management Office and Service Management functions as well as the Delivery Unit leads. This will ensure that the ICT decisions made in aligning this strategy with the corporate and directorate business needs and deliver the benefits to LBB. It is through governance that the traceability of decision making will be achieved. The transparency resulting from evidence based decisions will be the foundation for agreeing the most optimal ICT changes for Barnet.

### BUSINESS CHANGE TO ICT

Business Partners and the ICT Architecture Office (see the section on Governance) will provide the link between LBB and ICT in order to support the development of initiatives and required change into solutions. This is relevant whether the change is initiated and managed by ICT or Business. This link will ensure that the impact of the change will be fully considered from all four EA perspectives of Business, Information, Application and Technology leading to maximised value and minimised risk.

Effectively the Architecture Office, led by the Enterprise Architect, provides the capability to evaluate the business requirements, options, re-use opportunities and enable the optimum solution. This process has a number of goals and roles to ensure the right outcomes are achieved:

- Business to state requirements as business outcomes
- Business to estimate benefits to be realised
- Technology changes to be described in simple business language
- Technology changes to show evidence for decisions made
- Maintain an open mind to innovation and challenge the way we do things

This approach links back to the key tenet that ICT enables business benefits and should not be used as the key driver of transformation or “ICT-led transformation”. The typical outcome of this kind of practice is inappropriate solutions which force the business to do what the systems dictate and not the other way around.

## INFRASTRUCTURE

The ICT transformation programmes have, and are continuing to improve the infrastructure in Barnet. This includes a variety of areas as described in section 3. The new technology areas and enhancements include:

- New dual data centre environments providing resilience and disaster recovery capabilities and migration of the LBB server estate into them
- New Citrix platform
- Desktop refresh programme
- Local area network refresh including wireless capability
- Wide area network replacement including removal of dependency on Barnet sites to act as core locations
- Links to Capita centres of excellence for the provision of outsourced business services

As part of this process a number of applications which are classed as infrastructure services e.g. Email, Active Directory, management and monitoring tools, etc. have been refreshed and brought into long term supportable condition.

Although the key focus of the strategy is application capabilities, there are some areas which it can now look to build on. The key areas which fall into this category are:

- End user devices – in particular to deliver mobile working
- Telephony
- Data Centre/Cloud services

These areas are described in more detail below and show how they contribute to delivering the strategic themes.

### **End User Devices (see also Appendix 5)**

The Smarter Working programme vision and roadmap provides a number of recommendations and “next steps” which consistently show a desire to expand the use of iPads/“other tablets”, smartphones and hybrid devices.

From a strategic perspective, there is already a mobile device management (MDM) platform in place to manage and enable the use of certain mobile devices with some corporate systems. There are already over 250 iPads in use across the Council and Barnet Group with access to certain applications which have been cleared for use with these types of devices such as email. It is recommended to perform a recheck of strategic MDM to ensure the right product is in use as this is a very fast moving market.

The following diagram shows an example of how mobile device management works to control security and provide application access:

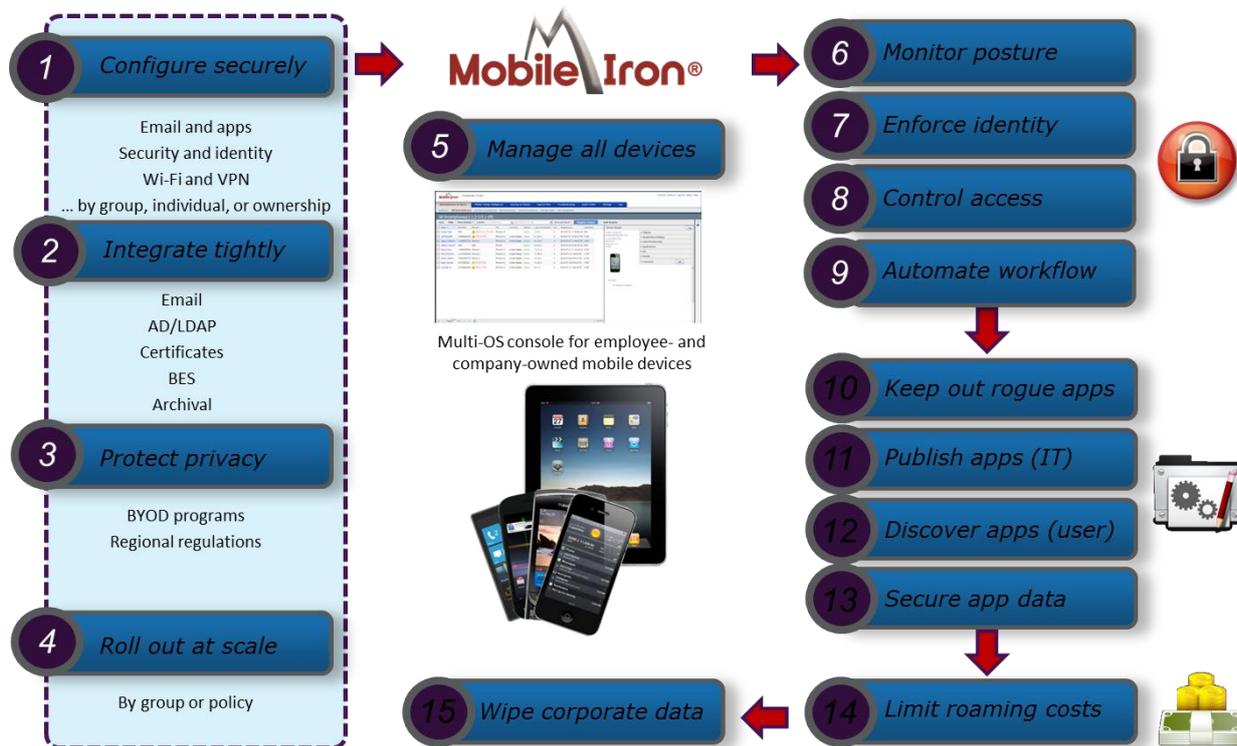


Figure 11: Mobile device management

Concerns about security and compatibility with Council systems suggest that a Windows-based tablet should be added to the catalogue alongside the iPad and an evaluation for this will be commencing as part of the “laptop first” proposal within the desktop refresh project.

Procuring tablet and smartphone devices alone however does not provide mobile working. A process of evaluation is required for each application which might be opened up for use with these mobile devices. Some will not lend themselves to mobile working in terms of their user interface or licensing profile. Some will not be adaptable to touch screen use and some may not support off line working where this is needed. If an application cannot be made to work in a mobile fashion, a Mobile Forms product can be used to take the required data capture and processing tasks off line – as described in the Applications section above.

Bring Your Own Device (BYOD) is only just emerging as a viable solution due to the relaxing of the Cabinet Office stance and improvements in policy management technology (see the Security and Mobile Working section below). An evaluation is required of the guidance as part of the roadmap exercise and a pilot recommended before committing to this as a strategic service to be delivered.

Current end user devices (primarily laptops) will continue to be refreshed through the programme established through the transformation programme.

### Telephony

The Council already has a Voice over IP (VoIP) telephony service which enables internal calls to be routed across the data network as opposed to needing to maintain two separate sets of wiring for voice and data. The advantage this can bring to mobile workers especially is the use of softphones on laptops removing the need for a separate handset and allowing better directory look-up, integration with presence applications and automation of telephony-based process at the desktop. Currently there are

no specific use-cases identified for this service and will be explored in more detail in the roadmap development.

Cost savings can be achieved on Council-owned mobile charges by introducing fixed-to-mobile convergence. This consists of a link to the mobile phone provider and negotiating preferential rates for calls to identified Council mobile numbers. This can also enable the use of a single phone extension number for Council staff enabling them to be contacted whether in the office or out on the road using one number. The system will determine which phone to ring depending on presence information or alternatively ring both.

### **Data Centre and Cloud services**

As part of the CSG contract, Capita built a data centre infrastructure with the ability to grow high-performing, utility-based hosting services with the provision of disaster recovery for those systems qualifying on the basis of business criticality.

The concept included the Community Cloud. This delivers the ability to host services for partners working directly with Council, sharing resources and supporting the EcoSystem which (as of May 2015) is currently being developed as part of a specific, dedicated project.

The CSG contract delivered numerous new systems to the Council, some of which are public cloud-hosted such as Integra (Finance), Core HR (HR), Transversal (Knowledge Management), etc.

From a strategic perspective, it is not intended to move to a wholly-private or wholly-public cloud infrastructure. Rather it is intended to use existing investments and new opportunities to determine the best solution. The transformed infrastructure and this strategy enable a flexible approach to hosting decision while maintaining security. It is anticipated that both public and private cloud hosting will remain viable over the course of this strategy. Examples of why one may be chosen over the other are:

- Public cloud solutions lend themselves to requirements where users are distributed both inside and outside the corporate network domain.
- Private cloud solutions lend themselves to more secure applications especially where public solutions may only offer hosting in countries outside the European Economic Area.

## SECURITY AND MOBILE WORKING

There is an ongoing requirement to satisfy the Public Services Network Accreditor (PSNA) that Barnet's network is compliant with the PSN code of connection (CoCo). This involves an annual health check and submission of documentation to the accreditor with the aim to secure a CoCo certificate. The security requirements which need to be met are increasingly becoming aligned with the standards set out in ISO27001<sup>4</sup> which is part of the design principles applied to the IS transformation programme and ICT service provided by Capita.

To assist government organisations to achieve PSN accreditation, there are "good practice guides" (GPGs) issued by the Cabinet Office which provide guidance as to how networks and security should be deployed to achieve accreditation.

Part of the challenge of providing mobile workers access to secure networks is that many of the desirable tablet devices do not adhere to suitably rigorous security methods including password complexity/policy, accredited storage (e.g. IL2 compliance), data segregation from insecure applications, encryption on the device and in transit, removal of insecure applications, remote wiping, etc.

Tablet and smartphone providers are continually improving the "manageability" of their devices with every subsequent patch and release to their operating systems. This enables the use of Mobile Device Management (MDM) solutions to centrally set security policy and track device usage.

Until recently the Cabinet Office has not permitted Bring Your Own Device (BYOD) access to corporate network resources. However there are now sufficient controls within MDM products and interfaces provided by the major tablet and smartphone suppliers to now see advice and guidance starting to appear.

While this opens the door to consider BYOD alongside corporate tablet and smartphone devices, data security must be addressed in tandem. At present guidance applies to information at or below Business Impact Level 2 (BIL2). Suitable network and data segregation must be applied in order to ensure that devices cannot access data for which they are not certified.

In some cases there will be a business need to provide access to information from devices whose security profile purposely falls below Cabinet Office guidelines. For instance where a password needs to be of lower complexity, there is a risk of compromise from legitimately installed applications or they are used by members of the public/other organisations. In this case segregation can be considered to provide a "walled garden" network area for open access. The cost of this can be weighed against the business need for untrusted devices accessing specific Council data.

There is currently a project in progress with NCC Group to provide consultancy on addressing the subject of PSN and network segregation. The outcomes of this will be included in the strategic roadmap exercise to ensure that these stay in step with development of the mobile working capability implementation.

The Borough has initiated an investigation into opportunities of extending the range of services offered through the utilisation of PSN (and N3 Health connectivity) and has identified key areas where these could be leveraged. Considerations are to be borne in mind in defining the scope and requirements of the ICT Strategy workstreams when reviewing interaction with 3<sup>rd</sup> parties, especially those requiring additional levels of secure interaction (such as Government and Health). These considerations include:

- The Council's continued use of the PSN and future anticipated use of the PSN for Council purposes

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<sup>4</sup> ISO27001 – Information Security Management standard

- How links to the PSN network can be designed to enable the Council's strategic ambitions around flexible, mobile working (including the requirement of Members)
- LBB's requirement for a N3 connection and how this fits with the Council's strategic aims for flexible working

## GOVERNANCE

The future state of ICT Governance will help to guide future ICT and technology initiatives and will greatly assist in enhancing the quality of the support provided to the Council and customers.

### ICT Strategy delivery

The implementation of the ICT Strategy Programme will take place through the vehicle of defined Programmes and projects in order to deliver a solution of closely-aligned technology building blocks. Standard Capita governance procedures will be enforced, with reporting back to LBB via the various programme boards and the IT Management Working Group (lead by the LBB Head of Information Management), which in turn provides feedback on ICT Strategy delivery progress to the Customer and Information Management Board (CIMB) within LBB.

### Programme Management

The Programme Management Framework shown below demonstrates the end to end process and governance to be employed throughout the lifecycle of a programme. This framework and supporting processes will enable our business to understand the roles and responsibilities required to deliver programmes in a consistent and controlled environment. The framework is underpinned with principles of MSP® and OGC Gateway™.

Programmes are about managing change, with a strategic vision and a route map of how to get there; they are able to deal with uncertainty about achieving the desired outcomes. A programme approach should be flexible and capable of accommodating changing circumstances, such as opportunities or risks materialising. It co-ordinates delivery of the range of work including projects needed to achieve outcomes and benefits.

Programmes are different from projects in that it is the outcomes of a programme that matters, not the outputs as delivered from projects. Outcomes are the effects of change and form the vision for the programme.

Where a change is being delivered to provide new services, facilities or functions, the programme shall be driven by the specification and should have a relatively clear scope of the final outcomes required. The specification will be defined within the contract or a schedule thereof, in a Bill of Materials (BOM) or a solution design.

Where a change is being delivered that is more focused on delivering an organisational change, be it heading towards a new strategy, becoming more effective and efficient, or transforming the way it operates, the programme shall be driven by the vision. The vision is the high level statement of where the organisations wants to be and is the combination of all the desired outcomes.

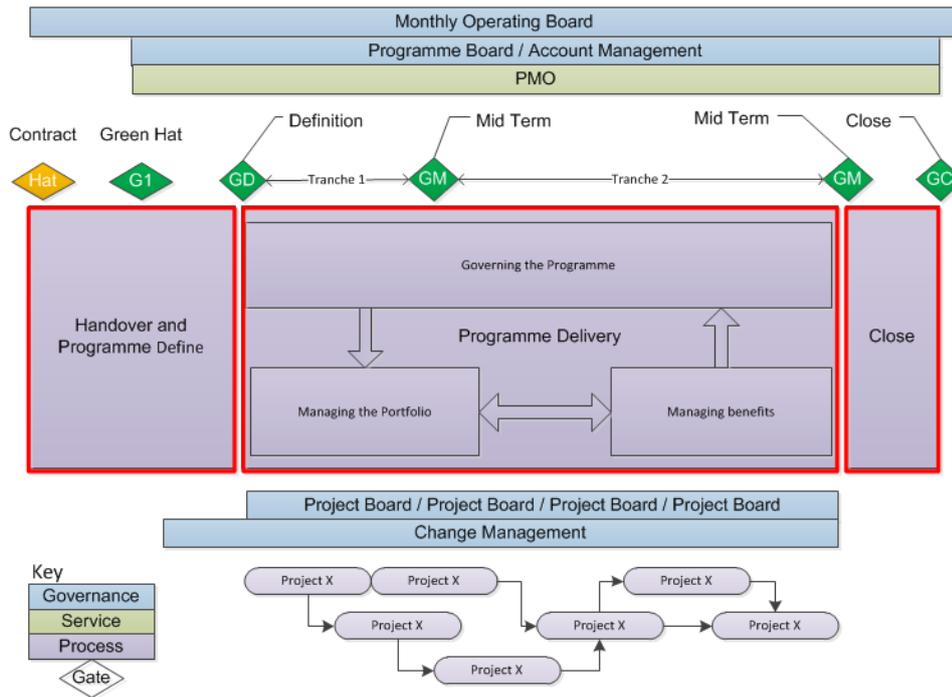


Figure 12: Programme Management framework

At key points throughout the programme, review gates are held to monitor the current position and readiness to proceed. In all cases it is the Programme Manager’s responsibility to define and agree the governance arrangements during the definition stage of the programme, ultimately reporting into the appropriate Operating Board.

Programmes shall adopt the Project Management Framework to manage the delivery of the projects within the programme portfolio.

**Project Management**

The Project Management Framework is shown below. It demonstrates the end to end process with governance to be employed throughout the lifecycle of a project. This framework and supporting processes will enable our business to understand the roles and responsibilities required to deliver projects in a consistent and controlled environment. The framework is underpinned with principles of PRINCE2® and OGC Gateway™.

Often projects will be one element or workstream of a wider programme. In those cases a Programme Board and Programme Management Office (PMO) will exist and will provide the programme governance framework. Where this is not the case, the Account Management, either into the customer or Capita line of service will exist and shall be used as the governance route. In all cases it is the Project Manager’s responsibility to define and agree the governance arrangements during the initiation stage of the project. Projects ultimately report into the appropriate Operating Board.

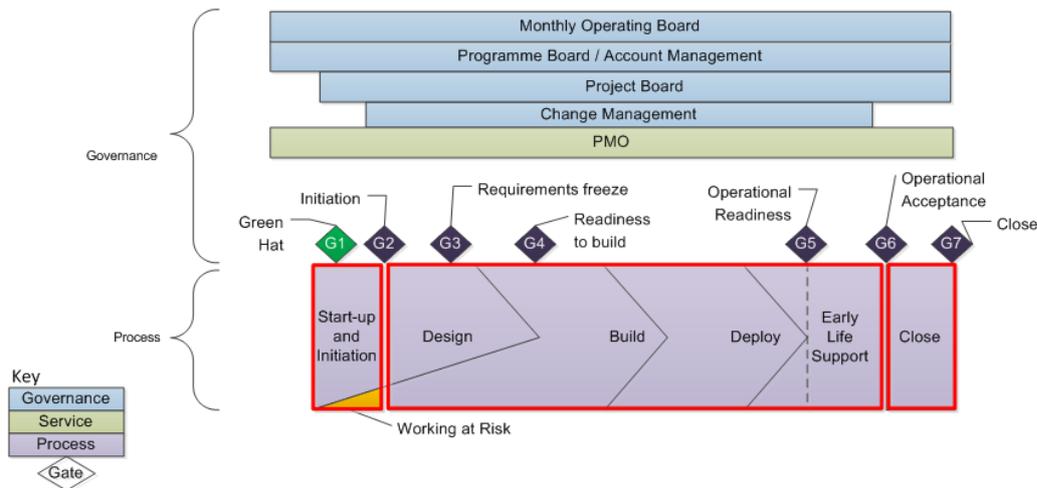


Figure 13: Project Management framework

At key points throughout the project, review gates are held to monitor the current position and readiness to proceed. The Project Manager is responsible for the delivery of the projects allocated to them.

### ICT Architecture Governance

The EA approach will increase standardisation by setting the design principles for all managed change. These will be differentiated to keep them appropriate for the business change. EA Governance is aligned to the PMO P30 process and the Service Management Framework.

The EA approach will be incrementally delivered by increasing the level of rigour and strength of governance. Managed exceptions will be agreed where the business would be harmed by implementing a mandated technology standard.

The EA function will be defined through the development of a document set defining the overall framework and supported by a set of principles, reference architecture (top level of the entire ICT landscape) and technology standards.

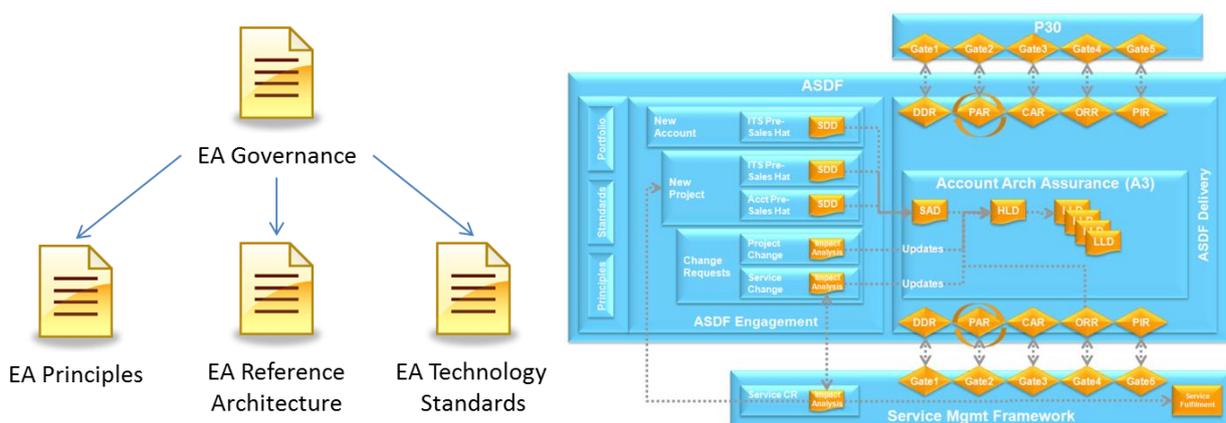


Figure 14: Enterprise Architecture document map

The governance framework defines the overall concepts, methods and styles which will be adopted in the process of applying architectural rigour to managed change. It includes a method of categorising all aspects of ICT including:

- Governance

- Business
- Information
- Application
- Technology
- Security
- Operations
- Commercial

The Business, Information, Application and Technology aspects are further subdivided to enable appropriate stakeholder views to be shown which will range from the “helicopter”, contextual view, through conceptual overview to logical and physical. Each step adds more detail and refinement to provide satisfactory visualisations from senior management through to implementation and support staff.

Principles are guiding statements which influence the direction and design decisions made during the change process. Principles are relatively non-volatile, are derived from and reflect the goals, values and culture of the organisation. They do not need to be doggedly adhered to but at minimum they must be considered and dispensation sought if they are not to be followed. They are not requirements which will usually vary depending upon the change under consideration and the needs of the business.

The following principles are proposed for inclusion within the Enterprise Architecture framework and to be applied consistently across all ICT projects and services.

- Leverage proven assets, including software re-use and the use of Commercial-Off-The-Shelf (COTS) software
- Design ICT services as autonomous, loosely coupled components that can be flexibly re-used – recognise the broader benefit to corporate ICT unconstrained by individual projects’ scope
- Start with business requirements and user needs and avoid investment before these are known – consider the use of prototyping and pilots if these are unknown
- Publish design decisions through governance bodies so that stakeholders understand why these decisions are being made
- Apply consumer technology principles to business technology, for example browser-based applications, self-service provisioning and intuitive user interfaces to minimise training
- Limit (where appropriate) the impact of security requirements on user experience
- Information Management and compliance requirements should be met, for example records retention and disposal policies
- Commoditise basic ICT building blocks such as end user devices through a tested service catalogue and abstraction or retirement of “lock-in” technology solutions
- Ensure compatibility with the Government Reference Models, which define information technology standards, services, interfaces, supporting data formats, and protocols
- Facilitate data integrity, re-use and sharing through adoption of standardised structures and processing rules

In order to govern the development and maintenance of the architecture, there needs to be a relationship between governance bodies. The following diagram is a proposed structure showing the relationships between the core EA function and associated boards. This will be further developed during

the definition of the EA framework and in conjunction with the Information Management and Technology Working Group (IMTWG).

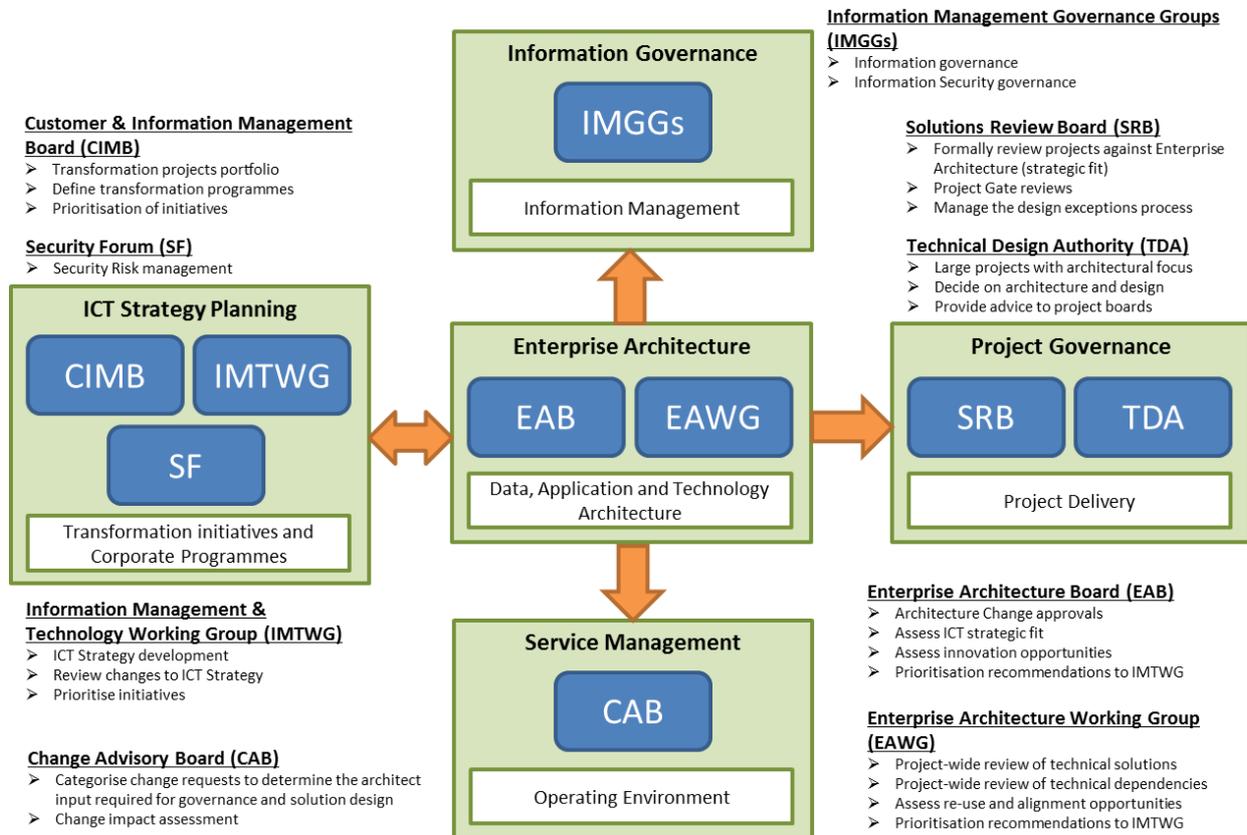
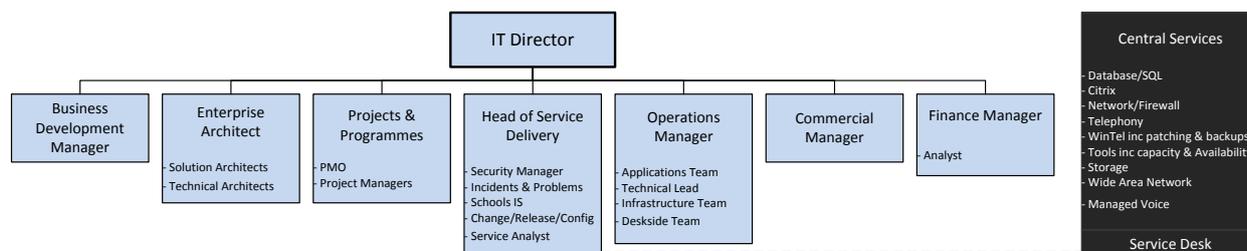


Figure 15: Candidate governance organisation

## ICT SERVICE DELIVERY

The ICT Service has changed significantly through the contracted IS Service Transformation programme and the ongoing Service Improvement Programme (SIP). This included relocation of the service desk, data centre build and migration, Citrix upgrade, desktop upgrade and service improvements such as staff development and application portfolio management.

During the course of the transformation and subsequent service delivery, various practical changes to the organisational structure of the ICT have been identified leading to the following proposed model:



**Figure 16: Proposed ICT Delivery Team structure**

Most of the roles are self-explanatory. The key change to the structure is the establishment of two separate roles for Operations and Service Delivery management. This enables Service Delivery to focus on the disciplines and processes associated with ITIL and ISO20000 and service line reporting without the distractions associated with project delivery, service improvement, support and maintenance of the ICT landscape. Operations manage these latter activities.

Another key element is the split between locally and centrally delivered services. This allows for an effective balance between the need to retain local skills for flexibility and consistency of delivery and service, and the ability to leverage efficiency by sharing centralised, skilled resources. Typically local staff will handle Barnet-specific or physically local operations. Central services will be concerned with more commodity-based, commonly used systems such as email, databases, etc.

### Service Portfolio

The service portfolio will remain as defined in the Service Delivery Plan (Method Statement) section 2 and added to as and when new or revised service offerings are implemented via the strategic roadmap. For example the addition to the catalogue of a range of supported mobile devices once a process of requirements capture, evaluation and design has been completed.

### Service Improvement

The Service Improvement Project (SIP) has already been initiated in ICT and will generate new improvements over time in response to the development of the strategic roadmap, stakeholder feedback (including the strategic workshop interviews summarised in Appendix 3) and issues identified in service delivery.

The current SIP scope and objectives are detailed in the project initiation document. They key streams of work are listed below.

1. IS Staff Development and Competencies
2. Information Security Management System (ISMS)
3. Reduction in volume of IS incidents
4. Annual IT Health Check
5. Business Impact Analysis, Risk Analysis And Annual Testing Of DR plans
6. Application Portfolio Management

## INNOVATION AND THE FUTURE

The majority of the topics described in this strategy are current technologies which can be brought to bear on the drivers and ambitions of the Council. This section is intended to describe some trends and emerging technologies which could be considered in the future to improve efficiency and drive improved value for money. They are thought-provokers rather than solutions to existing challenges and could provide opportunities as they become more mature and commoditised.

### *Wearable technology*

The market for “wearable technology” consists of a wide range of devices, some commonly available in the retail market as consumer items, some targeted at specific business applications. This results in a massive diversity of different functions and opportunities.

An example is the Smart Watch which is capable of data storage, Bluetooth communications, voice and sound recording, geographical location services and photography amongst other things. There are evident opportunities relating to portability and personal security while carrying a device which need to be paid off against the potential limitations of screen size or traditional volume data entry.

There are additional potentials relating to other devices such as heads-up displays in technology-enabled glasses, telemedicine sensors/fitness trackers, wristband contactless payment, pen surveillance, implanted proximity devices, etc. While consideration of the risk of personal or sensitive information disclosure is always necessary, the benefits of the availability of real-time and critical up to date information should not be underestimated.

### *The Internet of Things (IoT)*

Anything with a smart chip in it could be connected to the Barnet network and ICT services via the Internet, enabling sensors to send data back or machines to receive instructions remotely. Devices can include traffic sensors, smart building controls, motor vehicles, heart monitors, lampposts and even fridges in politicians' kitchens. The sheer scale, availability and rapidly falling cost of this technology offers new innovation opportunities to public service providers.

Kevin Ashton, cofounder and executive director of the Auto-ID Center at MIT, first mentioned the Internet of Things in a presentation he made to Procter & Gamble. Here’s how Ashton explains the potential of the Internet of Things:

“Today computers - and, therefore, the Internet - are almost wholly dependent on human beings for information. Nearly all of the roughly 50 petabytes (a petabyte is 1,024 terabytes) of data available on the Internet were first captured and created by human beings by typing, pressing a record button, taking a digital picture or scanning a bar code.

The problem is, people have limited time, attention and accuracy - all of which means they are not very good at capturing data about things in the real world. If we had computers that knew everything there was to know about things - using data they gathered without any help from us - we would be able to track and count everything and greatly reduce waste, loss and cost. We would know when things needed replacing, repairing or recalling and whether they were fresh or past their best.”

Milton Keynes is one city which has committed to exploitation of IoT. The city has set in motion a number of IoT trials, including waste management, car parking services, and even pothole reporting using smartphone gyroscopes.

## 5 ICT STRATEGY IMPLEMENTATION

The approach to implementation of this strategy will be to conduct a roadmap exercise to match the application and technology capabilities with the specific, detailed needs of the Council. A process of dependency mapping and prioritisation will establish a three-year projected plan of works. These will then form the basis for further action such as business cases.

This strategy will act as an overarching framework within which a variety of sub-strategies can be created as and when strategic capabilities are “next in line” on the roadmap. Since technology is a rapidly evolving landscape, it is important to include the most up to date developments at the point that the specific capability is being considered. Some may never need creating and should be considered only necessary if there is substantial change to ICT or implementation of core, corporate-wide systems which would be candidates for broad re-use and exploitation.

The candidate set of sub-strategies for LBB are shown below:

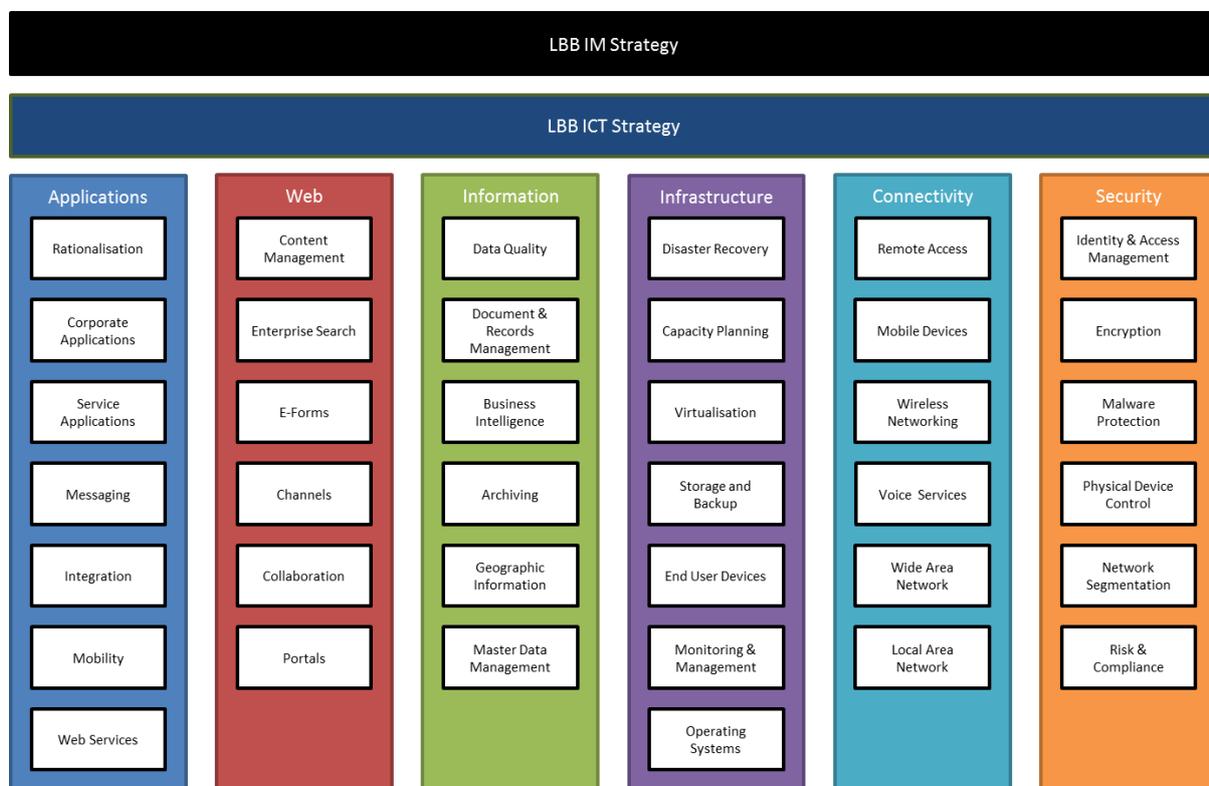


Figure 17: Candidate sub-strategies for implementation of the roadmap

This list will be updated as the roadmap develops. The sub-strategies are elaborated in more detail in Appendix 2. The roadmap will drive the sequence, dependencies and priorities which will form the implementation programme(s).

### ROADMAP

The ICT Strategy Roadmap will underpin the ICT Strategy and provide the direction of travel for the effective investment, use and development of the core technology supporting the business drivers and ICT strategy themes over the coming years. The four ICT strategic themes are defined in section 4.

The roadmap will map out the dependencies and timeline taking into account the numerous factors which will influence when capabilities will need to be put in place. These include the following (in no particular order or level of precedence):

- Timing of dependent corporate programmes
- Business priorities
- ICT programme and service priorities including application lifecycle
- Availability of funding/business case development
- Interdependencies between strategic capabilities
- Transitional and resource constraints
- External factors such as elections, partner and government initiatives, etc.

The prioritisation of work streams and technology building block delivery will be subject to the needs and requirements of the Borough. The finalisation of the Customer Access Strategy and implications of extended service offering to customers and utilisation of more cost-efficient channels has raised the profile within the Borough and will influence delivery of certain aspects of the Strategy. This, aligned with activities within the partner integration initiatives with the Healthy London Partnership and other such activities will require the Borough to assist in defining priorities for delivery, facilitated by the LBB Information Management team.

Certain technology building blocks are closely aligned and will be recommended to be implemented as part of a coordinated project in order to leverage business benefit. These will be clearly defined and aligned with provision of costings and business benefit, and may be aligned to items identified within the Customer Access Strategy, or as discrete items of this Strategy.

## 6 DETAILED APPENDICES

### APPENDIX 1 – INFORMATION MANAGEMENT STRATEGY DRIVERS

The following drivers are taken directly from the LBB IM Strategy, section 4. Note that the Corporate Plan excerpt shown here has been superseded recently but is retained in this section as this is what the IM strategy was constructed to support.

#### **Barnet Corporate Plan 2013-2016**

Of primary consideration are the strategic objectives from the Barnet Corporate Plan 2012-16.

The focus for the coming years for Barnet is on:

- Promote responsible growth, development and success across the borough.
- Support families and individuals that need it – promoting independence, learning and well-being
- Improve the satisfaction of residents and businesses with Barnet as a place to live, work and study

With the following performance targets for 2013/14 to reflect this direction:

- ❖ To maintain a well-designed, attractive and accessible place,
- ❖ To maintain the right environment for a strong and diverse local economy.
- ❖ To create better life chances for children and young people across the borough.
- ❖ To sustain a strong partnership with the local NHS, so that families and individuals can maintain and improve their physical and mental health.
- ❖ To promote a healthy, active, independent and informed over 55 population in the borough to encourage and support our residents to age well.
- ❖ To promote family and community well-being and encourage engaged, cohesive and safe communities.

This Information Management Strategy is a supportive enabler for the aims of the Corporate Plan by:

- Encouraging and supporting information and data to be stored efficiently, allowing it to be retrieved when required helping to make robust, evidence-based decisions.
- Promoting an approach which recognises data quality and the means to which we put our data, and allowing us to report against performance effectively.
- Enabling a transparent approach to the release of information and data, allowing our customers and businesses to use it for innovative means.
- Creating a proportionate, risk based approach to security and information governance, ensuring that controls do not provide a barrier to innovation and that sensitive information is protected effectively, while recognising what risk we are not prepared to tolerate.
- Supporting a collaborative approach to the creation, use and sharing of information, both internally within Barnet and externally with our partners, where appropriate.

#### **Priorities and Spending Review 2016-2020**

As set out in the July 2013 Medium Term Financial Strategy (MTFS) and longer term financial outlook, the economic climate is extremely challenging with the Government levying further cuts on local government since the 2010 Spending Review. Consequently, the 2016-2020 Barnet Priorities and Spending Review (PSR) which is currently being devised looks beyond the MTFS to find the cuts required to fund further austerity measures.

The PSR framework focuses on:

- Delivering our plans (Corporate Plan and current MTFS savings)
- Being more efficient
- New commissions and service transformation

The approach to Information Management set out in this strategy is an enabler for supporting the PSR requirements. This is through Barnet's aim to be more efficient through managing and using our information and technology in more innovative ways and to support decision making.

In addition to this, the need for improved Information Management in Barnet must be set in the context of a time of challenging budgets. Consequently, the aims of the strategy will be achieved through the use of internal Information Management resource where possible with strategic and full business cases accompanying any proposed spend through Barnet's Capita partner to show business benefits and value for money returns on expenditure.

### **Delivery Unit Objectives**

Information Management is implicit in the Delivery Unit Management Agreements for 2013/14 as the provision of quality, accessible and usable information and data underpins the matching of performance indicators and provision of information for customers. This strategy explicitly supports the following areas:

- Education and Skills: further use of in-house systems (Tribal) to support Special Educational Needs (SEN) requirements.
- Family Services: supporting data quality, IT and information management aims of the business improvement team.
- Adults and Communities: Investing in IT project to implement new Adults system infrastructure; providing the governance requirements of the IGSoC to support gaining a council N3 (NHS) connection.
- Street Scene: supporting implementation of enabling IT systems such as Muniround and Mission replacement, and enabling a more mobile workforce.

### **Customer Access Vision**

Barnet is transforming the way it services its customers to react to changes in the local government landscape – changes including major reductions in funding and customer expectations changing as new channels around customer contact become mainstreamed. Barnet's approach to these challenges is to create an excellent customer experience that is satisfying for customers, cheaper for the council and simpler for staff, where services are designed, developed and delivered around the needs of customers.

However, we cannot enable this vision if we do not have a new approach to managing and accessing information and data to meet the needs of our customers. We therefore must be clear *what* information and data enables this vision, *where* it is located, ensure its *quality* and be clear *how often* it

will be made available. It is therefore critical for these two strategies to be run in parallel to enable this vision, one of the most crucial for the Council over the coming years, to be realised.

### Partnership Approach

The London Borough of Barnet does not work in isolation, and its relationship with its delivery partners is important for the delivery of council objectives. In the face of decreasing public sector budgets, the ability to work across sectors is important to deliver joint benefits through economies of scale.

The Information Management Strategy will enable the partnership approach of the council. This will be achieved by the focus in the strategy framework on:

- ❖ Data management - implementing a data management approach for the organisation focussing on the use, flow and dependencies and quality of data thereby enabling Barnet to work effectively with partners, providing good quality, targeted information and data and management information to achieve joint objectives.
- ❖ Information sharing – understanding the obstacles and barriers to information sharing, enhancing our Privacy Notice, and working to the COUNT principle of count once, use numerous times.
- ❖ Collaboration – collaborating on the creation and use of data and information for joint strategic aims with the use of appropriate collaboration tools and techniques to ensure that we use information and knowledge to its best effect.

### Issues – what staff have told us

While we want to engage further with our residents and customers, we need to improve the way we manage information and data internally to help realise this. Consequently, the Information Management team has met with representatives from all Delivery Units in workshops to understand the issues they have been facing in relation to Information Management and their ideas for improvements. The full results (anonymised) are shown in **annex A**, but a summary is as follows:

- Lack of trust in systems and infrastructure, leading to a preference for storing information locally and individually in personal drives – this creates a barrier to sharing and collaborating on information creation and use.
- Email overload and lack of good storage systems in which to store emails leads to bad practice with PSTs, default individual document management systems and an ultimate barrier to collaboration.
- We need an approach to data management across the organisation that pulls in factors such as ownership, consistency, quality and reporting.
- More thought in terms of what we can do with the information and data we hold.
- Hard to locate information through badly structured, out of date shared drives, which is a barrier to efficient working and collaboration.
- Information is not being destroyed when it is no longer required – partly due to the retention schedules being hard to understand and not truly reflective of the work of the organisation.
- Need a central place to store documents – difficult to collaborate effectively otherwise.
- It's good that we have electronic line of business systems – we should use their functionality more when staff say they need additional systems.
- Clear that the vehicles for disseminating guidance aren't always right – can't just put a policy on the intranet, send one email and think that'll be enough. Lots of people don't have time to read

the intranet – and it's not intuitively set up to find information anyway. Need to think about better ways of disseminating messages.

- Guidance / policy issued corporately doesn't always work at a local level – therefore need to create in tandem with DUs, do more testing & piloting with DUs to check that they are fit for purpose for services.
- Limitations of physical storage and the need to deal with historical paper files that have long retention periods but are voluminous to store.
- Lack of innovation in remote working in the field (e.g. use of handheld devices) leads to inefficient processes and wasted time.
- Having separate, unlinked systems when there are synergies between them leads to inefficient working practices.
- Staff are frustrated with IT systems, speed and age of hardware so they find workarounds to get things done.

Improvements to address these issues and to meet our strategic drivers as set out above are addressed in the following sections.

## APPENDIX 2 – SUB-STRATEGIES

This appendix provides elaboration on the candidate sub-strategies and explains the areas of ICT which they would typically address. As explained in section 5, these areas will be subject to amendment following the upcoming strategic roadmap exercise which may add, remove or amend them.

Strategy category	Sub-strategy topic	Description
Applications	Rationalisation	Drives down the complexity and diversity of the estate. This drives down cost by enabling: <ul style="list-style-type: none"> <li>• Reduced user training</li> <li>• Reduced number of support and maintenance contracts</li> <li>• Reduced diversity of skills required in ICT service</li> <li>• Improved understanding of the ICT landscape</li> <li>• Greater consistency in solutions and re-use</li> <li>• Reduction in infrastructure</li> <li>• Improved integration and mobile working compatibility</li> </ul> Drive towards corporate level applications
	Corporate Applications	Drive towards “optimised core” level of architectural maturity. Increase re-use and integration through the adoption of corporate-wide capabilities such as mobile working, email, integration, partner collaboration, etc.
	Service Applications	As per Corporate Applications above but centred on service applications in the delivery units.
	Messaging	Identifies strategic messaging requirements and solutions such as email, conferencing, communications, presence, softphones, etc.
	Integration	Establishes a corporate-level capability requirement for data and information exchange in its many forms. These include message-based, queue-based, file transfer, direct database, API. It also establishes the core features required including error handling, data mapping, data translation and cleansing, etc.
	Mobility	Establishes the strategy for applications in order that they enable mobility such as access from a variety of devices with differing user interfaces, from a variety of different network locations and offline working. This will influence how new applications are selected and partially direct investment in existing applications (as identified in application portfolio management).
	Web services	As per Mobility but focussed on web offerings and services from applications.
Web	Content Management	Directs the content strategy for the web in line with information management including taxonomy and business classifications schemes. Linked with information-related systems such as EDMRS.
	Enterprise Search	Establishes the requirements and solution for enterprise search (where required) which includes all elements of content and data as well as the diverse needs of information users including the Council, partners, residents, businesses, etc.
	E-Forms	Identifies the need for a corporate forms package which improves the opportunities to integrate and reduces the diversity of skills required to develop forms for future change.
	Channels	Linked with the Customer Access Strategy and partner collaboration plans, this develops the ICT strategic solutions which will be required to improve existing channels and open new ones such as web chat.
	Collaboration	Establishes the requirements and solution for secure collaboration with customers and partners. There will be a variety of security and interoperability standards to be complied with which need to be considered in terms of a strategic capability.
	Portals	Pulls together the needs for portal services to stakeholder groups and what they need to contain. Linked with the existing Portals deployment and any emerging requirements.

Strategy category	Sub-strategy topic	Description
Information	Data Quality	Defines the enabling ICT required to support the data quality objectives in LBB and to address lower-quality information which may be impacting service.
	Document & Records Management	Supporting the IM Strategy drive and enabling robust implementation of document and records management policy including capture, storage, security and retention.
	Business Intelligence	Supports the need to take a corporate approach to management information and reporting to support decision making. A common toolset would enable broader re-use of skills across the Council to develop and consume reports, dashboards, etc.
	Archiving	Supporting the IM Strategy to establish an up to date repository for the archiving of information; in particular the retention of data associated with systems which are being retired and/or replaced.
	Geographic Information	Enabling greater exploitation of GI across the Council and communicating the considerable benefits it can bring. Establishing the data, integration and maintenance requirements.
Infrastructure	Disaster Recovery	Extending, where required the facility and service as established in the IS transformation programme.
	Capacity Planning	Extending, where required the facility and service as established in the IS transformation programme.
	Virtualisation	Extending, where required the facility and service as established in the IS transformation programme.
	Storage and Backup	Extending, where required the facility and service as established in the IS transformation programme.
	End User Devices	Establishing a set of requirements and solutions to support mobile working use cases across the Council. This will include device management technology to enable enforcement of required security policies and protocols.
	Monitoring & Management	Extending, where required the facility and service as established in the IS transformation programme.
	Operating Systems	Extending, where required the facility and service as established in the IS transformation programme.
Connectivity	Remote Access	Extending, where required the facility and service as established in the IS transformation programme.
	Mobile Devices	Identifying any additional mobile connectivity solutions required to enable the Council to work in remote locations e.g. satellite phones.
	Wireless Networking	Identifying any additional wireless solutions required to enable the Council to work in remote locations e.g. WiMax
	Voice Services	Identifying any additional voice services and solutions required to enable cost savings or deliver extended coverage e.g. fixed/mobile convergence, soft phones. Linked to Collaboration.
	Wide Area Network	Extending, where required the facility and service as established in the IS transformation programme.
	Local Area Network	Extending, where required the facility and service as established in the IS transformation programme.

Strategy category	Sub-strategy topic	Description
Security	Identity & Access Management	Establishing a platform for a single identity and enabling it to be used for all authentication and authorisation processes. Establish processes for registration, enrolment and identity lifecycle.
	Encryption	Extending, where required the facility and service as established in the IS transformation programme.
	Malware protection	Extending, where required the facility and service as established in the IS transformation programme.
	Physical Device Control	Extending, where required the facility and service as established in the IS transformation programme.
	Network Segmentation	Establishing the solutions to differing network usage and security requirements. This will especially apply to the segregation for access by untrusted or semi-trusted devices such as “Bring Your Own Device” initiatives and for public access.
	Risk & Compliance	Extending, where required the facility and service as established in the IS transformation programme.

### APPENDIX 3 – STAKEHOLDER INTERVIEW FEEDBACK RELATING TO ICT

The following table lists the IM Strategy drivers to enable traceability through the remaining sections and show where and how each element relates to them:

Ref	Driver	Theme
IM1	Encouraging and supporting information and data to be stored efficiently, allowing it to be retrieved when required helping to make robust, evidence-based decisions.	2
IM2	Promoting an approach which recognises data quality and the means to which we put our data, and allowing us to report against performance effectively.	2
IM3	Enabling a transparent approach to the release of information and data, allowing our customers and businesses to use it for innovative means.	4
IM4	Creating a proportionate, risk based approach to security and information governance, ensuring that controls do not provide a barrier to innovation and that sensitive information is protected effectively, while recognising what risk we are not prepared to tolerate.	3
IM5	Supporting a collaborative approach to the creation, use and sharing of information, both internally within Barnet and externally with our partners, where appropriate.	4
IM6	Education and Skills: further use of in-house systems (Tribal) to support Special Educational Needs (SEN) requirements.	3
IM7	Family Services: supporting data quality, IT and information management aims of the business improvement team.	2
IM8	Adults and Communities: Investing in IT project to implement new Adults system infrastructure; providing the governance requirements of the IGSoC to support gaining a council N3 (NHS) connection.	3
IM9	Street Scene: supporting implementation of enabling IT systems such as Muniround and Mission replacement, and enabling a more mobile workforce.	1
IM10	Data management - implementing a data management approach for the organisation focussing on the use, flow and dependencies and quality of data thereby enabling Barnet to work effectively with partners, providing good quality, targeted information and data and management information to achieve joint objectives.	2
IM11	Information sharing – understanding the obstacles and barriers to information sharing, enhancing our Privacy Notice, and working to the COUNT principle of count once, use numerous times.	2
IM12	Collaboration – collaborating on the creation and use of data and information for joint strategic aims with the use of appropriate collaboration tools and techniques to ensure that we use information and knowledge to its best effect.	4

The Smarter Working Programme was created to bring together the Office Accommodation Rationalisation Strategy (OARS), the IM and ICT Strategies and Workforce Strategy and ensure they are aligned. The following table lists the Smarter Working operating model applied principles (enabling mechanisms) where relevant to ICT:

Ref	Driver	Theme
SW1	Agile workers are supported by the required tools and working environment	1
SW2	Everyone coming to the office has the right to be able to work effectively and efficiently	1
SW4	Staff are managed by performance and outputs rather than by presence; we trust our staff to make the right day to day decisions but we review these during appraisals	1
SW5	Paperless working is enabled	2
SW6	One Laptop or PC per person is established as the standard	1
SW7	Connectivity is reliable and effective	1

The following table summarises the key Delivery Unit workshop drivers and issues as detailed in Appendix 3. The aim here is to find common and priority themes upon which to concentrate for the strategy:

Ref	Driver/issue	Theme
DU1	Lack of flexibility in infrastructure and services/robustness of service	3
DU2	Information and data sharing	2
DU3	Increased mobile and agile working incl. printing, telephony	1
DU4	Increased use of Smartphones and Tablets	1
DU5	Appropriate security on devices, applications and data	3
DU6	Inter-agency working – NHS, Police, Citizens Advice, Central Govt. etc.	4
DU7	Verification of identity, residence/location and entitlement	3
DU8	Bi-directional integration between line of business systems	2
DU9	Increased “single sign-on”	3
DU10	Broader range and types of service delivery locations	1
DU11	Increased service offerings and self-service through Citizen Portal	2
DU12	Improved data quality to reduce customer contact and improve service efficiency	2
DU13	Improve technology skills of staff	3
DU14	Capture interview recordings electronically and link to cases	2
DU15	Make best use of existing systems	3
DU16	Move towards a paperless office	2
DU17	Consistent network performance across different locations	3
DU18	Improved record retention and destruction	2
DU19	Clarity of roles between DU and ICT e.g. suppliers, contracts, procurement, projects, governance	3
DU20	Redaction capability	2
DU21	Booking systems	3
DU22	Joined up, corporate GIS	2
DU23	Data archiving	2
DU24	Management Information, Business Intelligence and Analytics	2
DU25	Single Views of key data entities	2
DU26	Improved access to and use of scanning facilities	2

The following table lists the specific staff issues raised in the IM Strategy regarding ICT:

Ref	Driver	Theme
ISS1	Lack of trust in systems and infrastructure, leading to a preference for storing information locally and individually in personal drives – this creates a barrier to sharing and collaborating on information creation and use.	2
ISS2	Email overload and lack of good storage systems in which to store emails leads to bad practice with PSTs, default individual document management systems and an ultimate barrier to collaboration.	2
ISS3	We need an approach to data management across the organisation that pulls in factors such as ownership, consistency, quality and reporting.	2
ISS4	More thought in terms of what we can do with the information and data we hold.	2
ISS5	Hard to locate information through badly structured, out of date shared drives, which is a barrier to efficient working and collaboration.	2
ISS6	Information is not being destroyed when it is no longer required – partly due to the retention schedules being hard to understand and not truly reflective of the work of the organisation.	2
ISS7	Need a central place to store documents – difficult to collaborate effectively otherwise.	2
ISS8	It's good that we have electronic line of business systems – we should use their functionality more when staff say they need additional systems.	3
ISS9	Clear that the vehicles for disseminating guidance aren't always right – can't just put a policy on the intranet, send one email and think that'll be enough. Lots of people don't have time to read the intranet – and it's not intuitively set up to find information anyway. Need to think about better ways of disseminating messages.	1
ISS10	Guidance / policy issued corporately doesn't always work at a local level – therefore need to create in tandem with DUs, do more testing & piloting with DUs to check that they are fit for purpose for services.	1
ISS11	Limitations of physical storage and the need to deal with historical paper files that have long retention periods but are voluminous to store.	2
ISS12	Lack of innovation in remote working in the field (e.g. use of handheld devices) leads to inefficient processes and wasted time.	1
ISS13	Having separate, unlinked systems when there are synergies between them leads to inefficient working practices.	2
ISS14	Staff are frustrated with IT systems, speed and age of hardware so they find workarounds to get things done.	3

The ICT Strategy also aims to consider existing Transformation and corporate programmes both in terms of supporting them but also taking advantage of existing work which can deliver broader strategic benefit. The following table lists those which have an obvious relevance to ICT strategy (it is expected that the majority will have a dependency on ICT in one form or another but are not necessarily required to be referenced here):

Ref	Programme	Description/aims	Themes			
TCP1	Central – Smarter Working	Office accommodation rationalisation and mobile/flexible working	1	2	3	
TCP2	Central – IT rationalisation	Rationalising IT services and licenses within the Delivery Units			3	
TCP3	Central – Customer Access Strategy	Channel shift and increased first contact resolution		2	3	
TCP4	Central – GIS	Efficient GIS across the Council and report to recommend a GIS delivery model	1	2	3	4
TCP5	Central – Wisdom “Get Well”	Evaluate and remediate issues with the corporate EDRMS	1	2	3	4
TCP6	Environment – Business Transformation	To achieve a number of operational and organisational efficiencies across the StreetScene Delivery Unit	1	2	3	
TCP7	CYP – Early Years Implementation	Designing a more flexible, targeted and collaborative model		2		4
TCP8	CYP – Libraries & Libraries IS Capital Project	Developing an alternative approach to the provision of library services		2	3	
TCP9	Adults/Health – A&C Transformation	Development of a programme to deliver a new a model for adult social care	1	2	3	4
TCP10	Adults/Health – HSCI incl. Shared Care Record	Deliver a five tier model of care		2	3	4
TCP11	Adults/Health – Investing in IT (NB Other Adults projects are explicitly dependent on this project)	Improving enabling technology, promoting efficiency through self-service and activity monitoring	1	2	3	4
TCP12	Growth & Dev – EB Welfare Reform	Shared understanding of the expected impact of the reforms and joint plan for mitigating risks identified		2	3	4
TCP13	Growth & Dev – EB Digital Barnet Programme	To gain an over view of major activities being carried out across the borough to improve digital inclusion amongst citizens, businesses and VCS’s and measure their impact			3	

There will be considerable benefit in identifying the business priorities and the processes by which prioritisation is achieved. This will be addressed in the Roadmap exercise.

## APPENDIX 4 – STRATEGIC APPLICATION CAPABILITIES

This section provides a more detailed view of the core application capabilities as described in Section 3 Current ICT Situation (Application). It provides both a rationale and set of implications for their implementation and use (dependencies and enablers are picked out in bold text).

### Integration

*Rationale:* Various stakeholder groups have indicated a need for greater integration between systems. This is needed to support a **data quality** drive and deliver efficiencies in service and channel shift by providing a reliable service for information interchange.

*Implications:* LBB should move to a common integration service based on an Enterprise Service Bus which acts as the interface between all systems. This enables re-use and more efficient use of development effort which translates to lower total cost to manage and a greater degree of flexibility when systems are changed in the future. **Data quality** is a key dependency for strong integration.

### Data Quality

*Rationale:* Data quality is a considerable issue for LBB. By developing a data quality platform, information asset owners can take advantage of automated processes to improve their data quality and so enable **integration** and better service delivery efficiency.

Development of both a customer and employee master data regime improves customer service experience, channel shift and improvements in internal processes such as starter, mover and leaver. Benefits can be obtained for equipment recovery as well as security risk mitigation and DPA compliance. This will enable business systems across LBB to reference a reliable and authoritative source for key information such as residents, businesses, employees and potentially locations as a gazetteer.

*Implications:* Adoption of a data quality platform requires buy-in to IM Strategy and the admission that problems exist which require positive action. While a platform can help with improvements, it needs to go hand in hand with data capture, validation and processing improvements at source.

### Identity & Access Management

*Rationale:* A common identity management capability enables a single point of the truth for managing access, revocation, authentication and authorisation of system users both external and internal. Adoption of a platform including federation where required enables consistent user credentials and associated management processes and reduces service calls and user frustration. The capability will deliver multiple options for authentication including linked external authenticators and multi-factor – both with a token and without.

Note the following diagram assists with understanding the logical steps associated with the establishment of identity management and the value-add services it can deliver:

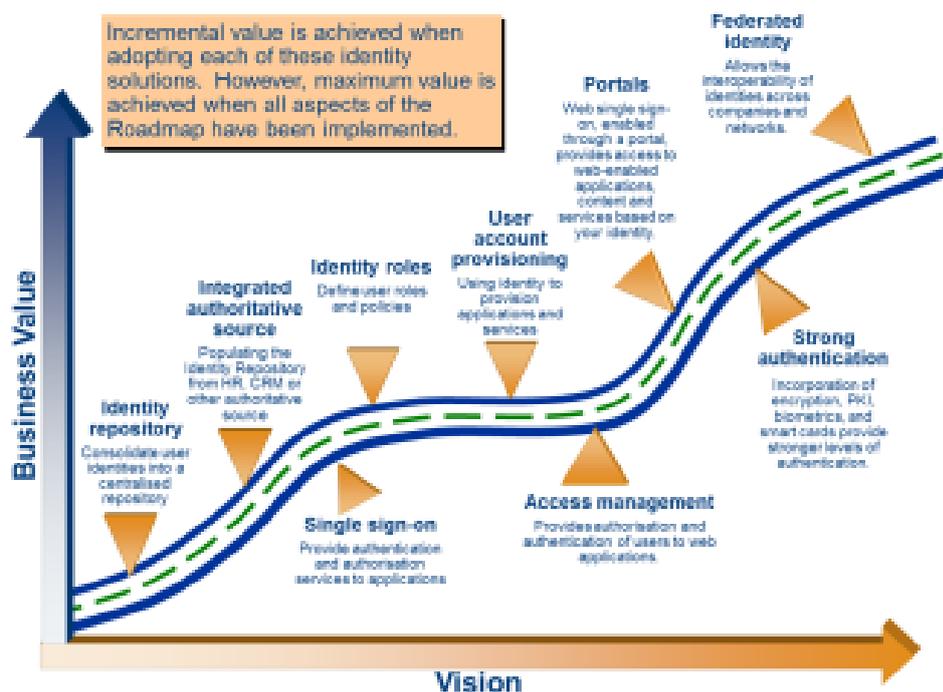


Figure 18: Identity management services value roadmap

*Implications:* A common identity management solution will ideally be linked to data associated with the identities stored enabling extended uses such as a staff directory fed, for example, from Human Resources. This in turn is dependent on an **integration** capability to manage data and provide administration, registration, enrolment and authorisation interfaces to consuming services. Identity context will need to be considered for individuals who can act in multiple capacities across LBB e.g. a resident who runs a business and is (or has been) an officer of the Council. Often separate solutions are required for external and internal users although these can be federated where required.

### Geographic Information (GI)

*Rationale:* Unifying GI and its management across the Council will enable extensive service and process improvement and allow for the provision of more reliable data to customers. GI can assist services in many ways ranging from improving the quality of service ticketing, delivering service directly to the location in question, providing supporting asset information and triage of multi-agency service request allocation.

*Implications:* The success of GI solutions and the benefits it brings is very dependent on **data quality**, **integration** and the accurate maintenance of geospatial data layers. The most effective systems combine the accurate creation of points, lines and polygons (an area on a map) with data sources which provide useful additional information such as asset numbers, service request identifiers, etc. These data should be maintained in one place and used many times. Occasionally it is required to share information between multiple GI systems. In these cases it must be clear which system holds the “master” where maintenance and updates take place.

## Electronic Document and Records Management (EDRMS)

*Rationale:* A key enabler of IM Strategy, the centralisation of electronic documents in a specialist system enables greater efficiency and security for staff (both in fixed locations and **mobile**) and partners by removing the need to return to a specific location to retrieve physical records. It also allows for better control and the ability to service DPA and FOI requests. Documents can be tagged and a strong security regime placed around them. It enables scanning, character recognition, redacting, legal admissibility of images and a wealth of other features. Rule-based retention and disposal are enabled.

*Implications:* To be successful, EDRMS needs a broad adoption across the organisation and an acceptance into standard process. These processes need to include the capture of paper documentation through scanning or direct, reliable electronic input. Processes need to be adjusted to include the use of electronic rather than paper documentation and the management of metadata and adherence to a robust file plan.

EDRMS may be usefully integrated to key corporate systems to aid the management of security and access authorisation linked to e.g. case management records. Lifecycle, retention and disposal policies need to be adopted and implemented.

## Collaboration

*Rationale:* As well as having a robust **document and records management system**, it is important to have a collaborative space for ad-hoc sharing of messages and information. Often this is layered on top of EDRMS to enable sharing of more formalised documentation too. Collaboration is needed both internally (teams developing documents together, shared workspaces, instant messaging, video conferencing, etc.) and with external parties such as the NHS but typically with additional security controls. The collaboration capability can also encompass productivity tools such as word processor, spreadsheet and presentation tools which will integrate with the shared spaces when creating, saving and opening documents and accommodate metadata capture. These tools can form the basis for a substantial reduction in the use of relatively unstructured stores such as shared drives.

*Implications:* Transitioning a user community to collaboration tools will help to enable more mobile working and consistent, secure information sharing. It requires robust **identity management** to ensure that access and permissions are accurate and appropriately applied. Users will need to have new working practices embedded to ensure the use the tools correctly and are able to replace shared drives rather than sit alongside them. Storage quotas by team and individual should be considered although this may be less of an issue if cloud solutions are actively sought such as Microsoft Office 365.

## Mobile Forms

*Rationale:* Often business systems do not readily lend themselves to mobile working requirements such as the use of specialised devices and off line working. Mobile Forms packages (often referred to as “Mobile Middleware”) enable the development of task-specific and device-agnostic forms and features targeted at the needs of the mobile worker. This can include stripping down complex data capture to only the specific fields required for a task or creating a simple day calendar linked to cases for attention. Typically these applications can work offline where there is no mobile signal or network connectivity and synchronise data back to core business systems when the network is restored. Usually **integration** is required to provide a conduit back to business systems and translate task-based data into business process information.

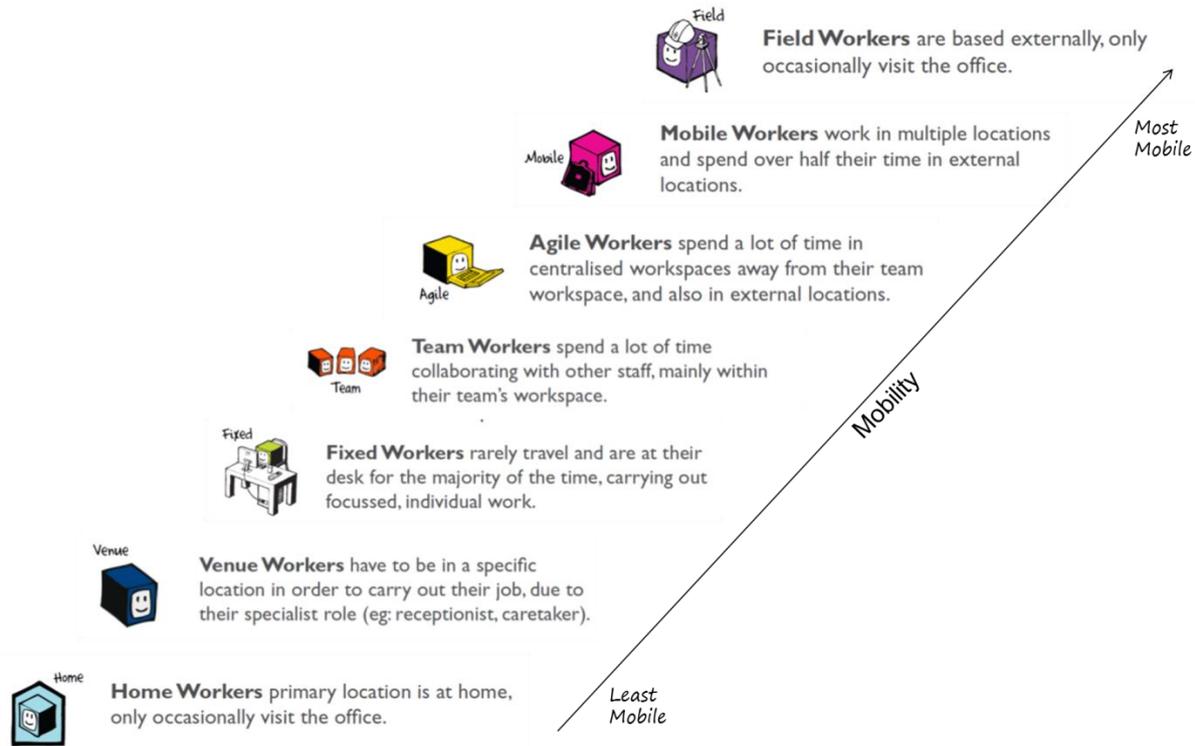
*Implications:* Successful adoption of mobile forms requires a maturity of understanding of the processes which are executed by mobile and field workers. This includes data capture and validation in particular to ensure that the applications are simple to use and suitably adapted to the task at hand. There is a trade-off between accepting the limitations of a business system in a mobile environment and the

inefficiencies that may cause versus the cost of process engineering and development which could create significant process and efficiency benefits.

## APPENDIX 5 – END USER DEVICES AND MOBILE WORKING

There is a great deal of demand in the Council for mobile working driven by the need to make service delivery more efficient and in particular with the space constraints the Council will come under in future years.

Smarter Working has previously identified seven “worktypes” which illustrate the styles of working which the Council workforce can be categorised as. These are illustrated as follows:



The solution for Home, Venue, Fixed and Team workers has been established as a laptop by default to create the flexibility which will be required as office moves occur ultimately leading to a substantial space reduction in Colindale. A traditional desktop device will be available by exception for those workers with specific needs which cannot be satisfied with a laptop or for public access. In addition to a laptop, staff in these worktypes will have access to a desk-based phone located at venues, workstations and some hot desk areas.

Home, Venue, Fixed and Team workers will typically work from the same location day in day out or at most will be located at one Council office or another.

Mobile working comes into play for staff whose role includes working at multiple locations, some of which are not Council sites or offices.

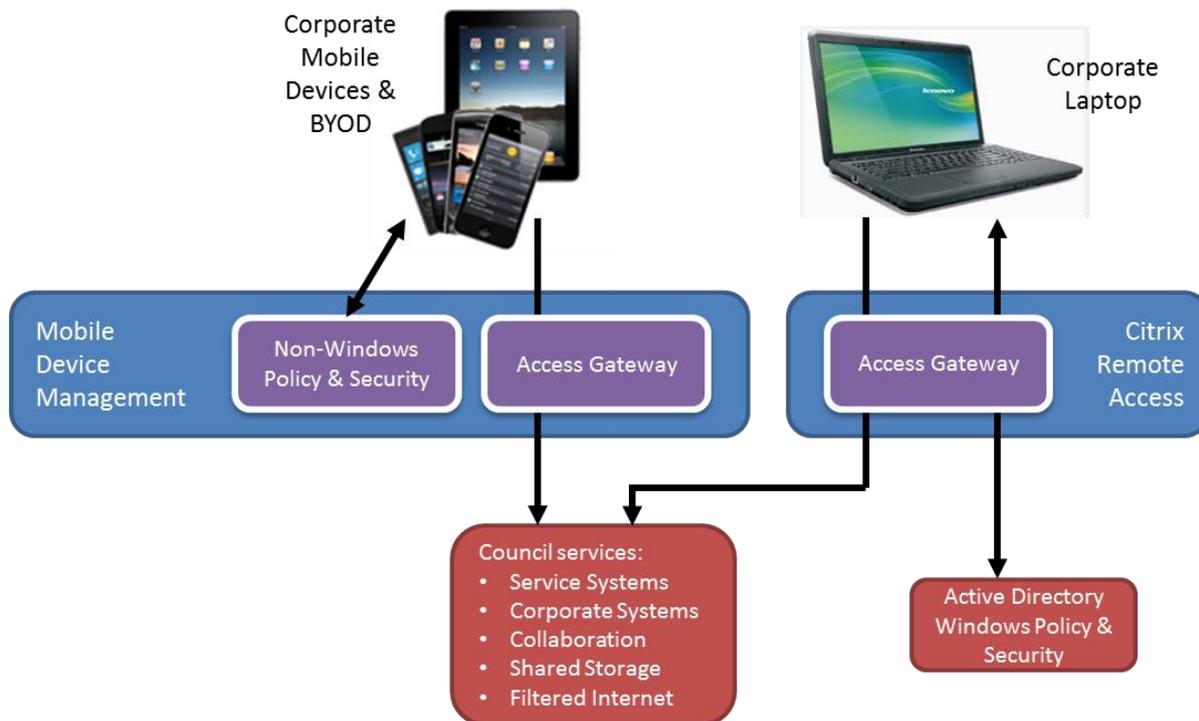
For Agile, Flexible and Field workers, there is a need to develop a group of ICT solution “bundles” which are capable of supporting a variety of working practices which take into account:

- what information and systems they need access to
- what environmental issues they will encounter e.g. location, personal safety, mobile network coverage, etc.
- how they can remain in contact with their team/manager
- their IT literacy and skills

- what security and policy measures apply

For a solution to be satisfactory for more mobile users, all of the above considerations need to be satisfied which has a number of implications. This might include for example more conversion of paper to electronic records, mobile forms applications where Council systems don't lend themselves to mobile user interfaces or slower network connections, enforcement of appropriate security controls (which is necessary but could be unpopular), additional training and changes to working practices.

The following diagram shows how mobile devices are connected to the Corporate network and how non-Windows devices like Apple and Android require a mobile device management platform:



End user devices can come in a variety of forms. Smartphones are lightweight, easy to carry and conceal but could place constraints on applications due to a relatively small screen area. Tablets are similar to smartphones in function but with a larger screen area where the payoff is a larger and heavier device. These can also be plugged into a keyboard for more data entry intensive working but are not necessarily substantial and robust in their construction. Laptops are heavier again than tablets but have an integral keyboard, can accept pluggable peripherals such as printers, and have a more robust keyboard for data entry. Most devices are now capable of being fitted with a 3G/4G SIM or able to receive a mobile “dongle” to enable working away from wired or wireless networks.

When selecting the right device(s) for a particular working style it is important to weigh up the pros and cons of each.

Access to information and systems requires an understanding of the specific worker or team and the readiness of systems to supply that service to a mobile device. Typical issues are:

- Information is not available electronically e.g. paper-based documents, job sheets, etc.
- The application user interface does not lend itself to small screens or touchscreen operation
- Mobile network coverage is patchy so requires offline working
- Information sensitivity versus the ability of a device to comply with policy

These issues are surmountable but require consideration to understand the cost and potentially additional solutions that may be required to enable access while complying with policy.

From a security perspective, it is a commonly held view that the constraints of PSN accreditation prevent flexibility or relaxation of certain security controls as per guidance issued by the Cabinet Office. The current network design for Barnet is “flat” in the sense that there are no secure or semi-trusted partitions which might be used to accommodate more- or less-trusted levels of access to Council data. This means that PSN guidance is the default for mobile access and the controls which need to be placed on any device which has access. This is not to say enclaves cannot be created, simply that they do not exist today. It should be noted that there is some expense to creating enclaves and managing the data which is to be stored in it for external access. This should be considered when evaluating a business case for less secure access to some Council data versus the possible irritation of staff who are obliged to use, say, a fairly complex password or limitations on the number of applications allowed on their device.

The Cabinet Office is now issuing guidance for the configuration of Bring Your Own Device (BYOD) on certain mobile device management platforms. Initial indications are that this would involve some fairly heavy security provisions which would merit more detailed investigation. The main thrust of the guidance is that *“the device is placed under the management authority of the enterprise for the complete duration it is permitted to access OFFICIAL information”*. This can cause considerable concern to the device owner if they fear that, for instance, their device may be wiped of data in the case of loss including their personal information. For more information on the current position, see the following: <https://www.gov.uk/government/collections/bring-your-own-device-guidance>

### **So what do we already have?**

Mobile working is already enabled at Barnet.

A considerable number of staff have laptops which are enabled for WiFi remote access which enables access to Council information and systems from remote locations such as home, cafes and other partner sites. In addition to these there are over 260 iPad devices in use by Members and Barnet Group to access a limited set of services and applications. These include email, calendar, Modern.Gov and Barnet Homes’ First Touch.

There is a Mobile Device Management (MDM) platform in place which manages the iPad devices, applies appropriate security policy and manages access into corporate applications and storage areas. This is required to satisfy PSN accreditation stipulations and to be able to react accordingly when informed of a device loss or potential compromise of Council information security. The MDM platform is capable of managing a broad range of devices but is limited by the capability of the devices to be managed – some do not provide sufficient policy support to allow security guidelines to be enforced.

### **So what do we need?**

To support the needs of Agile, Flexible and Field workers, a broader range of device types is required. There is also the need to be able to support a number of different working scenarios within the worktypes as not all field workers, for instance, are exactly the same. The Smarter Working Programme has gone a long way towards identifying these variances which allow us to consider a specific set of device types which would satisfy the majority of scenarios.

The following devices are recommended for further evaluation based on Capita experience (iPad is already used in Barnet so remains a viable mobile working device):



**Microsoft Surface Pro 3** – this device provides a tablet experience with the potential to replace a laptop as it has a keyboard too. The main benefits are to security as they are based on Microsoft Windows operating system and therefore can have the same level of user experience as Council laptops and approved security tools.

This is effectively a hybrid device: tablet and laptop



**Lenovo Helix** – similar to the MS Surface Pro, this device provides a tablet experience with the potential to replace a laptop as it has a keyboard too. The main benefits are to security as they are based on Microsoft Windows operating system and therefore can have the same level of user experience as Council laptops and approved security tools.

This is effectively a hybrid device: tablet and laptop



**Lenovo Yoga** – this is an Android tablet based on the Linux operating system. This would rely more heavily on the MDM platform to enforce security. The penetration of Android in the tablet market and comparative pricing to hybrid or laptop devices means this be an attractive alternative to hybrids although fewer Council applications would run on the device.

In addition to these, smartphones will be trialled. Some suitable device selection will be required although iPhones will already work as they are essentially the same as the proven iPad solution. Consideration should be given also to RIM Blackberry smartphones which have recently come to the market. The Council has made significant investment in Blackberry's enterprise server which enables access to email. Blackberry's offer is now capable of mobile device management and will be assessed as part of the strategy roadmap exercise.

One of the major factors which disrupt mobile working implementations is the rapid proliferation of requests to access a broad range of business and non-business applications. The recommendation is to establish a core set of services which any mobile user might need, then extend it on a managed basis matched to specific worker needs.

A suitable core set of services could be considered to be (subject to evaluation/agreement):

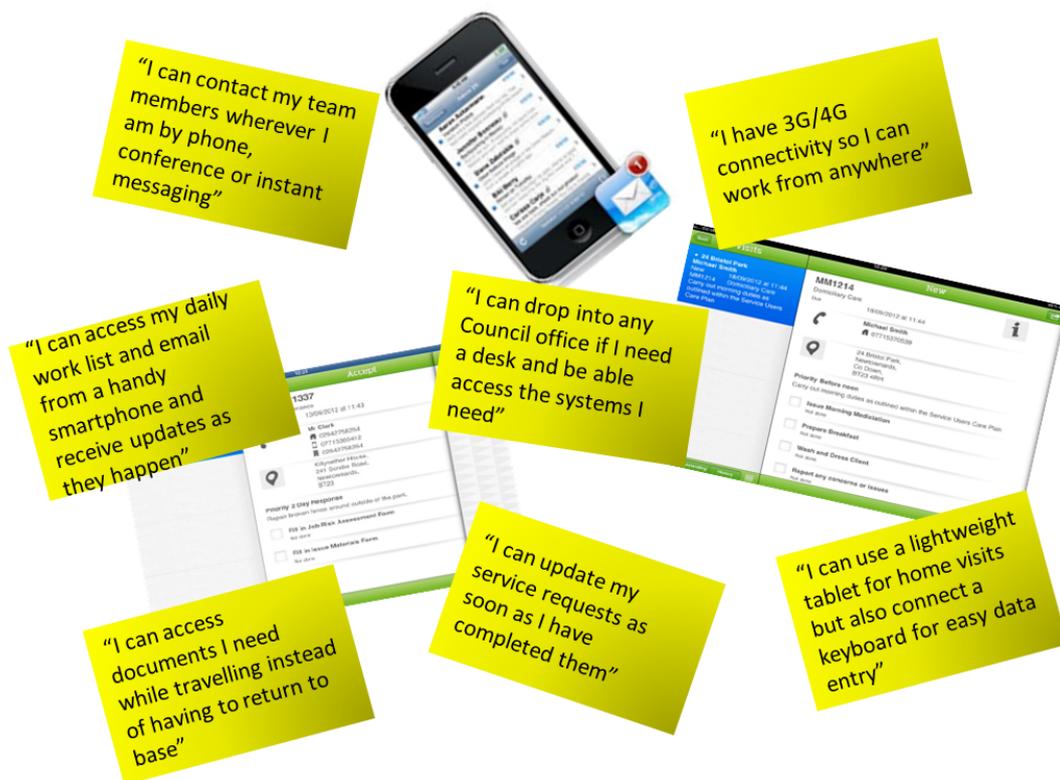
- Corporate email (not GCMail as this has additional security constraints)
- Calendar, contacts and Tasks
- Word Processor, Spreadsheet and Presentations applications – ideally compatible with Microsoft Office file formats
- Access to collaboration/storage drive(s)
- Collaboration tools e.g. Lync, One Drive
- Intranet access
- Filtered internet access in accordance with Council policy
- Audio conferencing/softphone

The next stage is to establish a “bureau” style service which is empowered to evaluate further applications as they are identified for mobile worker needs to assure their security, compatibility, licensing and support profile. The capacity of this service would need to scale depending on demand as mobile working is rolled out. Evaluation will also be required of the ability to access the information and systems required to support the worker’s role and whether, for instance, paper records need to be scanned to reduce the need to “return” to base more often.

Examples of where exceptions may need to be considered will be if access is required to sensitive systems such as social care case management systems or lower security requirements such as when users cannot or will not comply with standard security policy. In these cases secure enclaves might be required which will require additional investment.

With the addition of appropriate HR policy, local working practice guidance, training and support it is anticipated that this mobile working approach will be both workable and achieve space savings and efficiencies.

## So what will the user experience be like?



With the proliferation of WiFi across council sites and 3G/4G connectivity as part of the Smarter Working programme, introduction of touchdown and hot-desk areas and the introduction of collaboration tools, mobile working is becoming increasingly viable.

Workers will be able to take their work into the field, receive work instructions, capture case notes, check emails and use expert systems to support their work. A suitable device for the role could be, for example: a smartphone for a fleet escort driver, a hybrid device for a senior manager and a tablet for a children's centre worker.

By using collaboration tools, workers can share documents and information remotely whilst using conferencing to remain more personally connected to the team and their manager. Through effective evaluation, access to applications and forms required to carry out tasks can be targeted at the specific needs of the user.

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