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Executive Summary

ICT Strategy for Belfast City Council 2018-21

What is the ICT vision?

The Council will become an exemplar in the use of innovative technology to deliver improved outcomes for Belfast and its citizens



This means that **Digital Services** will:

- develop a deep understanding of business areas to be the **Council's trusted advisory** and **delivery partner**
- lead the use of **innovative technologies** to deliver better outcomes for citizens
- drive the **improved use of data** to support better decision-making
- be a **key technology delivery partner** supporting the Belfast Agenda and innovation initiatives

ICT Strategic Themes

The target state and recommendations for this ICT Strategy are defined in terms of six ICT Strategic Themes to provide clarity around technology direction for the Council.



A. Customer Focus

Developing a digital platform to support a corporate approach to customer management



B. Application Landscape

Targeting an application landscape that meets the Council's needs



C. Analytics

Making better use of data sources to drive decision-making



D. IT Capability

Enhancing delivery capability and governance to meet expectations and transformation challenges



E. Cloud

Managing the growing adoption of cloud software and infrastructure



F. Emerging Technology

Monitoring innovative technologies for use cases by the Council to improve overall service delivery

1 Customer Focus – Detailed Discovery



Conduct a **rolling programme of detailed discovery exercises** per business area...

...so that there are well understood, **clear requirements for the key technology procurements** that will form the foundation of customer transformation.

2 Data Strategy



Define the **Analytics target operating model** and the approach to data to improve evidence-based decisions...

...so that it understands the people, process, data and **technology** needed to achieve data-driven outcomes, e.g. measuring Belfast Agenda KPIs.

3 Cloud Strategy



Establish the **direction for adopting cloud** technology within the business via a Cloud Strategy...

...so that the Council has a clear set of **cloud principles** that can be used to guide complex enterprise technology procurements, e.g. CRM, Finance.

4 Complex Technology Procurements



The Council has significant technology procurement requirements, ranging from new technology recommended by the ICT Strategy and Customer Focus initiatives to the replacement or upgrade of existing corporate applications.

Coordinate and **execute technology procurements** to ensure that they are aligned to the ICT Strategy and its principles.

Sample technology procurements:

- Corporate CRM
- Website
- Integration platform
- Analytics platform
- Finance
- EDRMS
- Asset Management

5 Implementation Programme



Establish a **transformation programme** to govern the implementation of the ICT strategy and Customer Focus initiatives, including introducing **new technologies** (e.g. CRM, EDRMS), **upgrading existing technologies** (e.g. Finance) and delivering the **business change** required to maximise value from the investment made.

Other important recommendations



- Establish the **innovation governance framework** to enable the Council to adapt to evolving initiatives originating from Belfast Agenda, Smart Belfast Framework, etc.
- Develop a **target operating model** to define how the Council will meet challenges presented by the digital era, e.g. analytics, innovation, emerging technology.

Section 1

Introduction

Introduction

Background and context

Belfast City Council (“the Council”) is the largest local authority in Northern Ireland. It is responsible for the delivery of a number of key services such as those relating to planning, refuse collection and disposal, street cleansing, health and environmental services, community development, leisure, parks and recreational facilities.

The Council is a large user of information technology, with over 1,900 workstations, and supports a wide ranging portfolio of software applications and databases, running over a complex and widely dispersed infrastructure.

The Council’s Corporate Plan 2017-2021 sets out the priorities of the organisation, which are aligned to the Belfast Agenda. The document also contains a programme related to creating a fit-for-purpose organisation, which includes activities aligned to customer focus, service improvement, organisational development, and the efficiency programme.

Digital Services

Digital Services is an internal service providing technology services to the rest of the Council. This involves the provision and maintenance of the telephony, network and server facilities, supply and maintenance of computer hardware and acquisition, supply of software and training, and reprographics.

In addition, Digital Services also has an external portfolio of business, which supplies systems to the Northern Ireland Housing Executive, local Councils in Northern Ireland and other public bodies throughout the UK.

Objective of the ICT Strategy

Belfast City Council requires an ICT Strategy to provide a framework for members under the remit of the Strategic Policy and Resources committee to oversee the coherent, long-term development of the Council’s ICT platforms and systems – over a period of three years – according to the Council’s key business priorities.

This document

The remainder of this ICT Strategy is structured as follows:

- **Section 1, Introduction**, outlines the background to the development of this strategy, and identifies the strategic context in which the Council and Digital Services currently operate;
- **Section 2, Current State Assessment**, provides an overview of technology service provision within the Council. The assessment reviews the IT service and capability across six dimensions;
- **Section 3, ICT Vision**, describes a vision for technology services within the Council to support the delivery of the Belfast Agenda;
- **Section 4, ICT Strategic Themes**, describes the key focus areas for technology within the Council, with a high level overview of how the target state should look; and
- **Section 5, Implementation Roadmap**, provides a programme of work for how the range of IT initiatives could be delivered over the period of the strategy.

Approach

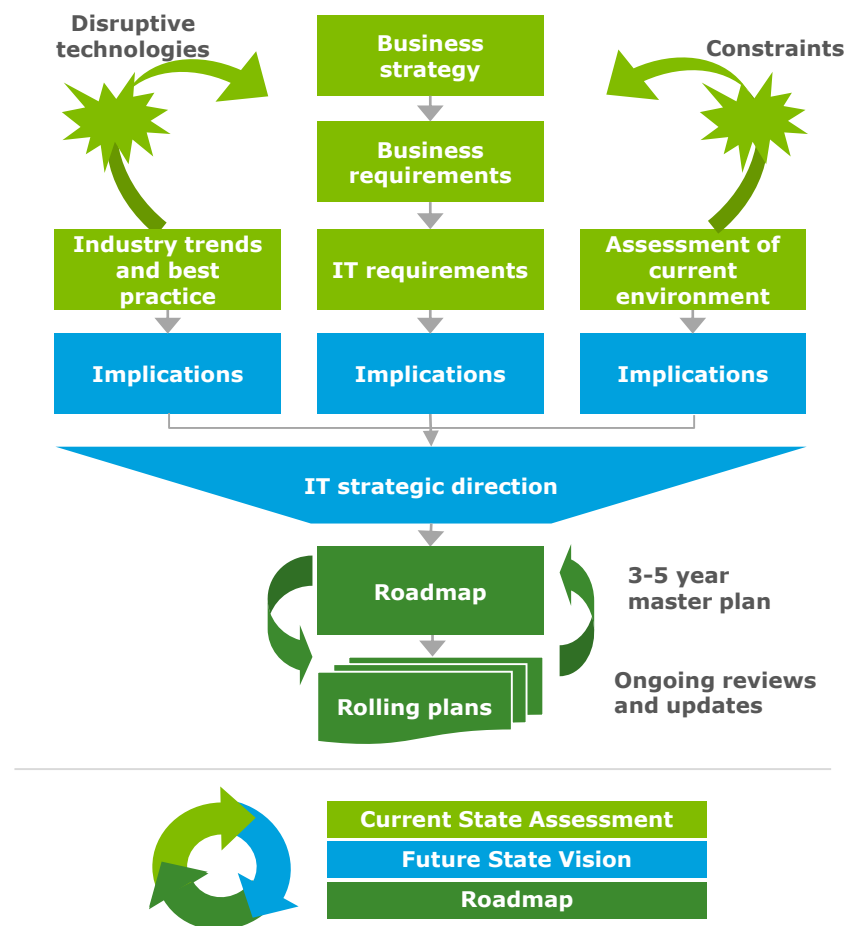
An overview of the approach to develop the ICT Strategy for the Council

The approach to developing this ICT strategy has been derived from extensive experience of supporting clients with similar challenges.

Some of the key features of the approach to developing this ICT Strategy for the Council have included:

- **Business interviews** – the team conducted interviews with senior stakeholders from each business directorate to understand perspectives on technology provision across the Council, and to understand business strategy and technology requirements;
- **Collaborative workshops** – several current state assessment and target stated development workshops were held to challenge and shape the specific focus areas for the strategy;
- **Technology review** – the team completed a high level review of core business applications to understand key challenges;
- **IT and Service capability assessments** – to improve the quality of analysis, and accelerate delivery, an assessment of the IT service and capability was carried out; and
- **Desktop research and analysis** – the team reviewed a wide range of documentation, including current business and IT strategies, the “Belfast Agenda” and the emerging findings from the Customer Focus Programme, alongside broader research into technology solutions and leading practice.

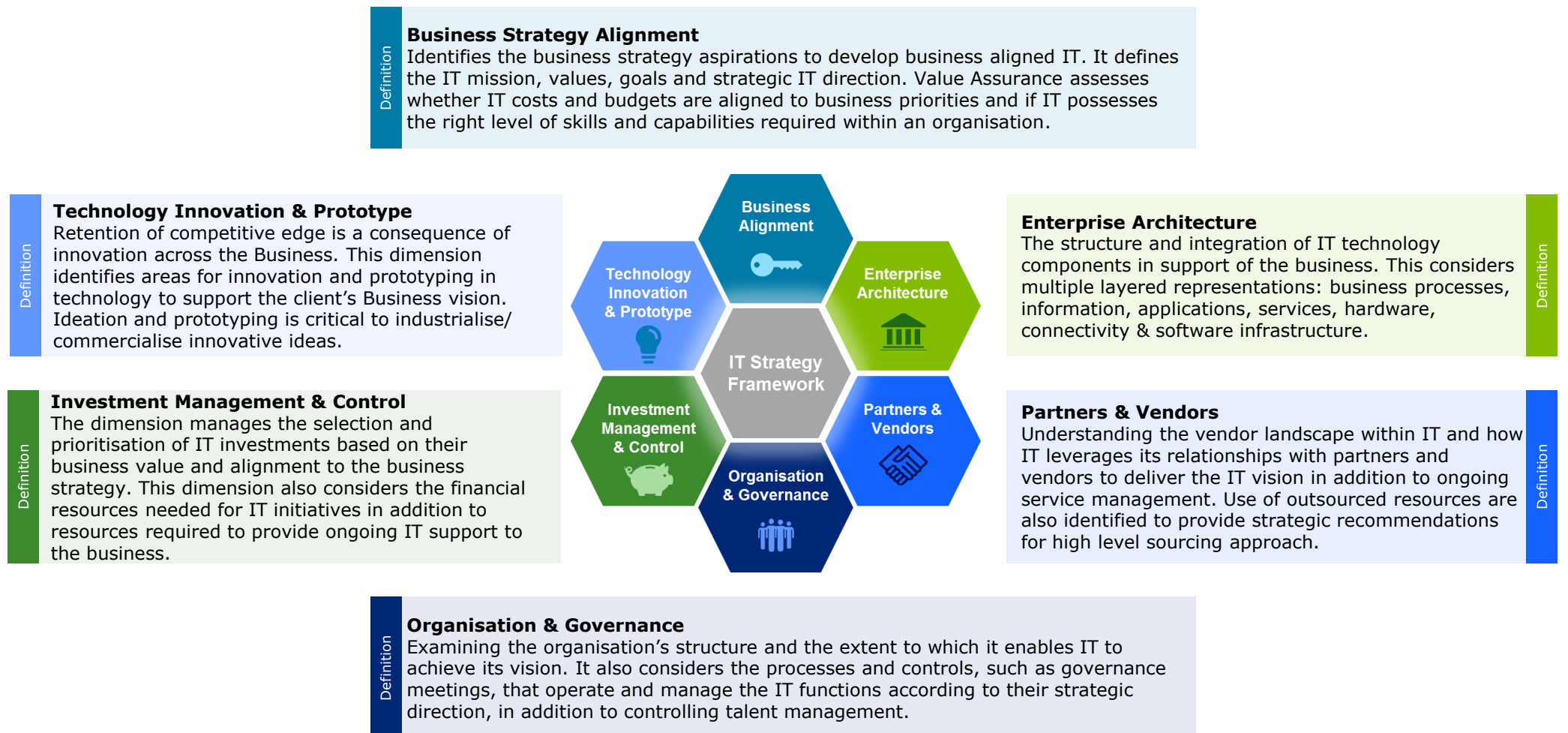
The diagram below illustrates the iterative approach used to develop the ICT Strategy.



Technology assessment domains

The framework used to support a holistic review of technology in the Council

The following diagram provides an overview of the six technology domains that have facilitated both the analysis of the Council's current IT landscape and the definition of the future IT requirements.



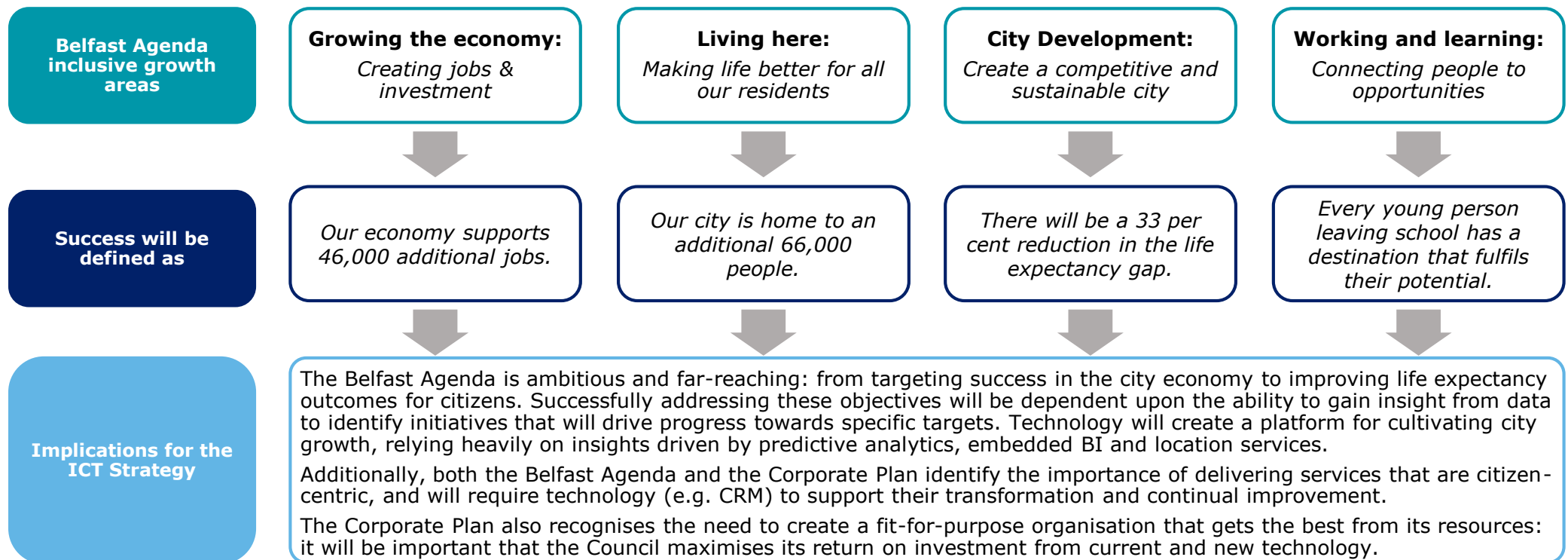
The Belfast Agenda – A new vision for Belfast in 2035

An overview of the key growth areas from Belfast’s first city community plan and the potential implications they have on the ICT strategy

The Belfast Agenda is the city’s first community plan, created by a strong partnership led by Belfast City Council. It identifies the work that the Council and delivery partners will focus on to unleash the energy and ability that exists in the city’s people and communities.

The vision articulated in the community plan describes Belfast as a “city re-imagined and resurgent. A great place to live and work for everyone. Beautiful, well connected and culturally vibrant, it will be a sustainable city shared and loved by all its citizens, free from the legacy of conflict. A compassionate city offering opportunities for everyone. A confident and successful city energising a dynamic and prosperous city region. A magnet for talent and business and admired around the world. A city people dream to visit.”

The Belfast Agenda – and the underpinning Corporate Plan 2017-2021 for the Council – outlines a number of objectives and goals, in which the Council will play a central delivery role. The following diagram outlines the growth areas and the potential implications from a technology perspective.



Delivering the Belfast Agenda

The Belfast Region City Deal and the Smart Belfast framework will underpin the delivery of the desired outcomes of the Belfast Agenda

Belfast Region City Deal (BRCD)

The Council – in partnership with other local councils and education providers – has successfully secured £1bn of investment from a number of sources, including the UK government (£350m announced in Budget 2018), local government, the universities and the private sector.

The bespoke funding package is designed to deliver a step change in our region's economic fortunes, help achieve a 10 year programme of inclusive growth, and create 20,000 new and better jobs, accessible to people from all communities – *all of which are fundamental to the successful delivery of the Belfast Agenda.*

The four pillars of the City Deal proposition are:

- Innovation and digital
- Tourism-led regeneration
- Infrastructure
- Employability and skills

In particular, the vision for BRCD is to leverage the region's strengths in cyber security, data analytics, software development, and increasingly innovation, to create a world-class offer in secure infrastructure and applications for the Internet of Things (IoT).

Delivering the Belfast Agenda

Smart Belfast Framework

The Belfast Agenda sets out some really ambitious goals, such as growing the city population and increasing the number of people working in Belfast. To meet these goals, the Council has recognised that it needs to start thinking differently and embrace innovative approaches to problem-solving.

The Smart City Framework, developed by the Council in partnership with Future Cities Catapult, seeks to establish a collaborative, cross industry approach to problem solving within Belfast.

Its primary goal is to build the necessary foundations and infrastructure on which SMEs and partners of the city can create solutions that will help achieve the vision of the Belfast Agenda.

While the proposed smart city projects will not be technology-led, it is expected that they will pursue opportunities in digital and data technologies that can improve outcomes for citizens.

There is a strong appetite among key partners to unlock innovation through digital and data projects. This will make use of some of Belfast's major growth sectors, such as cyber security, analytics, IoT, and machine learning.

Implications for the Council's ICT Strategy

Increasingly, the role of technology for local government is extending beyond the local authority's organisational boundaries, to be viewed as a key component of initiatives to deliver better outcomes for its citizens. For Belfast City Council, it is clear that digital, analytics, and innovation themes are embedded within the City Deal and Smart Belfast Framework initiatives. Consequently, the Council's technology organisation – Digital Services – will have a central role to play in the governance surrounding the development and implementation of technology innovation initiatives.

Strategic Context

Additional strategic drivers that influence the development of the ICT strategy

Technology is advancing exponentially and becoming increasingly affordable, providing a clear enabler for transformation in public service delivery.

However, it is important for public sector organisations to understand additional factors that are driving the need for technology-enabled transformation, namely cost pressures and rising public expectations. The diagram below provides a brief summary of the effect that the state of the public finances, and rising public expectations, is having on the digital transformation ambitions of public sector organisations.

The state of the public finances

Several years after the global financial crisis, the UK continues to deal with its consequences for the public purse.

While economic recovery is well established, public sector austerity is expected to remain throughout this UK Parliament as the Government strives to eliminate the deficit that the crisis created.

This has created unprecedented levels of cost pressures on the delivery of public services within the devolved administration, forcing our public services to embark upon an extensive programme to change the way we deliver public services.

To address the cost pressures, our public services will need to transform, using digital technology, to become more effective and efficient in delivery.

Rising public expectations

Our citizens are increasingly using digital technology in their daily lives – from making payments through a mobile banking app to completing the weekly shopping online.

The rapid increase in mobile technology has created a society where citizens are constantly connected to the world around them.

The private sector has led the way in terms of innovation, finding new ways to harness digital technology to engage and serve its customers, providing a higher level of service, while reducing its cost base.

Increasingly, citizens are expecting their interactions with government to be seamless and digital first, with a user experience that is intuitive and akin to that which they get from their bank, supermarket or utility company.

Customer Focus Programme

The Council is embarking upon a new, corporate approach to Customer Focus. One of the biggest changes required to improve the customer experience will be creating and improving digital interactions with customers. Enabling customers to engage with the Council through multiple channels will require additional technology, which must be fully integrated.

Channel, process and data integration will all be areas that require improvements in technology, with the Customer Focus programme expected to provide key requirements in relation to:

- CRM adoption;
- Workflow;
- Business Intelligence;
- Application integration;
- Replacement of legacy applications;
- Web design;
- Online service delivery; and
- Mobile service delivery.

As challenging, multi-year transformation programmes, the Council must ensure that the implementation of both the ICT Strategy and Customer Focus programme are aligned.

Major programmes

Two key areas of strategic relevance impacting the ICT Strategy, and how they will align to the strategic context within BCC

BCC Local Full Fibre Programme (LFFN)

One of the key strategic aims of the Belfast Agenda is to improve connectivity, recognising that digital infrastructure is integral to the sustainability of the city. The BCC LFFN programme will help to create the circumstances in which technological innovation can flourish in support of the visions of the Belfast Agenda.

Having been awarded significant government funding, the Council intends to connect council buildings across the city to create a gigabit-capable fibre network, thereby future-proofing its own connectivity requirements for 25 years.

The Council is also seeking to maximise the availability and benefit of gigabit capable broadband services in the City Centre through, the Public Sector Asset Reuse (PSAR) project, which aims to allow ducting within the Streets Ahead area to be used to deploy fibre services much more cost effectively than is currently the case.

The BCC LFFN programme will also support the aims of the Belfast Region City Deal and Smart Belfast Framework. The BCC PSAT project will deliver a fibre network connecting at least 100 of the Council's premises that can provide opportunities to support digitally transformed user focussed Customer services, digital infrastructure which includes networking, sensors, devices, and data management systems and 5G smart districts and test-beds.

Implications for the ICT Strategy

The LFFN Programme is an example of the type of initiative to support technology for the city – through the implementation of the Belfast Agenda, Smart Belfast framework, and the City Deal – that will increasingly require Digital Services' input. The ICT Strategy will need to provide direction to the Council in terms of identifying, qualifying and implementing these innovative technology solutions.

Information security

Digital Information Security is recognised as a key corporate risk, with a growing awareness that it must be strategically aligned with the delivery of the Council's key aims and objectives.

This will require a greater level of governance of business risks and cyber security risk management, encompassing both governance and technical controls. The Council will need to develop processes that integrate information security into all the areas of the Council including technology, processes and staff behaviours.

Increased reliance on Information and IT systems means that cyber security incidents that impact confidentiality, integrity or availability of information assets present a serious threat to the Council. The Council is facing a growing number of cyber-attacks from an expanding range of sources. Any such incident could have serious impacts, e.g. loss of intellectual property, interruption to services, regulatory penalties or reputational damage.

To mitigate these risks, Digital Services is in the process of developing a new IT Security Strategy, having first conducted a business impact assessment. The agreed business impacts provide a better understanding of the risks faced, which will help focus future investment in the most strategically appropriate information security controls (people, process or technology).

Implications for the ICT Strategy

Following the delivery of the outcomes of the Customer Focus Discovery exercise and this ICT Strategy, Digital Services will be in a position to develop the Information Security Strategy aligned with the strategic aims of the Council, including developing the business case to support the implementation of a corporate document management solution.

Section 2

Current State Assessment

Introduction

The purpose of the current state assessment is to understand how IT is delivered, alongside the business drivers and their potential impact on IT

When developing an ICT Strategy, it is important to have a good understanding of the current level of IT provision within the business. The purpose of the current state assessment is to understand how IT is delivered, alongside the business drivers and their potential impact on IT.

The key areas of focus for the current state assessment include understanding:

- how well IT and the business are aligned, considering business objectives alongside business perspectives on IT provision;
- what the key line of business applications are, and how well they meet the business' functional requirements;
- how the Council uses IT Suppliers and other third parties to complement internal IT capability to deliver a full IT service to the business;
- the capabilities of the IT organisation across the range of IT disciplines;
- how IT spending is controlled within the Council, both in terms of management of operational expenditure and investment in new and upgraded technology to support business growth and transformation; and
- demand for innovation within the Council and how the Digital Services offering facilitates or enables that demand.

This section provides a brief summary of the key observations from the current state assessment of IT provision within the Council, alongside individual observations made against each of the six dimensions of the assessment framework.

Business perspectives on ICT provision

Understanding the current IT challenges provides the basis for change and allows technology focus areas to be identified

The primary purpose of any technology strategy is to underpin the business strategy: for the Council, this includes understanding how technology services are broadly aligned to deliver the Belfast Agenda and the underpinning corporate plans.

The views presented provide a representative sample of the opinions expressed at the six stakeholder workshops conducted as part of the development of this ICT Strategy, as well as some perspectives obtained from the Customer Focus initiative.



Key Observations

Despite its strong foundations, it will become increasingly difficult for Digital Services to meet the Council's technology requirements without making significant investment in key areas

The four areas below distil the key challenges and obstacles that Digital Services is currently facing, and have provided the foundation for the ICT Strategy and recommendations.

Delivering on customer initiatives

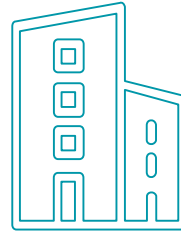
While the business is making progress defining the Customer Focus programme, there are barriers to Digital Services meeting future demand for digital citizen services because of a number of constraints, including:

- Multiple instances of CRM are inhibiting the ability to provide an integrated customer experience across council services and departments; and
- Digital Services and the business are not sufficiently aligned to foster co-creation of solutions despite this being particularly important when considering customer experience.

Insight and organisational performance

The Belfast Agenda provides the Council with a clear mandate of improving the lives of its citizens and the city environment as a whole. However, the Council has limited means of measuring progress, internally or externally, given that:

- data is not easily shared across Directorates, with insight largely present in silos;
- there is currently no strategic ownership or governance model in place to maximise the sharing and appropriate use of data at an operational or strategic level; and
- current technology adoption does not enable reliable and accurate insight to be gathered.



Digital Services

Technology challenges

Foundational to providing a stable platform from which to operate, Digital Services are encountering a number of challenges, including:

- A large number of corporate, supporting applications are due to be replaced or upgraded;
- Applications are not integrated across the landscape, inhibiting the ability to maximise benefits and deliver insight; and
- Multiple point solutions exist across the portfolio with a high amount of duplicate functionality, for example multiple instances of CRM.







Adapting ways of working to meet demand

Portfolio management is an area where Digital Services will require further improvement to cope with future demand. Currently, the team:

- runs on a rolling schedule of work, making prioritisation and demand forecasting a challenge for both Digital Services and the business; and
- does not have sufficient capacity or flexibility built into resourcing to meet known future demand from the Customer Focus initiative, alongside Directorate and other corporate priorities.

Other Observations

A summary of other observations from the current state assessment

Dimension	Observation(s)	Implication(s) for Digital Services
 <p>Business Alignment</p>	Through discussions with key stakeholders it became clear that there is both a need and an appetite among the business and Digital Services to work in a more collaborative manner to understand technology opportunities and deliver change.	On occasion, Digital Services are involved in key technology decisions at a late stage, which impacts the quality of input the team can have. Additionally, some individual business perspectives are that Digital Services prioritises corporate projects, making it difficult to deliver specific line of business solutions.
 <p>Enterprise Architecture</p>	Managing the current application estate will become an increasingly challenging responsibility for Digital Services as it has grown in size and complexity over time with no clear strategy in place.	Limited formal enterprise architecture strategy has resulted in duplication of functionality and data across multiple systems, impacting on the quality, availability and governance control of data, e.g. case management, booking resources.
 <p>Partners & Vendors</p>	By delivering core technology services in-house, including bespoke solution development, Digital Services have needed little input from external suppliers to-date. They do, however, have support contracts in place as required.	The responsibility for development and support of technology services (including infrastructure, application and end user computing) currently lies with Digital Services. Additional external support is likely to be required to deliver value-adding change initiatives.
 <p>Organisation & Governance</p>	Digital Services provides a good core IT service to the business, and delivers on corporate priorities. However, there is a need to improve governance, including maturing decision-making and prioritisation processes to provide transparency around how resources are being utilised.	The current process has meant that it is difficult for Directorates to have visibility of the current programme of work internally, as well as information regarding the decision-making process. This can lead to frustration within the business and a desire to deliver technology solutions in isolation.
 <p>Investment Management & Control</p>	Resource capacity within Digital Services is directly impacted by the level of external income as 30 per cent of the operating budget funded externally.	There are significant risks to both headcount and service provision if this (or alternative) funding is not secured long-term. The current arrangement with NIHE requires a two year notice period, however it will be difficult to secure a like-for-like replacement contract.
 <p>Technology Innovation & Prototype</p>	Defining the approach to innovation within the Council is at an early stage of development. Governance processes to align innovation with departmental delivery plans requires further work.	Digital Services is often involved in remediation activity when issues arise with technology adoption or technology procurements. On occasion, this involvement at a late stage can lead to missed opportunities during design and implementation.

Section 3

ICT Vision

ICT Vision

The Council will become an exemplar in the use of innovative technology to deliver improved outcomes for Belfast and its citizens

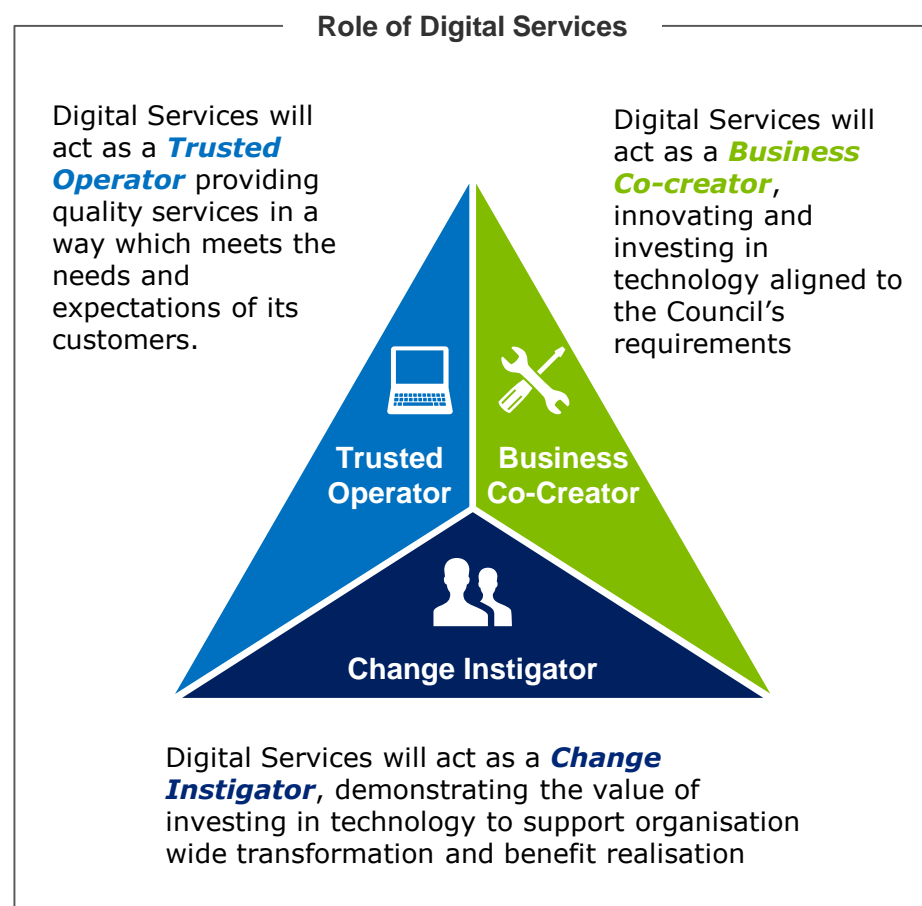
Digital Services will:

- develop a deep understanding of business areas to be the Council's trusted advisory and delivery partner
- lead the use of innovative technologies to deliver better outcomes for citizens
- drive the improved use of data to support better decision-making
- be a key technology delivery partner supporting the Belfast Agenda and innovation initiatives

Understanding the ICT vision

How must Digital Services respond to the ICT vision?

Digital Services has the primary responsibility to deliver the ICT vision for the Council, including supporting the wider organisation to use technology to fulfil the vision. While many IT organisations can be categorised into three distinct roles (Trusted Operator, Business Co-creator and Change Instigator), Digital Services will need to be able to fulfil all three roles, adapting to the situation at hand, delivering reliable services alongside innovative and responsive change.



As a **Trusted Operator**, Digital Services will build on the current strength of its service delivery, retaining responsibility for the provision of reliable IT infrastructure, end user computing, productivity applications and line of business applications that meet the needs and expectations of its customers and enable the wider organisation to deliver core public services.



As a **Change Instigator**, Digital Services will work closely with our business partners and wider stakeholders to identify areas where efficiencies can be made through digital transformation, including improved use of technology and data. Digital Services will collaborate with our partners and stakeholders to ensure that all parties are aware of, and focused on, the potential benefits and value that can be achieved through technology within each change initiative.



As a **Business Co-Creator**, Digital Services will seek opportunities to deliver technology solutions to other public bodies (e.g. other councils within the region) where those technology solutions are relevant to the Council itself. Digital Services will take a leading role in the design, development, implementation and ongoing support of those technology solutions.

Guiding Principles

A framework of key principles to support the Council to make technology decisions that are aligned with the ICT vision

#	Principle	Description	Implication
1	Focus on customer experience.	Customer Experience must be the key criteria while deploying any technology enabled capability and this will drive efficiency through avoidable contact and higher take-up of digital services.	All solutions will be designed with user needs in mind, typically jointly with the user, whether service customer, user, partner or supplier. In case of package applications, standard functionality and best practice processes will be adopted and customisation will be avoided.
2	Design for flexibility and reuse.	Enterprise Architecture must be flexible – responsive to changing needs and technologies, portable across services and partners and stable (not requiring constant change), and where possible, built on components that can be reused for multiple solutions.	It will be easier to replace a technology solution component if required in future, with minimal impact on the overall architecture and principles. An integration layer will manage information exchange between systems, allowing where possible separation of data and system components for reuse. External partners will be able to interact and exchange information more easily. Existing investment in tools and technology will be reused where possible and change will be driven using business cases.
3	Efficiency through alignment to the Belfast Agenda.	Solutions must optimise software and hardware licensing costs to maximise life-time return on investment and support of the other strategic investment areas. The design and any preferred products / solutions will have a clear roadmap that support the Belfast Agenda.	The total cost of ownership of technology solutions will reduce by adopting a consistent approach to systems acquisition, avoiding unnecessary independent directorate systems development and purchase.
4	Adopt standard, not tailored product functionality.	Buy 'off the shelf' solutions where possible to avoid building systems and services. Use standard product functionality and best practice processes, avoiding customisation except for regulatory/compliance requirements.	Time, cost and risk to deploy technology will reduce and it will cost less to implement and maintain the solution, e.g. Cloud-based solutions. Reuse of existing core digital components will be easier. Agile development methodology may be adopted where feasible.
5	Cloud first.	In line with wider industry trends, the Council should prioritise cloud solutions where the cloud solution meets required security controls and is without significant additional cost.	The use of cloud services can provide efficiencies through the life-time of the solution, through lower total cost of ownership, the ability to deliver in short timescales, or scalability at short notice. These extended benefits can often justify the use of a cloud service when it's total lifetime costs (including integration with other services) is broadly comparable with an on-premise solution.

Section 4

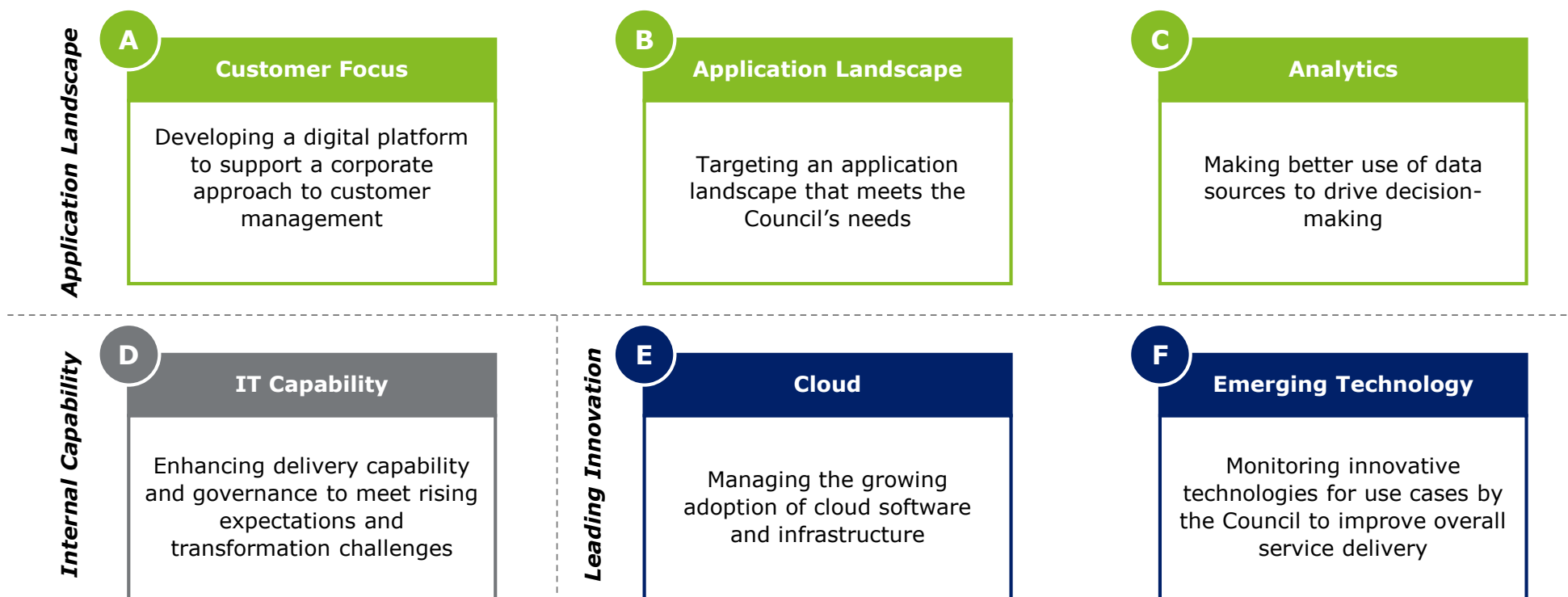
ICT Strategic Themes

Introduction

Identifying the strategic themes that underpin areas for the team as it aims to deliver the ICT vision

Using the themes that emerged from the current state assessment, together with a range of technology trends, six Strategic Themes emerged that form the basis of this ICT Strategy. These key focus areas – described in the diagram below – are those that will need to be addressed to deliver a step change in technology provision to the Council.

In the following sections, each Strategic Theme is described in detail, providing a description of a target state as well as defining recommendations for initiatives that would support the Digital Services team in successfully delivering that target state.



ICT Strategic Themes

Understanding why these strategic themes should be prioritised by Digital Services and the Council

Theme	What does this mean?	Why is this important for the Council?
A. Customer Focus	A commitment to serving the customer in a way that matches their expectation with their experience through the use of technology.	<ul style="list-style-type: none"> • Customer demand – Technology has increased the expectations of the customer and therefore business.
B. Application Landscape	A robust and simplified application landscape that serves as an enabling foundation for the organisation.	<ul style="list-style-type: none"> • Duplicate functionality - Over time the Council has deployed a large number of line of business solutions across the business to meet demand. • Complexity – The Council has an application landscape with limited integration and automation, which inhibits the ability to gain insight from data.
C. Analytics	Putting data at the centre of the organisation and embedding the use of analytics into the decision making process at a strategic level.	<ul style="list-style-type: none"> • Measuring strategic targets – Insight must be gained in order to measure performance against key metrics. • Data governance – How data is currently governed within the organisation means limited meaningful insight can be gained across the organisation. • Corporate approach – Data should be integrated and shared across the Council
D. IT Organisation	Balancing the demand for improved IT governance while creating a Digital Services team that builds on their strengths and adapts for the future.	<ul style="list-style-type: none"> • Impact of new technology on digital services – To adapt and flex the resource profile with the emergence of new technology will become increasingly important in embracing new capabilities such as cloud. • Organisational governance – Improving the decision making process and transparency around demand and prioritisation will enable Digital Services and the business to forecast and plan more accurately.
E. Cloud	Preparing for the future adoption of cloud services in a controlled and strategic way.	<ul style="list-style-type: none"> • External market forces - Increasingly businesses must embrace cloud as the market and its technology vendors dictate, with cloud deployments becoming ubiquitous with commercial offerings.
F. Emerging Technology	Leading the Council in its exploration and deployment of new technology in partnership with the business.	<ul style="list-style-type: none"> • Business demand – Appetite from within the business for technology enabled solutions will require Digital Services to deliver innovation within the Council. • Operational efficiency – By utilising certain emerging technologies the Council will be able to make efficiency gains in cost reduction and resource demand.

A. Customer Focus

Developing a digital platform to support a corporate approach to customer management

Introduction

Developing a digital platform to support a corporate approach to customer management

The Council is undergoing a period of significant change. The Belfast Agenda includes a commitment to “deliver services differently, in a more integrated way that is focused on the needs of people.”

To achieve this commitment, the Council has established the Customer Focus initiative to review the customer support model across the organisation. The Council delivers a diverse range of services to a broad internal and external customer base. It provides high levels of customer service, however the approach to customers can vary by department and business area and there is an absence of a corporate view and customer strategy.

Through the Customer Focus Discovery Exercise – a parallel activity to the development of this ICT Strategy – the Council is seeking to articulate the following:

- Requirements for a new website;
- Requirements for the technology platform that will support Customer Focus (CRM, Integration);
- Organisation impacts of the proposed change; and
- A detailed implementation plan of how to realise the vision.

The technology implications from the Customer Focus initiative are closely aligned with the wider recommendations in this ICT strategy, and are therefore cross-referenced in this ICT strategy.

This section of the ICT strategy summarises the key design principles and emerging opportunities – within the technology domain – that have been defined by the Customer Focus programme.

Additionally, the recommendations included in this report have been summarised from the recommendations developed by the Customer Focus programme aligned to the Technology theme. For further information, please refer to the Summary Review Pack for that programme.

Key areas of technology requirements

The Customer Focus Discovery Exercise is describing some high level requirements for technology, specifically in relation to:

- CRM;
- Citizen Portal;
- Workflow;
- Identity Management;
- Business Intelligence;
- Application and Multi-channel integration;
- Replacement of legacy applications;
- Web design;
- Online service delivery; and
- Mobile service delivery.

Customer Focus Design Principles

These principles will help guide Belfast City Council's move to a customer centric model of service delivery

The Customer Focus Discovery Exercise has agreed a number of design principles that are intended to guide the future corporate approach to customer contact.

The six design principles are listed below, and elaborated further in the diagram opposite:

1. Consistent, joined up, **corporate** approach, underpinned by standards.
2. Deliver greater insight and analysis on customer behaviour, driving **decisions** based upon **data**.
3. Improve the **efficiency** of processes to support the scale of growth required to meet the Belfast Agenda.
4. **Digital First not Digital Only** to enable inclusivity and channel choice (i.e. digital first where possible).
5. **Customer centricity** (first) to improve customer experience.
6. Provide access to the **right information** at the right time and from anywhere.

These design principles are consistent with the themes identified in this ICT Strategy and have specific implications for how technology should be used to support the customer ambitions, e.g.:

- use of a digital platform (including CRM, website, citizen portal) to provide multi-channel access to services; and
- increasing use of data and analytics tools to enable the business to make informed decisions.



Source: Belfast City Council – Customer Focus – Summary Review Pack

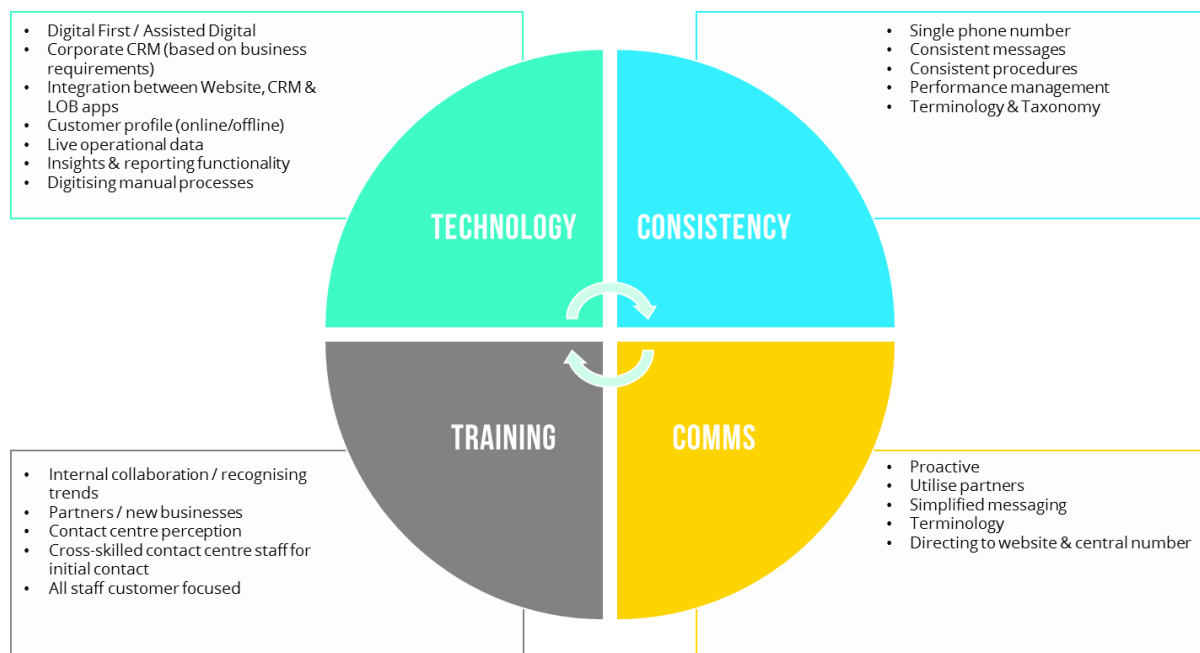
Opportunities

The Customer Focus initiative has identified a range of opportunities centred around four domains, including technology

As an organisational transformation initiative, the Customer Focus programme has identified a range of opportunities across four different domain themes.

The four themes (see the diagram below) are Technology, Consistency, Training and Communications. It is expected that implementation of initiatives across all of these themes will allow the Council to take a holistic approach to customer focus, and deliver significant improvements to customer service.

The opportunities identified in the “Technology” theme (see opposite) are particularly relevant to this ICT Strategy and are closely aligned with the concepts and IT initiatives identified in the other strategic themes.



Source: Belfast City Council – Customer Focus – Summary Review Pack

Technology workstream: Potential Benefits

The emerging opportunities in the Technology workstream have the potential to enable a wide range of benefits for the customer and the Council, e.g.:

- **Digital First / Assisted Digital:** New customer channels will reduce contact centre traffic and improve user experience.
- **Corporate CRM (based on business requirements):** A single unified view of the customer.
- **Integration between Website, CRM & LOB apps:** Enables end-to-end process completion by sharing data across the landscape.
- **Customer profile (online/offline):** Achieve higher levels of insight on the customer, improving customer experience.
- **Live operational data:** Innovate operational services to improve performance.
- **Insights & reporting functionality:** Improved data quality will enable data driven decision making.
- **Digitising manual processes:** Increased staff efficiency through automation and improved data availability.

A. Recommendations

Developing a digital platform to support a corporate approach to customer management

#	Recommendations	Priority	Timeframe	Rationale
A.1	Customer Focus Programme			
A.1.1	Conduct detailed discovery (per business area)	High	Apr 2019 (first business area)	Having documented initial findings in the Customer Focus report, the next phase requires a more in-depth technical and functional analysis across the Council. This will provide the required detail for specifications and further project initiation activities as required. At this stage it will be important that Digital Services are working closely with the team in developing the technical specification and deepening their understanding of the customer.
A.1.2	Execute key technology procurements	High	Sep 2019	Determining the right solutions to meet business needs should be a priority for the team with a new CRM, website and integration platform to be purchased. It is important that these new solutions are complementary to the outcome of the cloud vision and principles recommendation as outlined in the cloud section of this report. This will enable a more strategic approach to procurement to be made.
A.1.3	Implement technology platforms	High	Dec 2020	A challenging two year roadmap has been recommended and this will require continual input from dedicated resources within Digital Services.

* These initiatives have been summarised from the recommendations developed by the Customer Focus programme aligned to the Technology theme. For further information, please refer to the Summary Review Pack for that programme.

B. Application Landscape

Targeting an application landscape that meets the Council's needs

Introduction

Evolving the application landscape to deliver efficient processes across the Council

The Belfast Agenda has identified a range of ambitious plans for the city. To deliver on those ambitions, as well as continuing to meet the many and varied expectations of citizens, the Council needs to get the best from its resources.

From a technology perspective, an application landscape that enables efficient and effective business processes, encourages cross-functional working and shared data is central to maximising resources. However, the current state assessment has highlighted a range of challenges with the application landscape, including:

- multiple instances of similar applications (e.g. CRM);
- limited integration across the broader application landscape;
- a range of enterprise and bespoke applications that require upgrade or replacement; and
- gaps in the application portfolio (e.g. EDRMS, Project Management).

Evolving the application landscape can support the Council to realise a number of benefits, including:

- **Cost reductions** – with a rationalised application estate, there is potential for direct savings (e.g. licensing, hosting, support) and indirect savings (e.g. process efficiencies, increased automation).
- **Improved data quality** – data will no longer exist in isolated silos but become readily available for use by the organisation, greatly improving the Council's ability to make evidence-based decisions.
- **Operational efficiency** – with fewer applications to manage, Digital Services will be able to allocate more resources to new initiatives and work collaboratively with the business to further improve and innovate the services the Council provide.

Evolving the application landscape

As previously discussed within the "Customer Focus" theme, the implementation of a CRM solution can provide the Council with core customer management capabilities. In addition, some solutions may provide support for other council services and processes, and therefore it could also provide a good foundation to evolve the application landscape.

However, there are a number of additional areas – described in this section – that can help evolve the application landscape to support improved delivery of council services, including:

- **Integration:** integrating current and new applications will be key to enable maximum return on investments made and will improve data quality, levels of automation and insight generation;
- **Application Rationalisation:** given the diverse range of services that the Council provides, there is a significant dependency on specific line-of-business solutions. However, in some cases there is duplication of functionality, processes and data, adding unnecessary cost to the Council. Rationalising the application landscape will reduce cost, complexity and management burden on the Council;
- **Enterprise Applications:** the Council is about to undertake a number of corporately significant programmes of work to update critical support applications, including Asset Management, Finance and EDRMS; and
- **Collaboration and productivity:** the continued rollout of collaboration and office productivity tools can support the Council in improving the efficiency of its processes.

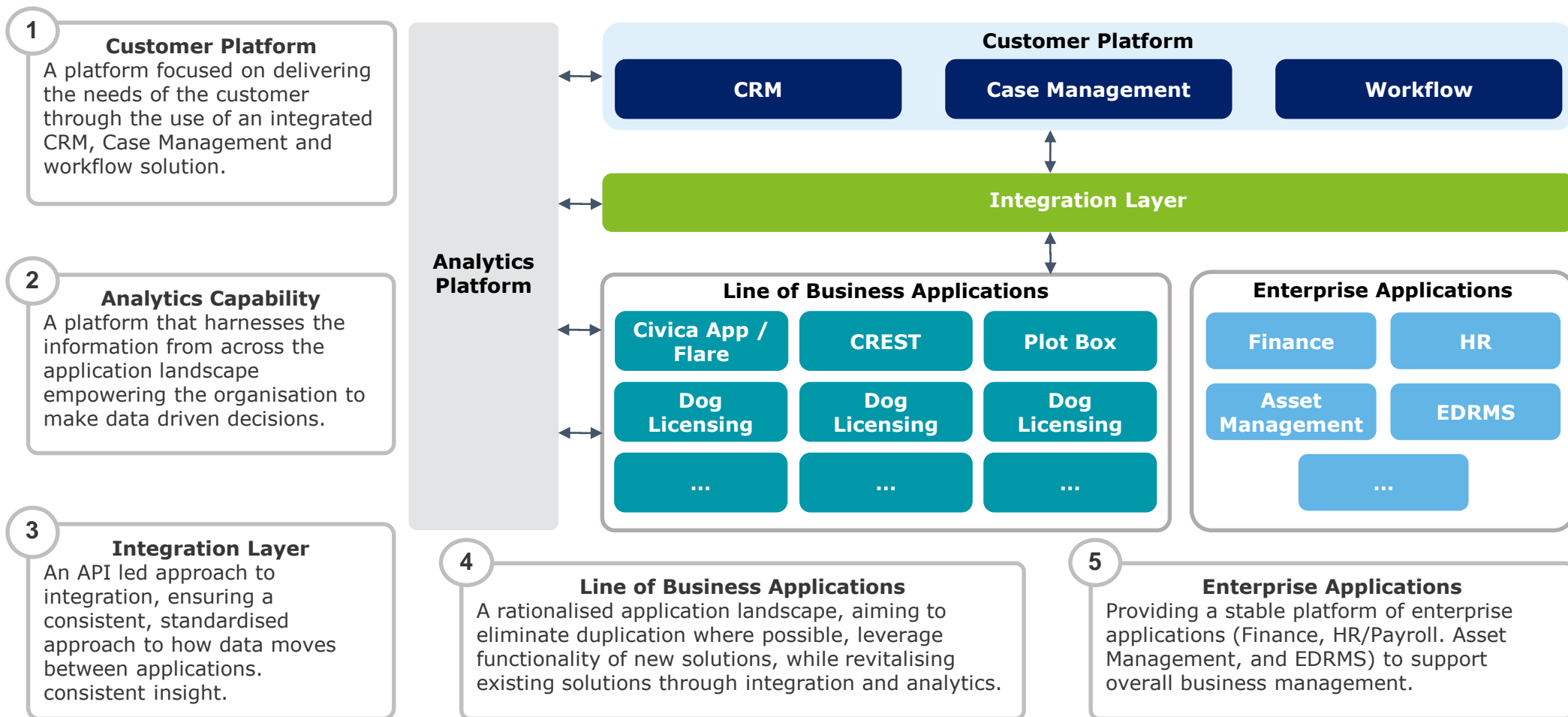
This section also provides an indicative high-level solution architecture to illustrate the potential application landscape.

High Level Solution Architecture

An indicative view of an application landscape to provide the

Evolving the application landscape can support the Council to reduce costs alongside improving data quality and operational efficiency. The proposed customer platform can be a key component and enabler of a streamlined application landscape.

The following diagram provides a high level overview of a potential solution architecture for the Council, with a summary of its key components.



Integration

Reducing the time to innovate services and increasing IT assets access through APIs is a priority to enable improved customer experiences

Organisations are making a strategic choice to commit to evolve their expectations of technology investments to include the creation of reusable assets and are committing to build a lasting culture of reuse to inform future project planning.

Preparing, both strategically and culturally, to create and consume Application Programming Interfaces (APIs) is key to achieving business agility, unlocking new value in existing assets, and accelerating the process of delivering new ideas to customers and stakeholders.

APIs can deliver a variety of operational and strategic benefits. For example, revitalising a legacy system with modern APIs encapsulates intellectual property and data contained within that system, making this information reusable by other developers who might not know how to use it directly (and probably would not want to). This makes it possible to extract more value from IT assets, while at the same time using valuable existing data to drive new innovations. Finally, incorporating APIs into new applications allows for easier consumption and reuse across new web, mobile, and Internet of Things (IoT) experiences, not to mention the option for exposing those APIs externally to enable new business models and partner ecosystems.

By implementing an API led approach to integration Digital Services will experience the following benefits:

- Improve ability to innovate quickly: APIs are reusable components which can readily combined to produce new or improved services.
- Reduce costs: Build smaller components to promote shorter delivery timescales at a reduced cost.
- Improve customer experience: Exposing APIs can promote seamless experience to the customers that demand services across mobile and conventional channels by integrating previously isolated solutions.
- Realising full potential of IT: APIs should underpin future innovation initiatives such as – Software as a Service (SaaS), Cloud, Cognitive/Artificial Intelligence (AI) and IoT.

A platform approach to integration

To fully realise the potential benefits of an API-led approach to enterprise integration, the Council should invest in an integration platform that is designed to build, test, deploy and manage integrations across a complex organisation such as Belfast City Council.

The benefits of deploying an integration platform over bespoke development integrations include the following:

- **Development speed** – Prebuilt components, drag and drop development interface and unit testing allows integrations to be deployed faster than traditional methods of development.
- **API Management** – Built in API management allows for reporting, access control and performance management.
- **Performance** – Vendors have invested significant resource into providing industry leading coding bases built on best practice. This leads to streamlined performance from all integrations.
- **Skillset** – Integration platforms lend themselves to a configuration based approach rather than custom coding. Users with a development background can often upskill and become proficient quickly in developing integrations compared to the experience required to build custom integrations.

Rationalisation

A consolidated application landscape that will continue to serve the business but with greater efficiency and reduced complexity

An overly complex set of business applications drives IT costs and IT skills pressures and affects the ability of IT organisations to deliver new functionality that the business requests.

With over 100 applications deployed across the Council, there are multiple challenges this poses to Digital Services. Whilst each of the directorates provides different services their technology requirements are similar, e.g. there are common requirements to manage customer interactions, manage cases or service requests, use workflow to progress work items, and use data for operational reporting.

The following diagram provides an overview of the main challenges that this presents to Digital Services and the Council as a whole.



Cost

Duplication of functionality exiting across the Council has a financial impact on the amount of capital spent on licenses. By consolidating where possible, the Council can realise financial benefit



Complexity

Manual data entry, minimal process automation and a lack of integration between point solutions mean that the application landscape is complex, prone to user error and inefficient.

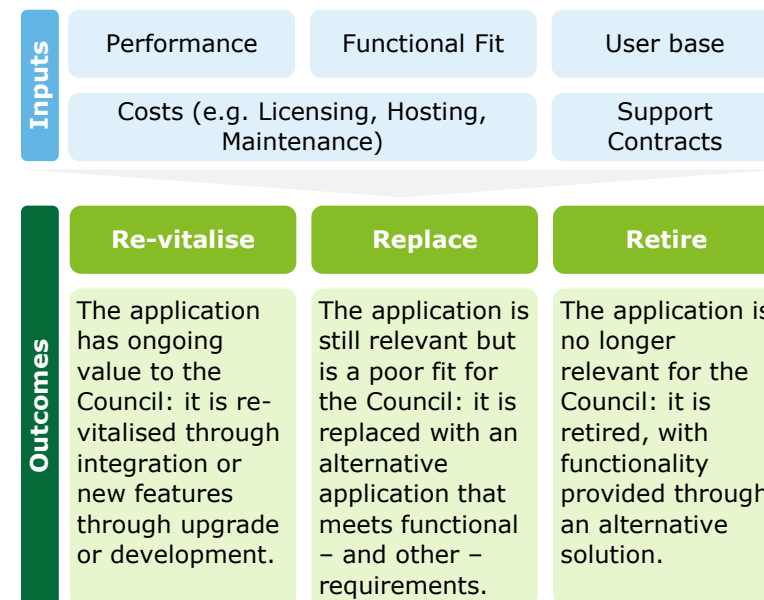


Management

Maintenance and management of the applications places demand on IT resource time that could be utilised elsewhere in a simplified version of the application landscape.

With the implementation of a CRM solution to support customer interactions, the Council has an immediate opportunity to rationalise its applications (e.g. other CRM applications). It is important, however, that the Council assesses each application on its own merits (e.g. does it enable a specialist business function that is not easily replicated?) to ensure that it retains the technology required to support the business. The diagram opposite provides an overview of inputs and potential outcomes for assessing how applications can be rationalised.

Application Rationalisation Assessment



Approach for the Council

With the implementation of the CRM as part of the Customer Focus initiative, a phased approach to rationalisation for the Council is recommended:

- **Phase 1:** Review and replace applications that will be incorporated into the new Customer platform, e.g. current CRMs / case management solutions;
- **Phase 2:** On a case-by-case basis, determined by assessment approach above, review remaining applications to decide whether to retire, refresh or re-vitalise the application.

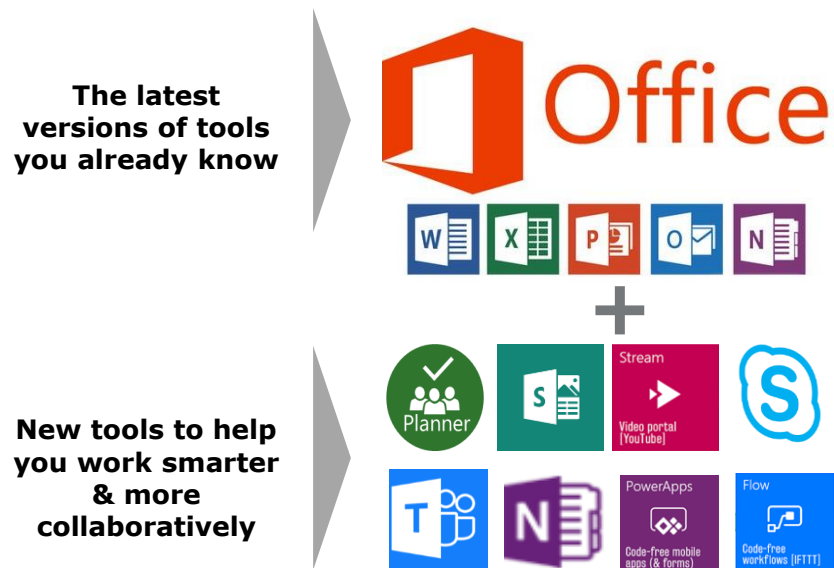
Collaboration and productivity

Fully realising the potential of O365 as an enabling technology that opens up new collaborative ways of working

With an existing enterprise agreement in place, the Council has an opportunity to extend deployment of the full suite of Office 365 components that it has available.

In doing so the Council would maximise its return from the significant investment already made and negate the need to explore other tools that enable collaborative ways of working with significant benefit to the organisation.

Digital Services has a crucial role to play to define the use cases, select and implement the appropriate technologies, and – importantly – to provide the wider business with the skills and knowledge to integrate fully into day-to-day processes and maximise benefits.



Benefits

There is a wide range of benefits that the Council could realise through the implementation of these collaboration and productivity tools, such as:

The Council will become:

- **Collaborative** in their interactions with other social and public services;
- **Consistent** in their internal operations and data governance across the Council;
- Able to **store, access and process data**, streamlining the amount of effort to maintain compliance; and
- **Responsive** to operational needs and externally-driven requirements, such as digital capabilities, data governance and changes to processes such as those brought about by GDPR.

In addition, the staff will become:

- **Agile** in their ways of working through virtual collaboration and single sign-on allowing access to their Cloud-stored documents from any devices, anywhere;
- **Connected** to their colleagues within the Council; and
- **Innovative** in their use of technology to be able to adapt to the demands in their jobs driven by data and analytics.

B. Recommendations (1)

Providing a foundation that enables the business to discover new ways to deliver services for the customer

#	Recommendations	Priority	Timeframe	Rationale
B.1	Implement integration platform			
B.1.1	Develop business case for integration platform*	High	Apr 2019	An integration platform will provide the Council with the ability to integrate primary applications to deliver efficiencies in end-to-end business processes and improve data quality and customer experience. Digital Services should identify use cases, confirm the scope and use a business case to articulate the expected cost and benefits of implementing an integration platform.
B.1.2	Procure integration platform*	High	Sep 2019	The integration platform will require a significant investment from the Council in the both the technology itself and resources required to implement it, and will therefore be subject to a formal procurement process. Conducting a market sounding exercise will build awareness of platform options (e.g. MuleSoft Anypoint, Dell Boomi, etc.) within the Council and inform the procurement exercise.
B.1.3	Phased implementation of integration platform*	High	Apr 2021 (ongoing)	Having previously identified use cases for the integration platform, it should be deployed in line with other transformation initiatives, beginning with the implementation of the CRM solution as part of the Customer Focus initiative.
B.2	Application Rationalisation			
B.2.1	Rationalise CRM applications*	High	Apr 2021	Given that a CRM application is a primary recommendation from the Customer Focus initiative, the multiple existing instances of CRM used within the Council will take priority for rationalisation. However, the rationalisation of those CRM applications must be aligned with the phased rollout of the corporate CRM platform by business area.
B.2.2	Develop Roadmap for rationalisation	Medium	Apr 2020	Digital Services, in conjunction with the business, will need to analyse remaining applications to define the preferred rationalisation approach, i.e. Re-vitalise, Replace, or Retire. As this is completed, a roadmap for the rationalisation of applications can be developed.
B2.3	Execute rationalisation roadmap	Low	Dec 2021 (ongoing)	Assures that pre-determined benefits are realised, with the end result a consolidated application landscape.

* These initiatives are closely aligned with the Customer Focus programme and should be scoped, planned and executed in close conjunction with that programme.

B. Recommendations (2)

Providing a foundation that enables the business to discover new ways to deliver services for the customer

#	Recommendations	Priority	Timeframe	Rationale
B.3	Enterprise Applications			
B.3.1	Align enterprise application implementations	High	Apr 2019	The ICT Programme of Work 2018-19 lists several projects in relation to enterprise applications, specifically EDRMS, HR and Payroll, Finance, and Asset Management. With the addition of Customer Relationship Management, Integration and Analytics platforms to this portfolio, Digital Services will need to work with the Council to agree priorities for delivering the enterprise application deployments.
B.3.2	Implement enterprise application replacements	Medium	Dec 2021 (ongoing)	Execute on the current plan for the relevant system upgrades that are scheduled to take place over the course of this strategy.
B.4	Collaboration and Productivity			
B.4.1	Establish business change function	Low	Dec 2019	By establishing a change team to articulate the benefits of Microsoft Office 365 to the business, Digital Services will have a higher success rate for changing ways of working within the organisation and maximising value extracted from their licensing agreement.
B.4.2	Deploy selected components	Low	Dec 2020	Determine implementation schedule for new Office 365 components to be delivered in a prioritised manner based on potential business benefit.
B.4.3	Complete training activity	Low	Apr 2021	To enhance user adoption, full training and support should be provided to business users.

C. Analytics

Making better use of data sources
to drive decision-making

Introduction

Delivering a step change in analytics capability to enable the Council to make better use of data to drive decision-making

The Belfast Agenda sets an ambitious vision focused on achieving five different outcomes by 2035. Each outcome has been linked to a range of different population indicators.

The challenge for the Council – and its delivery partners – is to identify, design and implement initiatives that have a positive impact on those indicators.

Data is crucial to this process, and must support the Council’s need to answer some key questions throughout the lifecycle of the initiative, including:

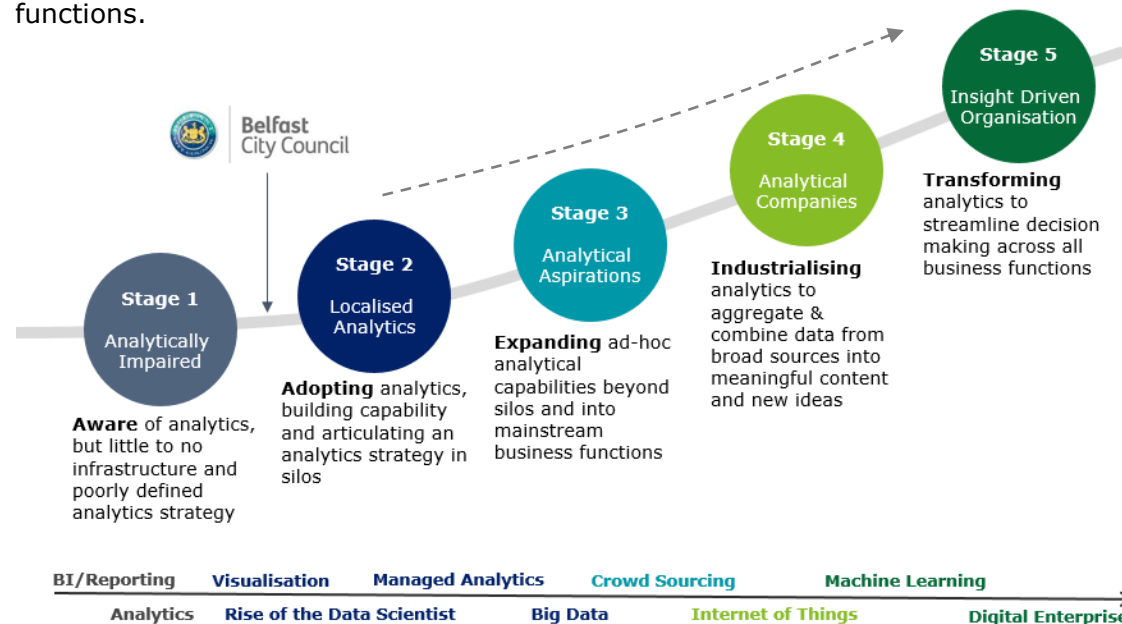
- Do we understand the current situation, i.e. is there a baseline to target improvement from?
- Do we have evidence to support selection of initiatives as the optimum investment of resources to improve outcomes?
- How will we measure outcomes during the process?

Recognising that the Council does not extract maximum value from its data, this section of the ICT Strategy describes the key areas that the Council needs to address to deliver the required step change in analytics capability (described opposite), including:

- Data Strategy;
- Data Governance;
- Operating Model; and
- People.

Analytics maturity within the Council

Using stakeholder perspectives, the Council has been ranked at the lower end of the analytics maturity scale, reflecting the fact that the Council needs to transform its data capabilities to use analytics to streamline decision-making across all business functions.



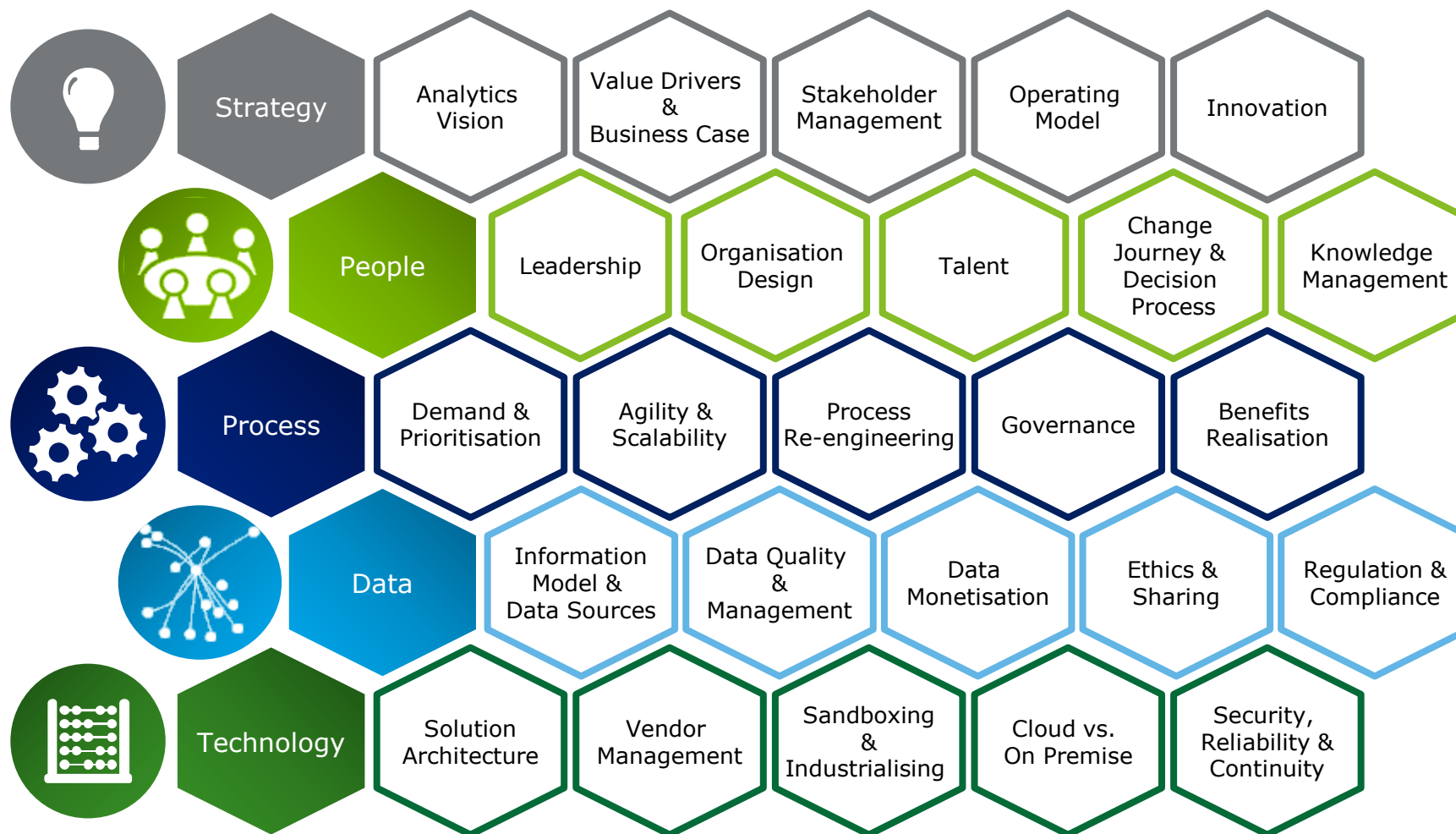
Improved analytics maturity enables organisations to ask better questions to gain better insights from data, as illustrated in the following table.

Outlook	Hindsight	Insight	Foresight
Current	What has happened?	What is currently happening?	What is going to happen?
Future	What is currently happening?	What is the next best action?	What does simulation tell us? What are the options? What are the pros and cons?

Information Driven Organisations (IDO)

Transformed data capabilities to use analytics to streamline decision-making across all business functions

Becoming an Information Driven Organisation relies on the fundamental building blocks of Strategy, People, Process, Data and Technology. For each of those building blocks, the various concepts and design questions that the Council must consider as it embarks upon a journey towards becoming an Information Driven Organisation are illustrated in the following diagram.



Data Strategy

At the outset, the Council will need to develop a Data Strategy to define how it can become an information driven organisation

The Council has a clear need to extract more value from the data it holds and to improve its ability to make evidence-based decisions.

For the Council to reach its desired state of analytics maturity, it must take a strategic approach to data that moves beyond individual verticals and enables the sharing of data across the organisation. It is therefore important that the Council develops a Data Strategy that enables this vision.

The table below highlights some of the components of a typical data strategy and the corresponding benefits that it can enable for the Council, while the diagram opposite highlights the approach to developing a data strategy.

Component	Benefit to Belfast City Council
Vision	Provides alignment between the business strategy and how the Council should use data to enable positive outcomes
Value Drivers and Business Case	Significant investment will be required to support the Council's demand for data, creating value drivers and a business case will ensure responsible investment
Stakeholder Management	Generate buy in from across the Council and moving away from data silos and sharing of data across the organisation
Operating Model	Provides the Council with clarity around Analytics roles and responsibilities, including which part of the business they are located, to strengthen adherence to data governance principles
Innovation	Exploring the 'Art of the Possible' when data is available to the right people at the right time

Data Strategy Development Approach

The seven-stage process below outlines how the Council should approach the development of a data strategy to define a detailed implementation roadmap.

Phase 1: Assessment



1. Initial Vision

Set initial vision of what we want to achieve using data analytics and the focus areas for the Current State Analysis



2. Current State Analysis

Assessing current analytic capabilities against Strategy, People, Process, Data and Technology



3. Proof of Concept

Rapid development of solutions to identify hidden value in data and new ways to visualise data to gain new insights

Phase 2: Roadmap



4. Vision

Create the long term strategy and vision for data and analytics. Define any step changes in that journey

5. Business Requirements and Prioritisation

Define detailed analytics requirements to help shape the roadmap



6. Define Roadmap

Define the programme of work for the delivery of analytics against the vision



7. Business Case

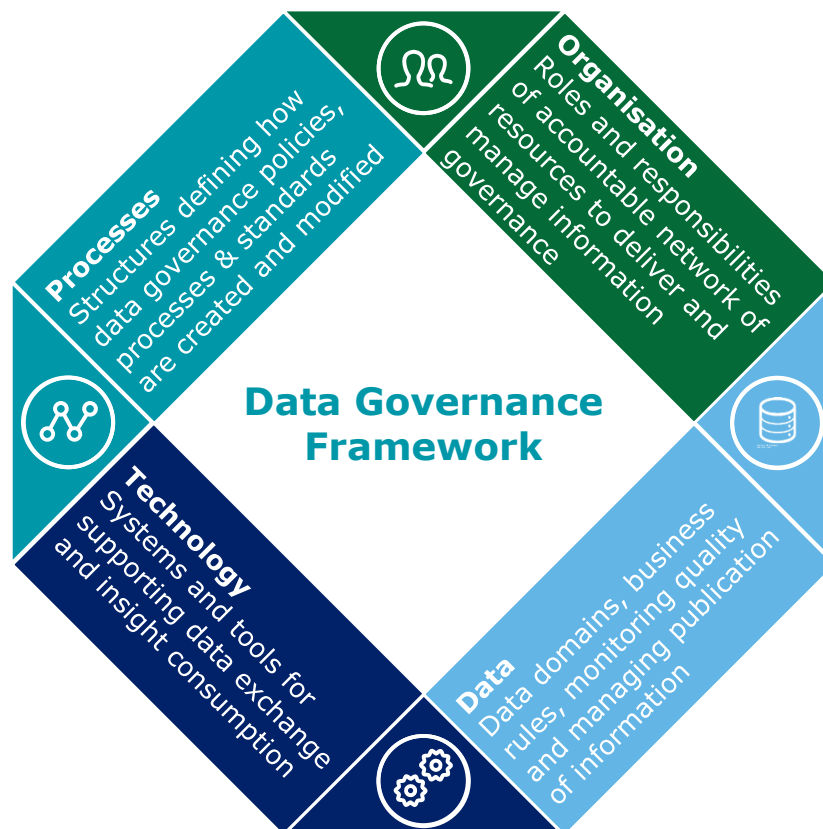
Develop the business case to justify the investment to deliver the roadmap

Data governance

The Council will require a strong data governance capability to enable the proactive management of data and allow it to extract valuable insights

The increasing focus and importance of data and analytics means that data governance is a key component of driving effective data management throughout organisations.

The Council will need to implement a framework that addresses key data governance components (see diagram below).



Information governance principles

Developing the data governance framework will allow the Council to establish design principles that will support the Council's decision-making processes when designing and embedding data capabilities:

- **Executive Sponsorship:** The Data Governance framework identifies a Data Governance sponsor for the Council to provide a clear hierarchy of organisational responsibility and accountability for data management across the Council and within data domains.
- **Accountability:** Centralising data management creates the opportunity for a consistent approach to monitor and improve data quality. A Data Governance Framework will define the standards and responsibilities of data owners and will outline the data they are responsible for. Data is a council-wide responsibility.
- **Accessibility:** Without effective information governance, data remains trapped in individual business areas, which prevents the Council from leveraging data as a true information asset. A Data Governance Framework would facilitate easy and timely access to data in a secure environment. This will enable data interrogation and report creation to support operational decision making.
- **Accuracy:** Holding information in isolated data stores proliferates inconsistency and data inaccuracy, preventing a unified view of the Council's data and reduces the ability to respond quickly to new opportunities. With no centralised governance there are no consistent rules for managing the accuracy of information.
- **Flexibility:** Information Governance must be designed to ensure that sharing and reusing information creates business value, and contributes to the delivery of the Belfast Agenda. Governance must be flexible to adjust or adapt over time as the Council's immediate priorities change.

Operating model

A centre of excellence approach to the operating model will provide specific expertise to work with the business to deliver valuable insights

The centre of excellence approach provides analysts from a central pool to cater to varying business needs as and when necessary.

The Head of Insight ensures the business has enough support from the central function. Analysts within the central function have a holistic understanding of the business, although some analysts have specialist skills (e.g. Geographic Information Systems).

Given that Analytics resources are currently dispersed across the Council, this centralised model will provide the opportunity to strengthen data governance and improve data quality.

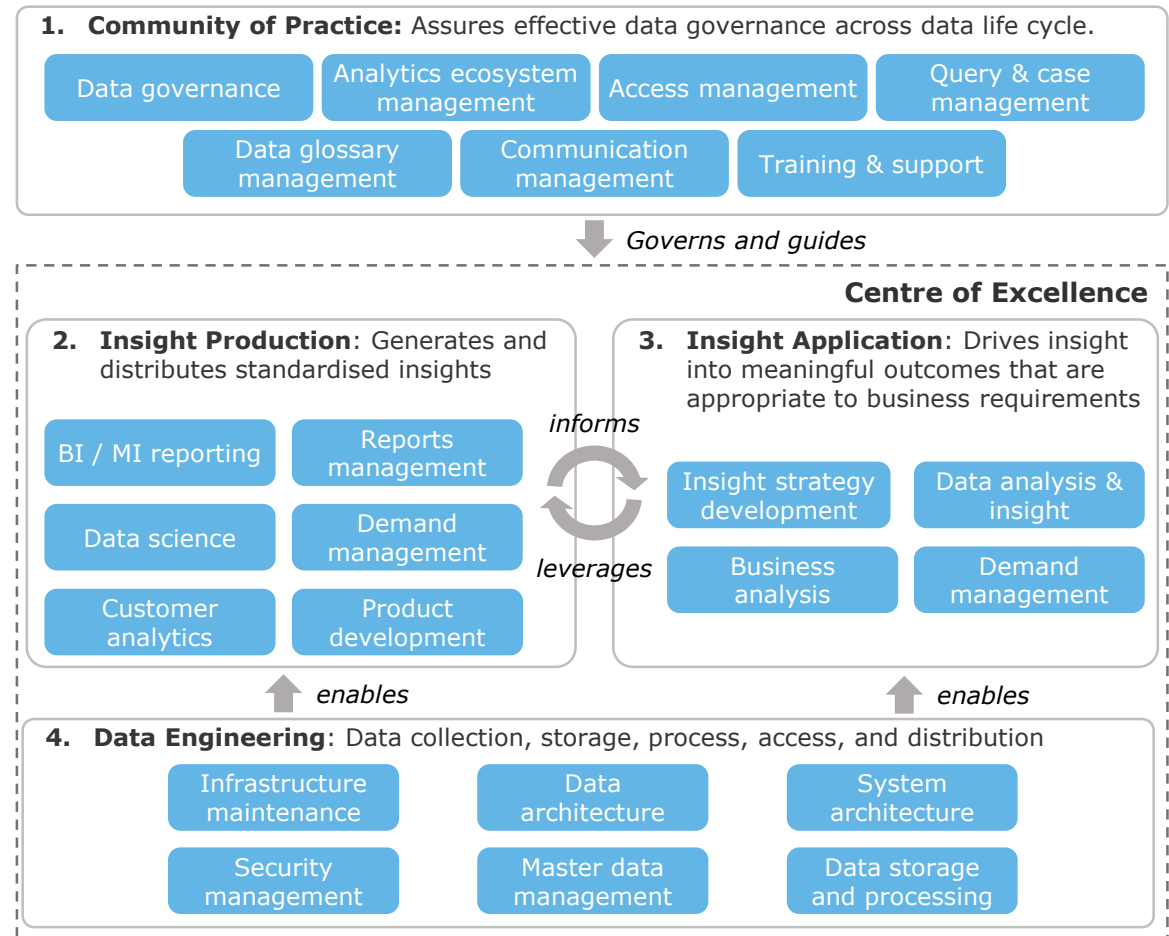
Developing the Data Strategy will allow the Council to determine the best-fit location for the Analytics Centre of Excellence to maximise the value that it can extract from various data sources (e.g. internal data sets on organisation, citizens and partners; or external data sets on the City, such socio-economic data or Belfast Wifi usage).

The key strengths of this approach include:

- Knowledge is centrally owned and maintained reducing the risk of resourcing bottle-necks for the business areas;
- Data and process governance can be led from the central function with support from the business; and
- One central source of insight production encourages a standardised approach.

Analytics Target Operating Model

The following diagram provides an overview of the specific roles and responsibilities of the constituent elements of the analytics centre of excellent operating model.



People

Developing people with the right mix of technical knowledge and business skills is a central component to delivering valuable insight

People are at the centre of the Council’s ability to meet its information driven organisation ambition.

Being able to understand the right business question to ask of the data through to interrogation and modelling to gain the insight to answer them, and then present the insight in a compelling way are important skills for an information driven organisation. These skills may be all present in a very highly skilled individual or be complementary skills with a team.

Ultimately, the Analytics Centre of Excellence will need the following blend of skills to enable success:

- **Technical and analytical skills** include the ability to:
 - structure data to enable analysis of information; and
 - visualise data using analytical and logical reasoning for the discovery of insight (data analysis).
- **Business and communication skills** include the ability to:
 - understand how to measure the business’s key performance indicators; and
 - articulate insight to explain current and forecasted trends, their impact and associated opportunities.

Additional roles

To deliver a step change in analytics capability, the Council may need to introduce additional roles, some of which are outlined in the table opposite.

Role	Description
Head of Insight	<ul style="list-style-type: none"> • Oversees provision of analytics-driven insights to support effective business wide decision-making; • Manages Insight Centre of Excellence; • Accountable for delivery of the overall Insight Service; and • Works closely with senior business leaders to define and deliver the future vision and strategy for Insight.
Insight Developer	<ul style="list-style-type: none"> • Understands business requirements, and meets them through the design and delivery, testing and release of production insight solutions (dashboards and reports); • Optimises existing insight solutions; and • Analyses and comments on scheduled dashboards and reports; • Identifies and highlights potential business challenges and/or opportunities, conducting further analysis where appropriate.
Insight Innovator	<ul style="list-style-type: none"> • Provides insight consultancy to leaders across the business; and • Understands and analyses business challenges, using data, analytical techniques and insight tools to develop hypotheses and work with business leaders to answer key questions.
Insight Data Quality Manager	<ul style="list-style-type: none"> • Manages the data governance framework; • Performs data quality assessments on core data sources; • Develops data remediation strategies for data quality issues; • Manages the Insight security model; and • Manages the Council’s data glossary.
Insight Training & Support Manager	<ul style="list-style-type: none"> • Manages the Insight training portfolio, liaising with training providers to deliver training; • Identifies, enhances and develops additional training solutions to meet changing business needs. • Advises the Council’s Analyst Community and Consumers across on the use of data, analytical techniques and applications.

C. Recommendations

Enabling data to become a focal point for performance management and insight guided decision making

#	Recommendations	Priority	Timeframe	Rationale
C.1	Establishing a Data Vision			
C.1.1	Develop data strategy	High	Jul 2019	The Council needs a coherent approach to data to enable it to meet its clear ambition to extract more value from the data it holds and to improve its ability to make evidence-based decisions. By developing and agreeing a clear vision and narrative for data and analytics, the Council will understand the people, operating model, process, data and technology components required to maximise value from data. The data strategy should resolve the current dispersed nature of Analytics capability and provide a clear roadmap to delivering tangible data outcomes, e.g. measurement of Belfast Agenda Key Performance Indicators.
C.2	Delivering Insight			
C.2.1	Develop KPIs and performance metrics	Medium	Oct 2019	An integrated set of KPIs and metrics for managing performance should be understood at all levels of the organisation. Any measures developed should promote alignment to the Belfast Agenda and the corporate plan that underpins it.
C.2.2	Build data layer	Medium	Apr 2020	It is essential that the Council has a suitable data layer to support the production of integrated reports and dashboards. This will enable the expansion of data to include a facets of the organisation to support the production of advanced data insight by the central analytics capability once established.
C.2.3	Develop reports and dashboards	Medium	Apr 2021	The Council will need to develop a suite of dashboards and reports that drive effective performance across the business. This should allow a joined-up view of performance aligned to the Belfast Agenda to monitor the right behaviours, while also allowing reporting of wider metrics, joining together disparate data sources.
C.3	Developing Competence			
C.3.1	Implement central analytics capability	Medium	Dec 2019	A central analytics capability provides a central source of insight production and encourages a standardised approach. The detailed design stage will elaborate on the principles identified in the Data Strategy, followed by implementation.
C.3.2	Develop capability across the Council	Medium	Dec 2020	Embedding functionality within the business is important for the development of self service capability to generate reports, dashboards and data analysis functions across the organisation, empowering sustainable, long term decision making.

D. IT Organisation

Enhancing delivery capability and governance to meet rising expectations and transformation challenges

Introduction

Enhancing delivery capability and governance to meet rising expectations and transformation challenges

Digital Services has a strong track record of delivering on large system implementations and the supporting infrastructure.

However, the world of digital technology is changing and IT finds itself front-and-centre in enabling innovative digital solutions that use data seamlessly.

It will be important that Digital Services build upon its strong foundations as it seeks to support the business with the delivery of those innovative digital solutions that improve the service that the Council offers to citizens to deliver a better customer experience.

As a result, the Digital Services team will need to identify how to meet the business's demand for technology solutions alongside continued delivery of important, enterprise-wide technology solutions. To achieve this, the team will need to make improvements in a number of areas, including:

- **Business alignment:** ensuring that technology solutions are aligned to business needs and priorities;
- **Governance:** providing transparent governance will ensure that Digital Services is focused on the right initiatives and the right time;
- **Project delivery:** ensuring good project management disciplines are applied from ideas to completion; and
- **Resourcing:** securing the right level of resources – both internal and external – to deliver the increasing portfolio of technology initiatives.

Evolving the IT operating model

While Digital Services has a well-established operating model that meets the current needs of the Council, it is clear that those business needs are changing, technologies are changing, and Digital Services will need to evolve in future to meet these changing expectations.

Given the focus on user-centred design – particularly in relation to the Customer Focus initiative – Digital Services will need to review the skills and capabilities of its staff. It will need to renew and improve the capabilities required to align with evolving business demands.

In doing so, Digital Services must address two different business needs:

1. the need to provide reliable and stable services that address the daily business functioning of the Council; and
2. the need for added flexibility to deliver more innovative services that drive new and challenging outcomes.

To meet this challenge, Digital Services will need to embrace separate styles of work: one that is focused on supporting the delivery of stable corporate and line of business services, and another that is focused on exploration and the delivery faster outcomes in areas where there is higher uncertainty.

Both styles must be used to manage ongoing organisational change, to create value and to support the delivery of a more open, collaborative style of work, which is aligned to the Council's evolving priorities. With many organisations seeking to develop and fill new roles critical to building digital capabilities over the next three years, Digital Services can expect growing challenges in recruiting and retaining staff with highly sought after skills.

IT Governance

Effective IT Governance ensures that IT initiatives are aligned to business priorities, analysed rigorously, and executed effectively

IT Governance describes the end-to-end processes and controls to run and manage the Digital Services function according to the Council's strategic direction.

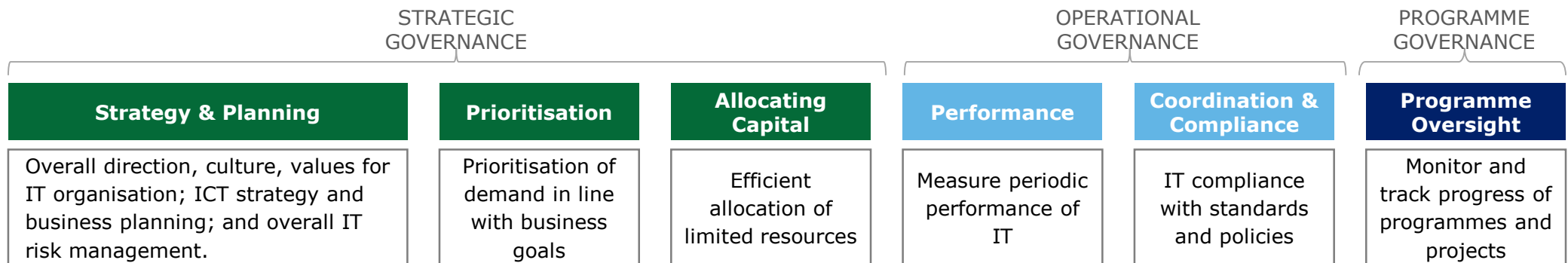
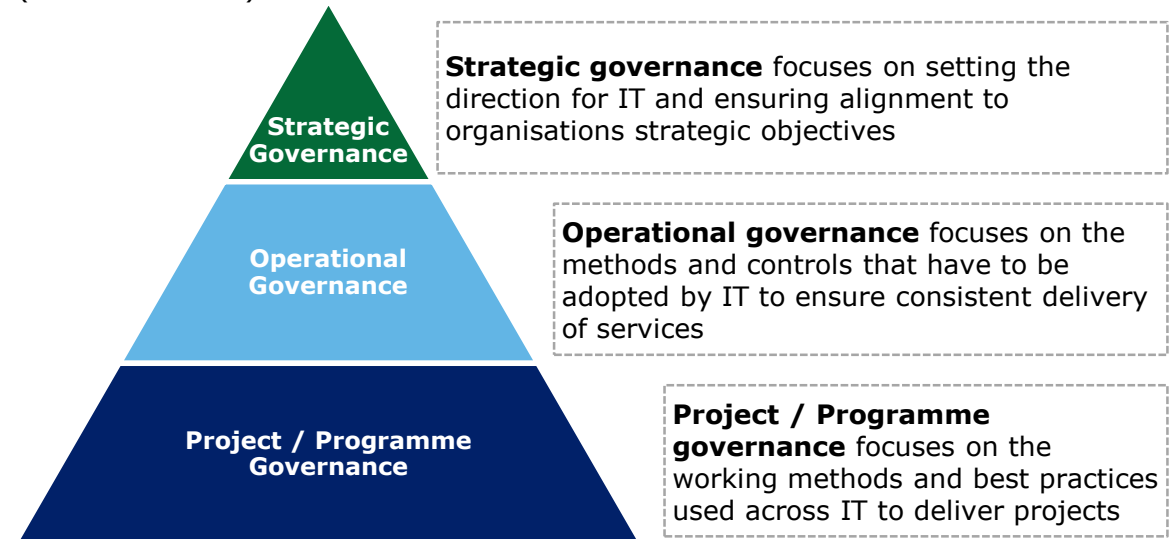
Mature governance processes promote effective, efficient, and acceptable use of IT through:

- **Stakeholder Assurance** – providing confidence that appropriate standards are followed;
- **Informing and guiding** – supporting Board members and Directors in IT decision making; and
- **Evaluate and adapt** – providing basis for objective evaluation of IT delivery recognising where change may be required to improve performance.

Digital Services will need to support the development of a governance mechanism, providing a transparent view to the business that will aid in directorates ability to forward plan and determine technology priorities.

Governance levels

There are typically three key dimensions to any governance framework aligned to the fundamental governance levels: *Strategic, Operational, and Programme / Project* (described below).

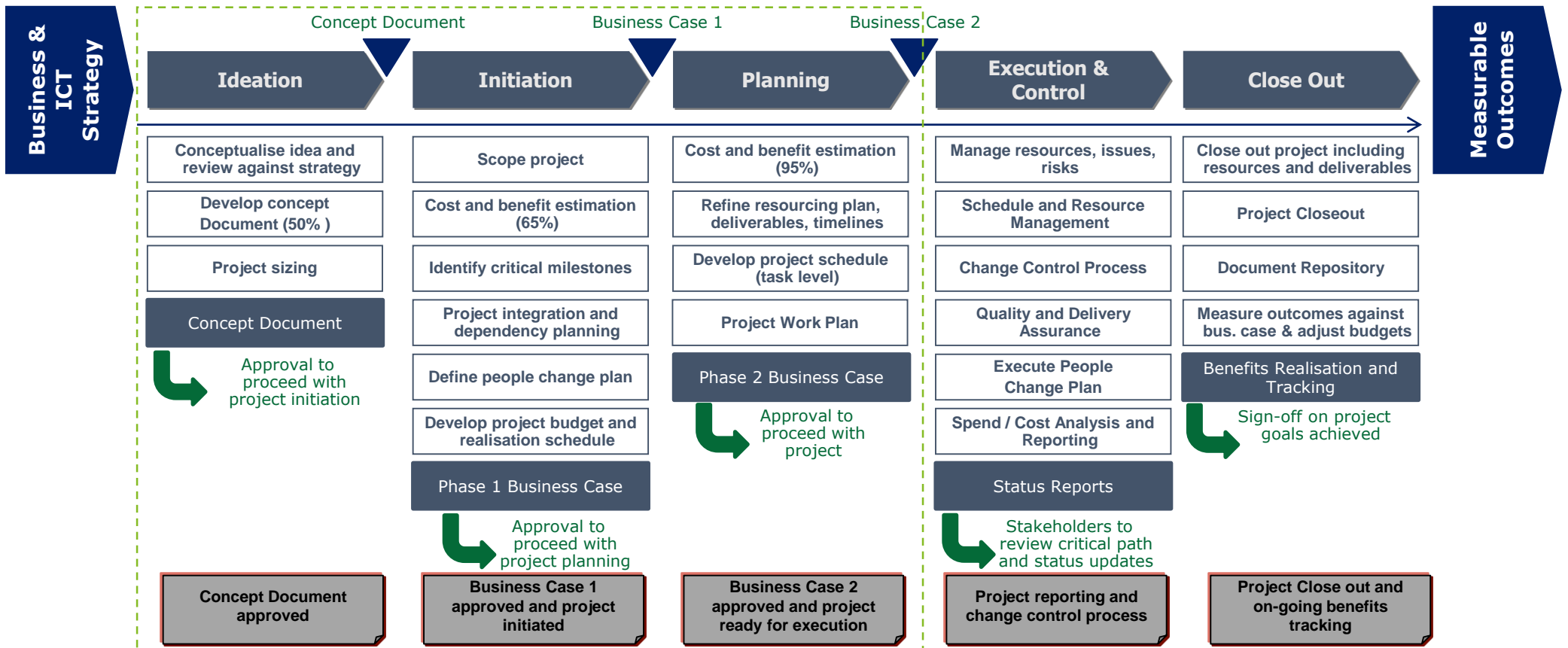


Project lifecycle

Employing strong project management disciplines will enable project objectives, budget and benefits to be appropriately understood

There is a strong demand for technology change projects across the Council, from implementing enterprise applications to delivering line of business solutions and innovative solutions for the Council.

Digital Services must employ strong project management disciplines, particularly in the early phases, using standard processes to progress initiatives through a defined approach. This will enable Digital Services to apply rigour to the process, appropriately understanding the scope, budget and benefits of each initiative before it progresses to the next stage, while also acting as a useful communications tool with the Council and other stakeholders. The following diagram provides an overview of a typical project lifecycle, with clear "gates" for moving between phases.



Sourcing

Using a combination of internal and external sourcing options to provide capability and capacity to meet the Council's growing ambitions

Digital Services will need to manage future demand in line with its stakeholder expectations. Given the significant technology implementations (e.g. CRM, analytics, integration, finance), it will come under significant pressure to deliver for the business.

Sourcing the required level of capability and capacity is a complex jigsaw that involves the right blend of internal and external sourcing solutions to deliver technology initiatives, as described in the following diagram.

Developing the team

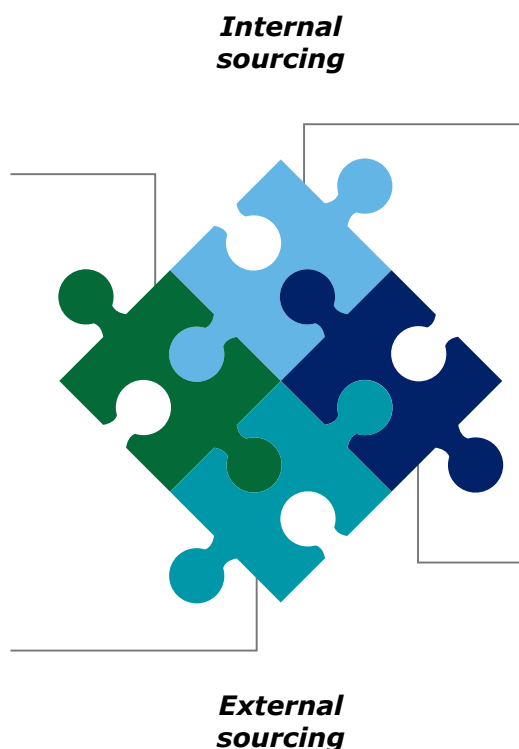
New technology will have an impact on the appropriate skills mix that should make up Digital Services. With the emergence of cloud, and the increasing focus on the customer experience within the Council, the team will need to be able to leverage the benefits of new technology to upskill and re-deploy team members to areas of high demand.

For example, by transitioning to a primarily Infrastructure as a Service (IaaS) and Software as a Service (SaaS) landscape, the team will no longer require the same level of on-premise specialists; rather these resources will need to transition to assisting in the development of cloud applications.

Strategic Delivery Partners

Technology services within the Council are at a pivotal point, with rising expectations of technology solutions (enterprise-wide and directorate-specific), alongside a changing technology landscape and a building ambition to innovate. To meet those expectations, the Council may need to add capability and capacity.

By sourcing Strategic Delivery Partners to complement in-house expertise, the Council would have support needed to define and execute a complex transformation programme, alongside technology delivery services, including specialist capabilities (e.g. LFFN Programme).



Attracting talent

Attracting quality talent is critical to Digital Services' continued success. It must have recruitment flexibility to ensure the right blend of talent and level of skills are available to deliver to the Council's growing ambitions. The Council will need to facilitate Digital Services' requirements to meet increased demand for specialist skillsets (e.g. cloud, analytics).

Talented individuals can now be selective and increasingly a competitive salary is not enough. Digital Services will need to compete for talent by offering opportunities with the right blend of financial reward, development opportunities and work life balance.

Project-specific extended resourcing

Digital Services maintains a register of technology projects that it is committing to deliver. With additional initiatives being recommended from the Customer Focus programme and this ICT strategy, that commitment will exceed the delivery capacity.

The Council could add capacity through various channels, including the Strategic Delivery Partner, via national frameworks (e.g. G-Cloud, DOS), local frameworks (e.g. CPD Consultancy Framework(s), local government Transformation and Change Management framework) or direct procurement exercises.

D. Recommendations (1)

Implementing a refreshed governance structure to enable rigorous IT initiative assessment and execution

#	Recommendations	Priority	Timeframe	Rationale
D.1	Business Alignment			
D.1.1	Enhanced Business Relationship Manager (BRM) role	Medium	Mar 2019	<p>The BRM acts as a primary point of contact between business functions and the IT team, reviewing project requests to ensure they align with the Business Strategy. They will also liaise with the enterprise architects to ensure compliance and escalate service related issues to suppliers. By enhancing the BRM role, the Council can expect to realise a number of benefits:</p> <ul style="list-style-type: none"> • Improved IT and business alignment • Tailoring of service offerings in line with business demands • Delivery of projects / services that satisfy business objectives
D.1.2	Develop business-wide prioritisation criteria	Medium	Mar 2019	<p>Additional demand and expectations will be placed on the IT team as it seeks to realise its vision of becoming a trusted advisor and delivery partner to the business. It will therefore be important to develop a standard and repeatable assessment framework for determining when initiatives should be progressed. This will enable the IT team to manage and prioritise demand in line with business objectives and improve technology investment decisions</p>
D.2	Project Delivery			
D.2.1	Refresh IT Projects Register	Medium	Mar 2019	<p>It is essential that there is a clear view – at all times – of the current and potential future demand on IT. While Digital Services maintains an IT Programme of Work, the extension and ongoing management as an IT Projects Register could provide a simple mechanism to track projects and initiatives from idea through approval to execution, and can serve as a useful means of communicating the demand on IT to the business and other stakeholders.</p>
D.2.2	Implement governance mechanisms	High	Oct 2019	<p>Establishing the appropriate governance mechanisms and integrating with the wider organisation will enable Digital Services to gain greater control over IT delivery. Refreshing the terms of reference, and aligning with corporate governance mechanisms, will provide clarity regarding how IT projects are initiated, assessed, and executed.</p>

D. Recommendations (2)

Implementing a refreshed governance structure to enable rigorous IT initiative assessment and execution

#	Recommendations	Priority	Timeframe	Rationale
D.2.3	Extend project delivery methodology	Medium	Dec 2019	<p>While a lightweight PRINCE2 variant is adopted for major IT projects (particularly those that require third party support or input), it is important that Digital Services extend its use to all appropriate IT initiatives across the department. The project delivery method will provide:</p> <ul style="list-style-type: none"> • clear stage gates and criteria required to progress from one stage to the next; • project templates and a common means of reporting project progress; • a consistent means of delivering and tracking projects • a framework for effective decision taking and problem resolution; and • the ability to control project scope and identify struggling projects quickly.
D.2	Evolving Workforce			
D.3.1	Review talent and sourcing strategy	High	Sep 2019	<p>Digital Services must consider how it will attract new talent to the organisation and how knowledge can be effectively managed in transition. Developing career pathways will help recognise the professional nature of IT roles and help individuals and the wider business understand the specialist capability within Digital Services. It will build credibility of the department and enhance its ability to become the Council's trusted advisor and delivery partner.</p> <p>In addition, Digital Services should define its approach to sourcing, using both internal and external sourcing resources to provide the capability and capacity necessary to meet the Council's growing ambitions.</p>
D.3.2	Develop Target Operating Model	Medium	Apr 2020 (ongoing)	<p>Technology is well-established as a key enabler of business change within the Council. However, the ambitious plans set out in the Belfast Agenda, combined with the expectations and opportunities arising from the Belfast Region City Deal mean that technology has a broader role to in delivering change for Belfast and the surrounding region.</p> <p>The Council must develop a target operating model to allow it to successfully meet challenges presented by the digital era, e.g. how will the Council develop analytics skills to maximise value from its data; how will prototyping of new technologies be enabled; what role will Digital Services play in delivery of technology for the city, etc.?</p> <p>Staff in Digital Services will require additional development to incorporate new ways or working (e.g. Cloud) and new technology (e.g. CRM, Analytics, etc.) being implemented. Addressing these challenges will put Digital Services in the best possible position to maximise on future capacity and value it can deliver to the Council.</p>

E. Cloud

Managing the growing adoption of cloud software and infrastructure

Introduction

Managing the growing adoption of cloud software and infrastructure

On-going budgetary pressures have placed funding constraints on many public sector organisations, and the adoption of cloud-based solutions is gaining traction within many IT programmes.

Digital Services are under increasing pressure to use technology adoption to support the Council's efficiency programme and enable on-demand capabilities to better support business change programmes.

Technology vendors are increasingly moving to the cloud, with on-premise alternatives, either, no longer available, or, not as attractive as they deliberately offer a reduced feature set. Some notable examples of leading software deployed via cloud services include business productivity suites and customer relationship management solutions.

The move by the market to cloud offerings will reduce future requirements for on-premise infrastructure. The Council has heavily invested in on-premise infrastructure over the years, both financially and in the skills that the Digital Services team have available to maintain an on-premise data centre.

Although an infrastructure move is not imminent given recent investment, moving to the cloud is an inevitable evolution of the IT service-delivery model of the future. In fact, the Council already deploys some applications in the cloud, with corporate examples including Microsoft's Office 365, and some directorates having procured cloud-based solutions, such as the Grants system.

This section outlines the Council's need for a cloud migration strategy to ensure that it takes appropriate technology procurement and implementation decisions so that it is ready to realise the benefits of cloud technology when the next infrastructure refresh is being considered.

Why adopt cloud technologies?

While the market is influencing decisions to adopt cloud technologies, there are a number of benefits for organisations, including:

- **Reduced time-to-market:** "Turn-key" computing solutions shorten the ideation-to-implementation cycle.
- **Scalability:** By being able to provide extra technology resources as required, organisations can accommodate sudden spikes in demand;
- **Limited capital investment:** The on-going nature of cloud spending enables organisations to focus time, effort, and resources on using IT services rather than conducting extensive planning exercises to secure funding and/or implement IT infrastructure. However, this needs to be balanced against revenue expenditure constraints.
- **Innovation:** With cloud providers continually innovating, new features and functions frequently become available. Leveraging these features enables IT resources to be directed toward other business priorities.

These benefits translate into the following operational efficiency gains:

37% decrease in average time to deploy new applications **INCREASED AGILITY**

118% increase in the number of business applications deployed per year **INCREASED OUTPUT**

80% reduction in unplanned downtime instances per year **IMPROVED RELIABILITY**

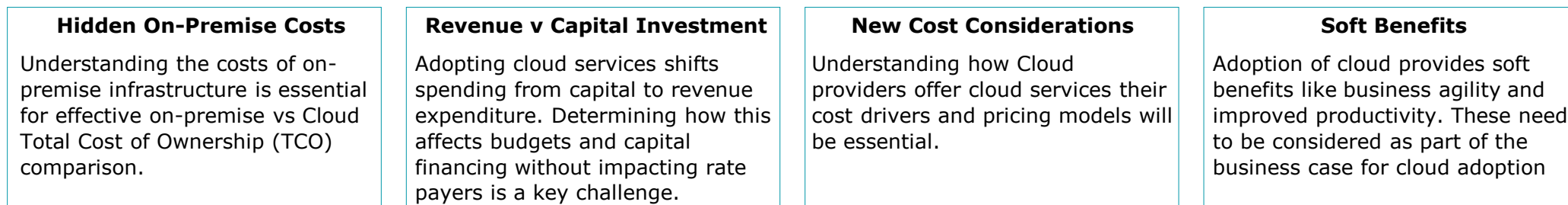
Challenges to adopting cloud

While the benefits to adopting cloud can be significant for the Council, there are challenges to address before these will be realised

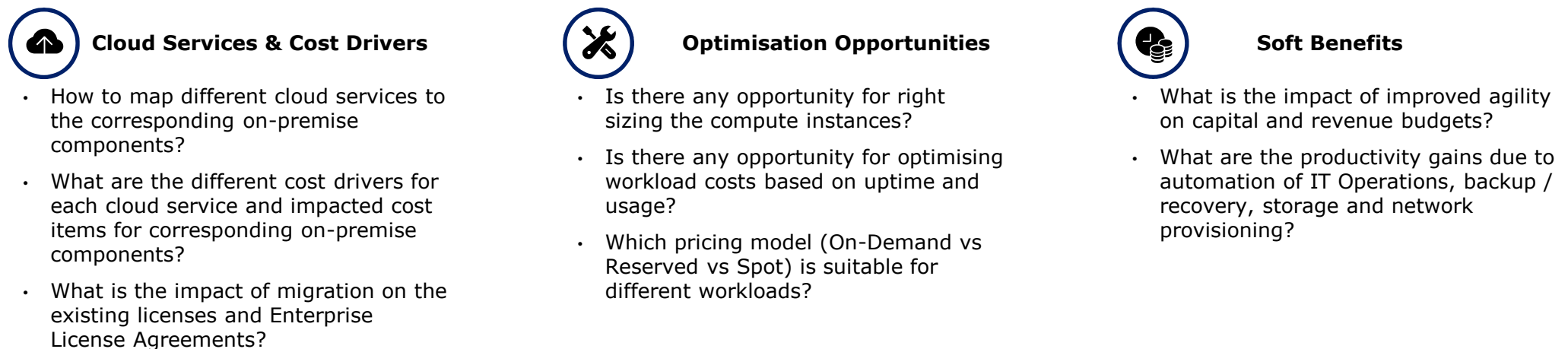
While cloud technology has the potential to deliver significant benefits for the Council, the path to cloud adoption has a range of financial and organisational challenges that need to be addressed.

For example, one of the major drivers of increasing cloud adoption is the promise of cost savings. However, transitioning to the new cloud environments and/or decommissioning existing/legacy services may, in fact, cause costs to rise. In those scenarios, the organisation must consider further benefits of cloud adoption in other areas, such as time to deploy new solutions (innovation and agility), scalability that can be exploited to avoid costs by preventing the over provisioning of capacity, and elasticity to meet fluctuating workloads. The following diagram describes the key cost challenges and considerations for Digital Services as it plans to adopt cloud technologies.

Understanding the cost challenges



Key Considerations for Digital Services







Cloud Strategy

Defining the target state for cloud services within the Council

Given the recent investment in the on-premise infrastructure, the migration to cloud infrastructure is not imminent for the Council. However, a cloud strategy should define the cloud principles that govern technology procurements and implementations, and the approach to migration to cloud technologies, and the target state for cloud services within the Council.

Importantly, the principles to be identified in the Cloud Strategy will help guide the procurement of future enterprise applications (e.g. CRM, Finance), allowing the selection of software-as-a-service solutions. The diagram below describes the key components of a cloud strategy, including the key questions that Digital Services will need to answer.

Component	Sub-Components	Key Questions to be addressed						
 Direction	<table border="1"> <tr> <td>Cloud vision</td> <td>Business & Technology Strategy Alignment</td> </tr> <tr> <td colspan="2">Business Case</td> </tr> </table>	Cloud vision	Business & Technology Strategy Alignment	Business Case		<ul style="list-style-type: none"> • What do we want to accomplish with Cloud? By when? • How will Cloud enable the business and technology strategies? • What are the financial and non-financial benefits of Cloud? • What are the key challenges to adopting and using of Cloud services? 		
	Cloud vision	Business & Technology Strategy Alignment						
Business Case								
 Oversight	<table border="1"> <tr> <td colspan="2">Governance Model</td> </tr> <tr> <td>Regulatory Compliance</td> <td>Security & Risk Management</td> </tr> </table>	Governance Model		Regulatory Compliance	Security & Risk Management	<ul style="list-style-type: none"> • How will you govern the use of Cloud in your organisation? • How can we ensure compliance to evolving regulatory landscape? • How can we ensure that any incremental risk falls within our risk appetite? • What mechanisms are required to monitor/manage it? 		
	Governance Model							
Regulatory Compliance	Security & Risk Management							
 Solution	<table border="1"> <tr> <td>Workloads & Use cases</td> <td>Services (IaaS, PaaS, SaaS)</td> </tr> <tr> <td>Vendors, 3rd party providers</td> <td>Application Landscape</td> </tr> <tr> <td colspan="2">Architecture</td> </tr> </table>	Workloads & Use cases	Services (IaaS, PaaS, SaaS)	Vendors, 3rd party providers	Application Landscape	Architecture		<ul style="list-style-type: none"> • What type of services, applications, and data should move to the Cloud? • What use cases will be deployed through Cloud technologies? • What is the implication of cloud on the existing application landscape? • What is the underlying architecture for a hybrid cloud deployment?
	Workloads & Use cases	Services (IaaS, PaaS, SaaS)						
	Vendors, 3rd party providers	Application Landscape						
Architecture								
 Organisation Evolution	<table border="1"> <tr> <td>Capabilities & Processes</td> <td>Stakeholder Engagement / Interactions</td> </tr> <tr> <td colspan="2">Roadmap & roll out</td> </tr> </table>	Capabilities & Processes	Stakeholder Engagement / Interactions	Roadmap & roll out		<ul style="list-style-type: none"> • How will the IT organisation need to change (capabilities, processes etc.)? • How will our interaction change with business and other key stakeholders? • What new tools are required for cloud operations and service management? • How will our end-to-end adoption journey look like? • What activities / actions are needed to effectively manage cloud adoption? 		
	Capabilities & Processes	Stakeholder Engagement / Interactions						
Roadmap & roll out								

Cloud Recommendations

Preparing Belfast City Council to embrace cloud technology as part of a strategic plan

#	Recommendations	Priority	Timeframe	Rationale
E.1	Establishing a Cloud Vision			
E.1.1	Define cloud strategy and principles	High	Jun 2019	Preceding any potential deployment of cloud technology it is vital that Digital Services create a cloud strategy to govern and guide in a holistic way how the organisation should approach exploring and adopting cloud technology. As part of this, a set of principles should be created to support decision making.
E.1.2	Address tactical decisions	High	Jun 2019	Following on from completing the cloud strategy there will be a number of immediate tactical decisions for Digital Services to answer based on the new guiding principles. This may include revisiting the approach to some of the existing system replacements or the upcoming customer programme to ensure new procurements align to the cloud strategy. It is important to note that this will enable Digital Services to take a longer term view for other applications.
E.2	Preparing For Cloud Adoption			
E.2.1	Define migration approach and sequencing	Low	Mar 2020	A migration plan will enable Digital Services to accurately forecast future demand and cost impacts to the organisation. This will define the target mix of on-premise and cloud infrastructure for the Council. Each application will require a decision to be made regarding its future deployment and management.
E.2.2	Create business case for hardware migration	Low	Sep 2020	The migration plan will form the basis for business case for the Council's infrastructure replacement scheme (this is not imminent given recent investment in on-premise infrastructure). Increasing cloud software solutions alongside cloud infrastructure deployments will allow the Council to reduce its on-premise footprint, reducing the need for upfront investment in hardware.
E.2.3	Execute on plan	Low	Dec 2021 (ongoing)	This assures that predetermined benefits are realised, maximising on identified operational efficiencies that will be gained through migration.

F. Emerging technologies

Monitoring innovative technologies for use cases by the Council to improve overall service delivery

Introduction

Historically, the Council has operated like a typical local authority: it has been characteristically risk-averse, compliance-driven and oversight-heavy. Often this stifled creativity and impeded the motivation to innovate.

However, there is now a growing ambition within the Council to have a real impact on the city through the delivery of the Belfast Agenda. This provides an opportunity to research and apply creative approaches for customer service improvement, business process transformation and legacy modernisation, which will bring new challenges for financing and procurement.

Public sector organisations are often hesitant to invest in unproven solutions, given resource limitations, the election cycle, and a lack of the same market forces that can naturally drive innovation in the private sector. However, innovation has the potential to deliver improved public services and wider benefits to public sector organisations. The challenge for the Council is to be able to reap the rewards of investing in truly transformational innovation efforts while successfully mitigating the accompanying risks, as described below:

Digital Services are facing pressure from the business to...

- Focus on delivering **new products and services** to advance the creation of new ways of working.
- Become a **partner to explore** products that deliver services differently.
- Advise on how **new technology** could be used to improve services the Council provide to the city.



...while balancing the traditional priorities of IT to:

- Deliver efficient and reliable **operations** to serve the business
- Manage the **risk** associated with the adoption of new technology to protect business operations.
- Drive operational **efficiencies** through the use of technology.

This theme of the Council's ICT strategy discusses the following topics:

- **Emerging technologies and digital innovations:** a brief look at some emerging technologies and digital innovations and how they could be harnessed by the Council to deliver improved services;
- **Innovation governance:** while unpredictable, the Council will need to rely upon a governance framework to control its investment in innovations and manage associated risks; and
- **Tech Fluency:** innovation must not be restricted to any individual or team: it must be pervasive throughout the Council and its partners. To achieve this, the organisation must attain a level of technology fluency to allow individuals and teams to generate ideas.

Emerging technologies and digital innovations

Digital innovations opportunities that could support the Council in pursuit of its ambition to become *“an exemplar in the use of innovative technology”*

A key enabler of innovation is emerging technology, which provide new ways of completing processes or tasks, provide new insight, or deliver services that were simply not possible before.

There are also a number of emerging technologies (in addition to more established technologies described opposite) that may be relevant to the Council, such as:

- **Robotic Process Automation (RPA):** with potential to free up staff time, improve productivity and customer experience, RPA is typically complementary to current activity, addressing repetitive, mundane tasks. Some examples the Council could explore include: Revenue collection, licence applications, Incident reporting, Case management, Contract administration;
- **Artificial Intelligence (AI) Chatbots:** Cognitive AI capabilities go beyond static question-then-answer formats and offer dynamic conversations that require intuition, judgment, creativity, persuasion, and/or problem solving. For example, chatbots could be deployed internally to automate processes in HR, Finance and IT, or externally to serve citizen requests online. Chatbots could help the Council benefit from improved insight from data, and improved efficiency through automation and self service; and
- **Augmented Reality (AR):** an emerging technology that superimposes images on a user’s view of the real world. Could the Council collaborate with tourism partners to use AR to enhance visitor experiences across the city’s attractions?

The diagram below provides a brief introduction to some technologies that have emerged or evolved in recent years, with examples of how they may be harnessed by the Council to deliver improved services.

The challenge for the Council is to develop specific use cases for how these – and other – technologies could be deployed, and to manage the innovation process.

Transportation Technology

Transportation technology is evolving to provide quick and sustainable methods to travel quickly from A-B in a sustainable way. Could the Council employee innovations in its fleet of vehicles?

Internet of Things

A network of sensors and intelligent control could improve citizen experience in Council facilities

Wearable Technology

Could wearables improve experiences at leisure facilities or improve quality of maintenance operations?

Social Media

Social listening analytics can provide real time sentiment analysis around keywords to provide insight

3D Printing

Could 3D printing create parts required for maintenance quickly and at low cost and eliminate the delay required for parts to appear through the supply chain.

Smart Scheduling

Workforce management tools allow smart scheduling of mobile workforces across devices. Could this make it easier for workers to complete jobs while increasing productivity, improving prioritisation and reducing admin?



Governing Innovation

Defining a sustainable, measurable and efficient framework for managing innovation within Belfast City Council

Generating innovative ideas requires freedom to use new technologies, or use existing technology in new ways, operating outside standard processes to test feasibility and identify use cases and potential benefits.

However, without a formalised mechanism in place, it can be difficult to manage the process of innovation to ensure that the outputs are sustainable and will be successfully adopted by the intended user base.

A robust governance process will enable Digital Service to successfully manage the risk associated with innovation and deliver technology solutions that are:

- aligned to the Council's strategic objectives;
- capable of delivering benefit to the Council via improved / new services or through reduced costs; and
- sustainable from a support and maintenance perspective.

Key attributes of an innovation governance process include:

- **Generic:** A framework of generic set of processes with supporting tools & templates, which support both process innovation and technology innovation;
- **Collaborative:** provides collaboration and integration opportunities across multiple directorates for higher value generation; and
- **Measurement-oriented:** capability to measure value, risk, feasibility and maturity of innovation at various levels to avoid wasted time and resources.

Innovation Governance Process

The following process describes a process that the could use as the basis for governing the innovation process.

1. Research, Design & Develop Business Case

Develop a business case based on the scale of the opportunity, the processes involved and the technology investment required.

2. Assess Idea Feasibility

Based on criteria such as level of risk and cost of implementation, objectively measure the likelihood of success.

3. Strategic Assessment & Sponsorship

Develop a deeper understanding of the business problem being solved and gain senior stakeholder buy in.

4. Team Building

Consider the desired make up of the team required to manage the programme and resource accordingly.

5. Develop Proof of Concept

Identify visible, measurable benefits that allow for feedback to be analysed and incorporated into further development cycles.

6. Pilot

Select early adopters for usage and testing of the solution.

Tech fluency

Encouraging innovation through building broad awareness of technology capabilities across the Council

Tech fluency is a concept that encompasses a spectrum of proficiency in relation to the capabilities of technology and how it can be applied to a business scenario.

As technology increasingly supports how the Council delivers services, then to engage in, and contribute to a tech-driven business environment, to be able to quickly learn the next big emerging technology's functions, and to grow professionally, all employees – from executives to apprentices – will need to learn much more about the Council's critical systems: their capabilities and adjacencies, their strategic and operational value, and the particular possibilities they enable, i.e. individuals will need to become *tech fluent*.

The three levels of fluency can be described as follows:

- **Basic:** a basic understanding of enterprise technology principles and systems makes it possible for workers to understand deeper technology concepts, enabling them to follow technology trends, differentiate between tech "myth" and fact, and understand how the tools they use each day contribute, directly or indirectly, to business success.
- **Intermediate:** tech fluency becomes more role- and business-function-specific, consisting of a detailed working knowledge of how technology capabilities and their adjacencies can drive new revenue and open fresh opportunities in the near term. At this intermediate level of fluency, employees may be able to understand the possibilities of technology more broadly and harness system capabilities to create efficiencies, drive strategy, and pursue new revenue; and
- **Advanced:** individuals can sense future disruptive opportunities that emerging innovation may make possible three or even five years down the line—and use that foresight to help their companies create sustainable competitive advantage.

For individuals with the Council's directorates, the level of tech fluency should move towards the Basic and Intermediate levels; while the role of Digital Services will require its people to be operating at the Intermediate, and in some cases, Advanced levels.

The role of Digital Services

As both a Change Instigator and Business Co-creator, Digital Services will be required to transition, in part, from applications that are designed and managed by IT, to the creation of innovative digital services designed in partnership with the business.

As business users become increasingly tech fluent, they will look to Digital Services to deploy technologies quickly while ensuring that any impact to other areas of the business is managed. This will increasingly require Digital Services to:

- **Be aware of the possibilities:** Digital Services will need to be continually aware of emerging technology trends that have the potential to disrupt current ways of working, bring cost savings to the organisation or improve the customer experience;
- **Test viability:** Some technology will not be suitable for the Council and any new options will need to be tested to assess its suitability. By establishing the innovation governance framework outlined previously, Digital Services will be able to minimise the risk to the organisation and deploy new solutions in a controlled and strategic way; and
- **Advise the business:** Becoming aware of the possibilities will allow Digital Services to take a leading role in the initiation of new solutions. The team will be required to effectively manage and control technology deployments, ensuring the best possible outcomes can be achieved.

F. Recommendations (1)

Looking to the future and helping the business realise the opportunities new technology can create

#	Recommendations	Priority	Timeframe	Rationale
F.1	Innovation Governance			
F.1.1	Establish innovation governance framework (to govern innovation being driven from internal initiatives, the Belfast Agenda, the Smart Belfast framework, and the City Deal)	Medium	Apr 2019	<p>Innovation is increasingly important for the Council as it targets improved outcomes for citizens. However, risks associated with innovation must be correctly managed. A council-wide innovation governance framework will define processes for generating, exploring, prototyping and piloting ideas in a sustainable manner.</p> <p>This framework will become a common mechanism for governing innovation that is being driven from internal initiatives, the Belfast Agenda, the Smart Belfast framework, and the Belfast Region City Deal.</p> <p>This governance framework should also encourage close alignment between Digital Services and the Council's directorates (including "City and Council Strategy") as they identify business improvement or strategic innovation ideas.</p>
F.1.2	Establish Innovation Forum and Fund	Low	Apr 2020 (ongoing)	<p>An Innovation Forum to discuss emerging industry trends and technologies will promote idea generation across the Council, while an Innovation Fund will provide seed investment for initiatives.</p> <p>For example, the forum could investigate how to increase use of cloud services and technology, how the customer and user experience can be enhanced through digital, or how to use emerging technologies such as Internet of Things and Robotics to improve business processes and service delivery. This will help embed a change culture in the business, limiting duplication of effort and investment and increasing knowledge sharing.</p>
F.2	Technology Fluency			
F.2.1	Build Digital Services capability	Medium	Dec 2019	As the trusted advisor to the business, Digital Services must build upon its knowledge to possess an advanced level of tech fluency on emerging technologies. In addition to learning programmes, this will require capacity among the team to research, understand and develop use cases to be able to be aware of the possibilities, test viability and to advise the business effectively.

F. Recommendations (2)

Looking to the future and helping the business realise the opportunities new technology can create

#	Recommendations	Priority	Timeframe	Rationale
F.2.2	Build a culture of continuous learning	Low	Dec 2021 (ongoing)	<p>The Council will need employees who understand enterprise technology, along with the specific applications and systems that enable their own roles, and who are aware of potentially disruptive innovations and trends. Increasingly, organisations recognise the need to build continuous learning programmes that help employees develop technology skills and knowledge quickly. To meet this need, the Council could adopt the following strategies:</p> <ul style="list-style-type: none"> • Make tech fluency learning programmes self-directed, digital, and dynamic. Traditional learning management systems are being replaced by new technologies for curation, delivery, and mobile use that put learners in the driver’s seat. Moreover, a wide variety of low-cost learning opportunities are emerging in various online and video channels and can be used to target improvements in the organisation’s tech fluency. • Tie learning to professional growth. Offer a curriculum focused on the baseline learning requirements of given roles. This allows users to explore adjacencies and prepare for other jobs within the organisation. • Make continuous learning opportunities part of the corporate brand. The employment brand needs to be visible and attractive and learning – including tech fluency – needs to be part of that brand.

Section 5

Implementation Roadmap

Introduction

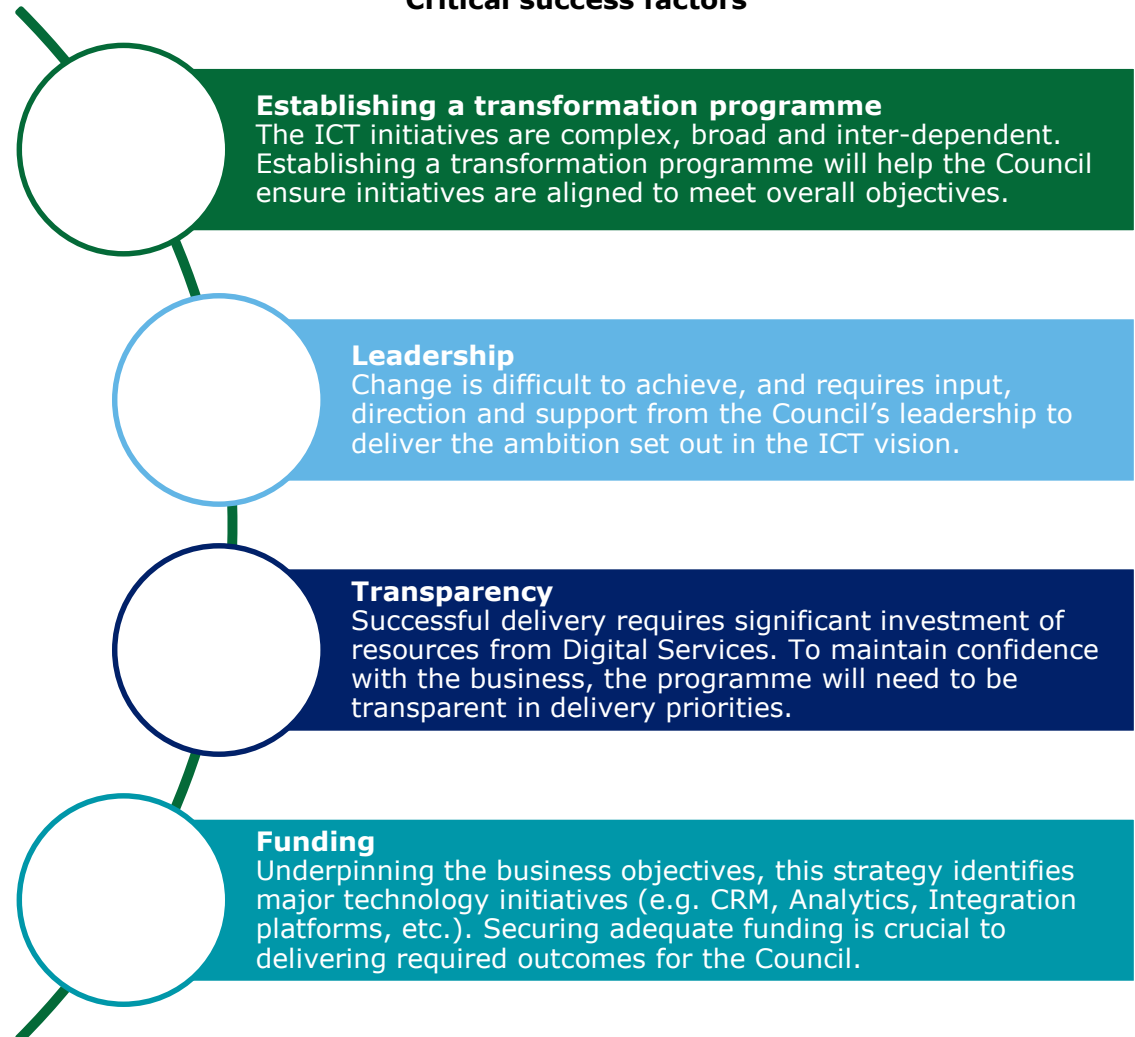
An overview of the approach that the Council might use to benefit fully from this ICT Strategy

This section sets out the proposed roadmap that will guide how the Council sets out to achieve its vision of becoming “an exemplar in the use of innovative technology to deliver improved outcomes for Belfast and its citizens.”

This section provides an overview of the following:

- **Critical success factors:** it is important to understand what some of the key factors are that will contribute to the successful delivery of the ambitious initiatives outlined in this ICT strategy (see opposite);
- **Risks:** as the Council begins the initiation phase for the implementation programme, it is important to develop an early view of the risks to the programme to be able to take active steps to mitigate those risks and allow the programme to continue successfully;
- **Roadmap:** the initiatives that have been identified through the development of this ICT strategy have been consolidated into a roadmap to give the Council an early indication of the programme of work, understanding priorities and dependencies;
- **In-flight Initiatives:** the current portfolio of technology initiatives that Digital Services has is described to provide context for the delivery of new initiatives recommended by this ICT strategy; and
- **Next steps:** to deliver the target state, the Council will first need to gain momentum. This can be achieved through an early transition phase that will determine the practical first steps that are needed to initiate execution of the strategy.

Critical success factors



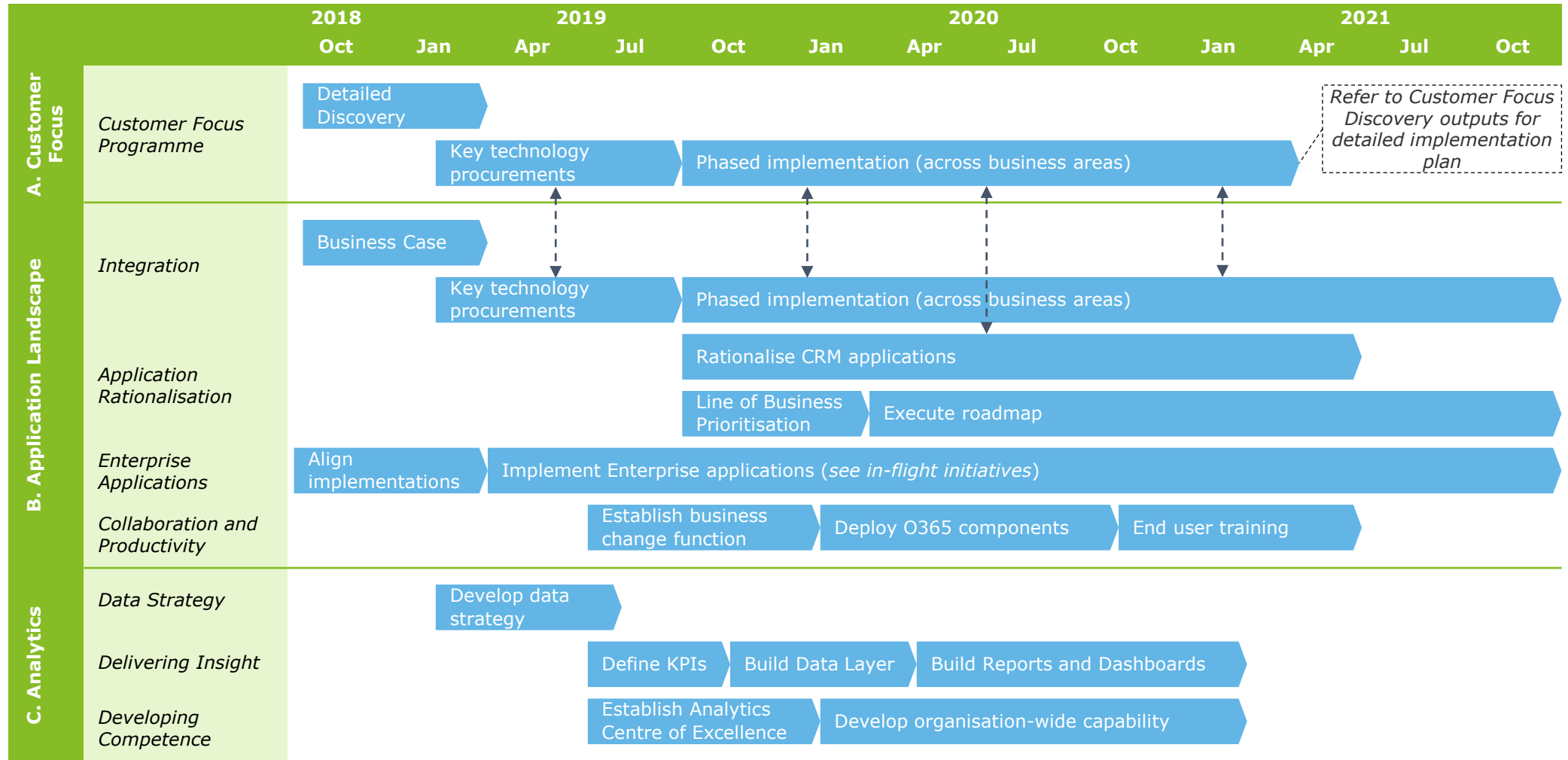
Risk overview

An initial assessment of risks associated with the implementation of this ICT strategy

#	Risk	Mitigating Actions
R1	<p>Delivery capacity The Digital Services team is currently sized for delivery of known business-as-usual and solution delivery demands. However, this strategy places considerable additional demand on those resources to deliver additional technology-driven change, and there is a risk that Digital Services does is unable to create the delivery capacity needed.</p>	<ul style="list-style-type: none"> • As the Council establishes a transformation programme, it must define the resource requirements and provide Digital Services with the capacity to deliver. • Given the volume and complexity of transformation required, the Council could use a combination of internal and external sourcing strategies to meet demand.
R2	<p>Planned / In-Flight Projects Business-as-usual planning has highlighted a range of technology initiatives that are either planned or in-flight. There is a risk that current commitments to the business cannot be revised to provide Digital Services with the flexibility needed to deliver the programme of work outlined in this strategy.</p>	<ul style="list-style-type: none"> • Digital Services must review planned and in-flight initiatives as an immediate priority to determine how to meet commitments against the transformation programme. • Initiatives should be reviewed and/or re-defined to incorporate within the ICT strategy roadmap. • Recommendations from each of the programmes should be agreed upon at a board level to ensure there is a clearly defined programme of work for Digital Services and the Council to implement over the lifespan of this strategy.
R3	<p>Securing commitment from business stakeholders Successful delivery of this strategy goes beyond the organisational remit of Digital Services: it requires direction and input from directorates to support collaboration and transparent governance, as well as commitment to supporting technology initiatives that contribute to delivery of the strategy.</p>	<ul style="list-style-type: none"> • Digital Services should engage directly with the business to build awareness and support for the strategy and its recommendations. • Digital Services should establish forums to communicate – and seek input – regularly with stakeholder groups throughout delivery. • Digital Services should understand how to provide capability and capacity to support the business technology change initiatives where appropriate.
R4	<p>Alignment with Customer Focus programme There is a high degree of dependency between the ICT strategy and the Customer Focus initiative, specifically in relation to CRM implementation, integration and application rationalisation, and the Analytics platform to support evidence-based decision-making. There is a risk that the dependencies are not managed successfully, leading to inconsistent or incompatible technology outcomes.</p>	<ul style="list-style-type: none"> • Establishing a transformation programme incorporating both initiatives will help the Council to ensure that the programmes remain fully aligned throughout delivery to enable it to achieve the required outcomes.

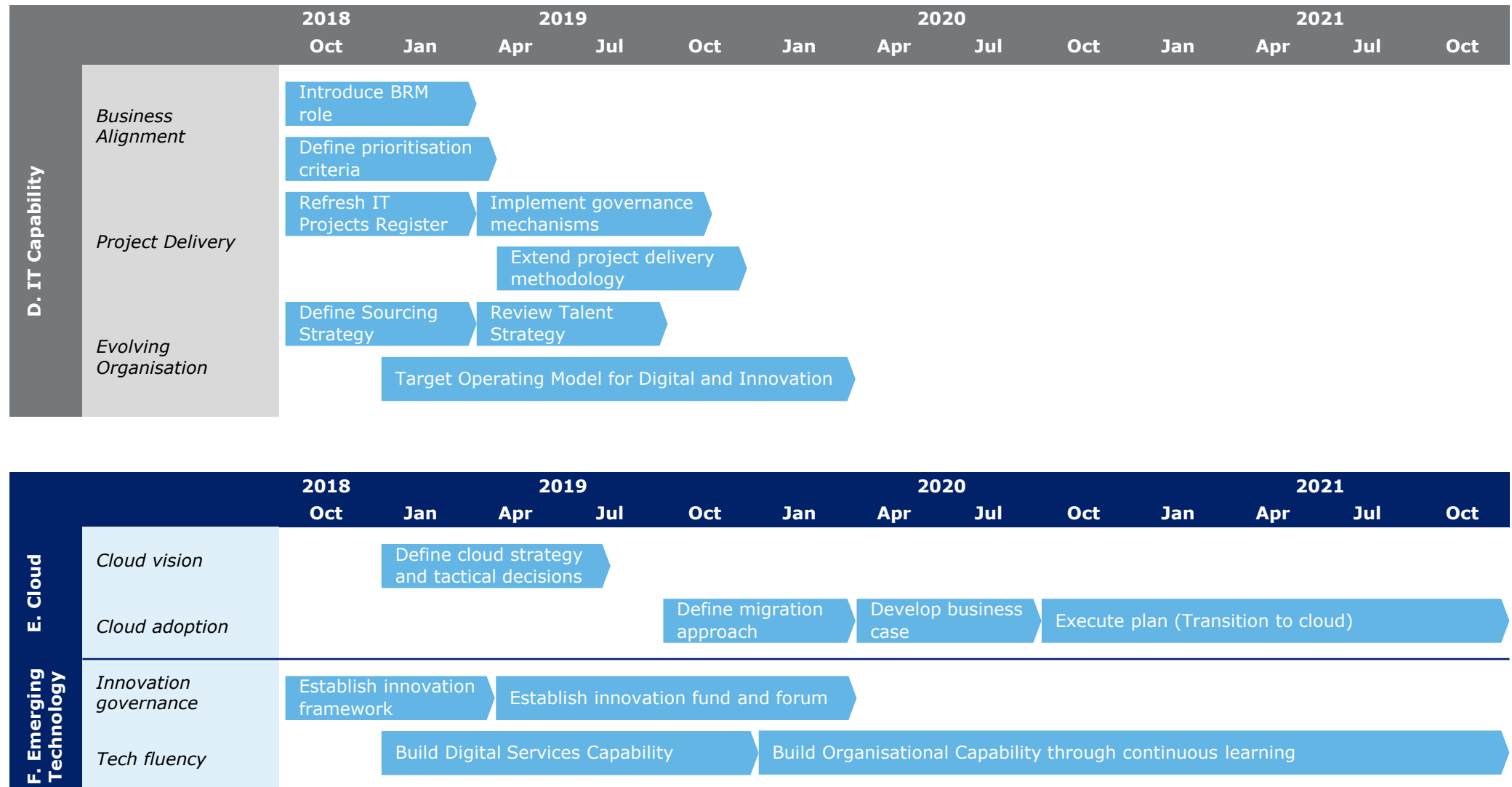
ICT Strategy Roadmap (1)

An indicative plan to deliver the key initiatives identified within the strategic themes in the “*Application Landscape*” category



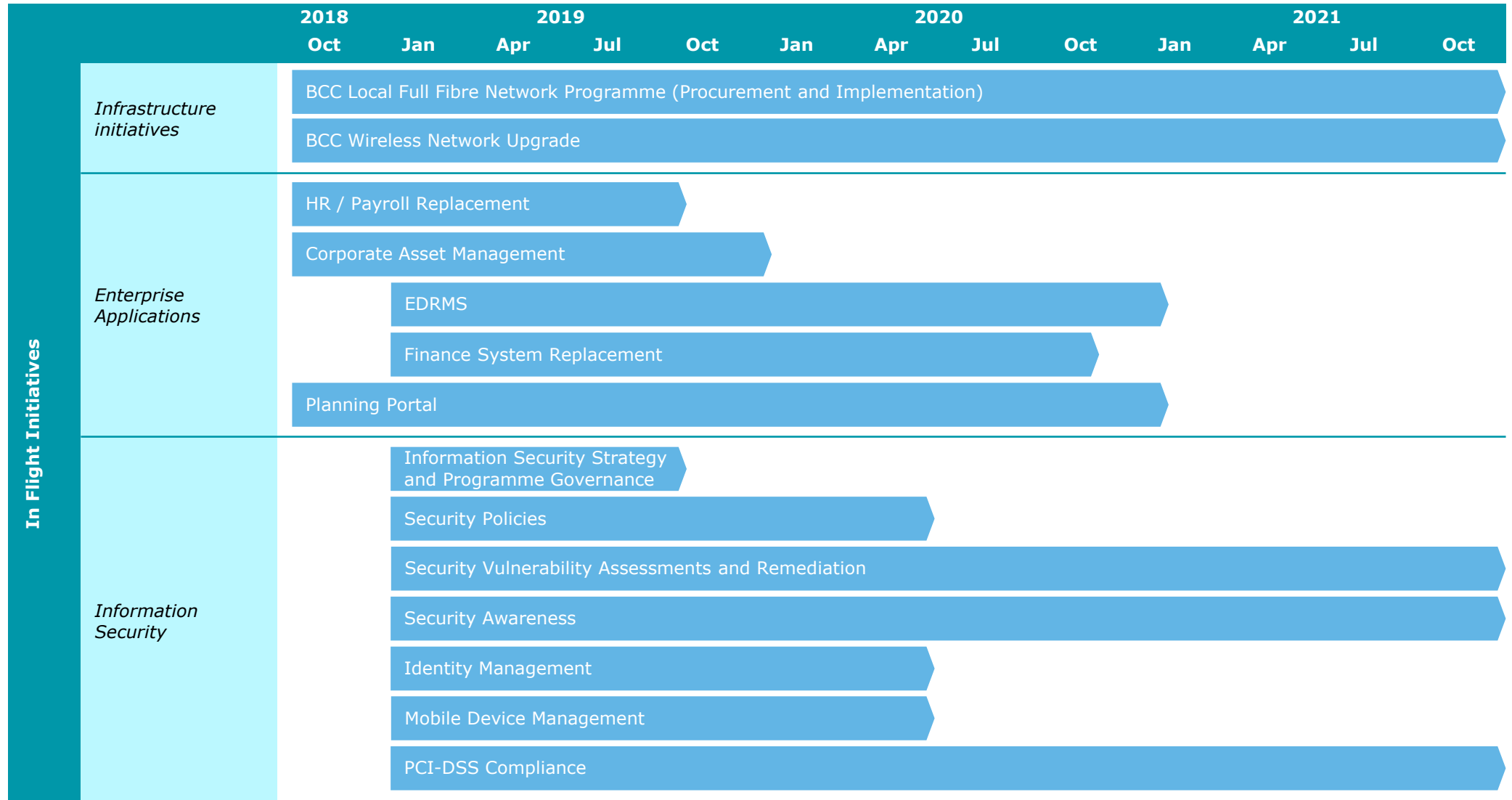
ICT Strategy Roadmap (2)

An indicative plan to deliver the key initiatives identified within the strategic themes in the “*Internal Capability*” and “Leading Innovation” categories



In-flight initiatives

Digital Services will need to ensure that delivery of the ICT Strategy roadmap is aligned with in-flight initiatives



Next steps

The following immediate next steps have been identified for the Council to accelerate the implementation of this ICT strategy:

- Engage with business stakeholders to build awareness of, and support for, the ICT vision, including what that means for those stakeholders;
- Secure approval from senior stakeholders and authority to proceed from the Strategic Policy and Resources Committee;
- Align initiatives with the Customer Focus programme, agreeing roles and responsibilities, and overall approach to implementation; and
- Establish a transformation programme to govern the implementation of the ICT strategy (and Customer Focus initiatives).



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