# *Being Digital*

# *Implementation Roadmap*

| | **Being Digital**<br>**Implementation Roadmap** | |
|---|---|---|

# 1. Contents

## 2. The 'Being Digital' Journey

On 20th September 2016, the 'Being Digital' report (Appendix 2) was approved at the Finance, Policy and Resources Committee. This followed on from two previous reports ('Building a Digital Future' and 'Digital Connectivity Strategy') which had been through the same Committee on 19th April 2016, both aimed at presenting a strategy for a Digital Aberdeen which would improve wider outcomes.

'Being Digital' states our strategy as being 'To change how we do business to meet outcomes and customers' expectations through digital solutions".  The strategy targeted the following three areas:

1.    Improving Customer Experience –
Improving customer experience is at the forefront of Being Digital, which will deliver end-to-end services, accessible anytime from anywhere, with feedback, improving how customers, partners and suppliers can use any service digitally. These groups will be able to access services more easily and receive a more consistent level of service.

2.    Improving Staff Experience –
Being Digital will improve the staff experience, enabling greater collaboration internally and with partners, enabling access to processes and information when and where they need it, and improving digital skills. All staff will be able to work from anywhere, with anyone and at any time. The strategy will also ensure that ACC staff have the right tools and training to do their jobs.

3.    Improving ACC's use of Resources –
The strategy will deliver savings and allow ACC to work better with partners. Delivery approaches will seek to minimise costs by exploiting existing frameworks, sharing programmes either locally or nationally and using existing capabilities better. This approach will be underpinned by use of data, creating insight to improve the way the Council uses resources and targets investment to prevent escalating need.

The strategy also set out the following design principles:
1.    Design services with our customers at the centre
2.    Present easy to use, integrated and standard interfaces
3.    Build services, not just websites
4.    Hold information once and securely
5.    Use data well
6.    Make sure the foundations work

'Being Digital' also acknowledged that one of the main challenges in any digital transformation programme is the rate at which technology changes. To counter this, 'Being Digital' set out two key plans for delivering the technology solution. The first was the 'Deliberate Plan' which described the essential building blocks of technology which would need to be included in plans over the next 18 months. The other plan was an 'Emergent Plan' which took a more long term view, considering emerging technologies that would need to be considered over the next ten years. Both plans are described in more detail below:

**Deliberate Plan**

In this plan the Council set out the technologies that would form the building blocks of the technology architecture in the 18 months after 'Being Digital' was signed. This plan was based around tried and tested technologies designed to improve customers' experience, the staff experience and make better use of resources.

- **Customer Experience Platform:** a platform for all customer contacts, that can be changed to meet ACC's needs, hold ACC's data in one place, develop apps based in the cloud and across all channels.
- **Master Data Management (MDM):** a system that enables an enterprise to link all of its critical data to one file, called a master file that provides a common point of reference. It is planned to implement a new MDM system as part of "Being Digital". Further details can be found in the Roadmap section (section 9).
- **Your Desktop:** a virtual desktop that will allow all staff to access their systems from anywhere and through any device, including their own devices.
- **Collaboration (Modern Workplace):** this will provide normal office packages (word, etc.), conferencing solutions, personalised webpages, internal social media, easier ways of sharing documents, team sites, projects management tool, all through one package.
- **Convergence:** to introduce single customer and staff accounts to allow for the federation of core systems with other organisations such as Aberdeenshire Council and the NHS.
- **Identity Management:** this will allow Aberdeen City Council residents and staff to verify their ID once, meaning that they can access services that they are entitled to without needing to re-confirm their identity. An ID management system is currently being designed and prepared for rollout, further details can be found in the Roadmap section (section 9).
- **Enterprise Private Cloud:** Most of ACC's data and storage is now held in a private cloud. This means it is managed off site by a specialist provider giving ACC flexibility and scalability.

**Emergent Plan**

The Council appreciated that there are a number of emerging technologies that over the next ten years may be exploited to improve how ACC do their business. These are more immature technologies and the extent to which they can benefit ACC will be examined over the next few years, with the most relevant and benefit inducing technologies being adopted.

- **Platform as a Service:** is a category of cloud computing that provides a platform and environment to allow developers to build applications and services over the internet. PaaS services are hosted in the cloud and accessed by users simply via their web browser.
- **Ambient computing:** refers to electronic environments that are sensitive and responsive to the presence of people and other objects.
- **Virtual reality:** the definition of 'virtual' is near and 'reality' is what we experience as human beings. So, the term 'virtual reality' basically means 'near-reality'.
- **Internet of Things:** brings together people, process, data and things to make networked connections more relevant and valuable than ever before.
- **Business process automation:** is the strategy a business uses to automate processes in order to contain costs. It consists of integrating applications, restructuring resources and using software applications throughout the organisation.
- **Artificial intelligence:** in computer science, an ideal "intelligent" machine is a flexible rational agent that perceives its environment and takes actions that maximise its chances of success at some goal.
- **Big data:** extremely large data sets that may be analysed computationally to reveal patterns, trends, and associations, especially relating to human behaviour and interactions.

As part of the design principle 'use data well', ACC have already put in place a number of open data initiatives, aiming to share data more effectively with partners. Approval was received from the Finance Policy & Resources Committee on 20th September 2017 to become one of the lead Councils for the Scottish Cities Alliance 8th City Data Cluster. The aim of that project was to deliver an Open Data Platform using ERDF/match funding. However, this was put on hold in August whilst ACC reviewed further options as the Digital strand of the City Region Deal (CRD) was proposing to deliver a much larger, wider ranging data platform that as well as publishing non -personal data sets, would collect, store and publish regional data.

The proposed platform (Regional Data Exchange) would also contain an exchange function that facilitates data transactions, where data from strategic stakeholders can be shared and analysed and used to generate insights, develop predictive tools and create services and products that ultimately allow Aberdeenshire, Aberdeen City and their strategic partners the ability to provide better/joined up services and make informed decisions.

The Outline Business Case for the CRD Regional Data Exchange and the Business Case for the Sensor Network were approved by the Joint Committee on 9th Feb 2018. This shared and open data work already undertaken also feeds into the roadmap which is found in section 9 of this report.

Following on from 'Being Digital', The 'Target Operating Model' (TOM) report was approved at full Council on 23rd August 2017 and this approval included the agreement of the Transformation Portfolio to address the three transformation objectives of:
- delivering up to £125million of benefits realisation (or savings) over five years (2018/19 to 2022/23);
- delivering the Council's digital strategy; and
- delivering the Council's Target Operating Model by 2020/21 with technology at the heart of the TOM.

To realise these transformational objectives members gave approval in August 2017 for £15m to be allocated to Transformation in support of the "Being Digital" strategy. This was made up of £4.5m for a digital partner; £7m for technology and £3.5m for other costs. At October 2017 Strategic Transformation Committee (STC) the £4.5m was further approved for procuring a digital partner, PwC, who were appointed using a tender exercise. Following this, in February 2018 £2.2m (part of £7m technology budget) was approved for the booking platform.

The transformation team have worked with a variety of partners and suppliers to date in order to take advantage of digital expertise which is not currently found within Council staff with the view of turning the Deliberate Plan into a reality and passing this knowledge onto Council employees. The full list of these partners is listed in Appendix 3 but as an example of a notable piece of work that has already been undertaken, CityFibre and Vodafone have partnered with Aberdeen City Council to provide high speed Wi-Fi to the city. This work will help to enable the Deliberate Plan and allow more of Aberdeen's Citizens to make the most of the new digital services that will be on offer. Moving forward the Council may continue to engage with these organisations working closely with the Council's Digital Partner in order to deliver in a timely fashion.

Four key organisational capabilities run through the TOM. Since the publication of the document these have been expanded on and defined as:

- **Engagement & Empowerment:** Greater engagement and collaboration with citizens and communities, offering greater ownership of services in their areas and strengthening their voice in decision-making.

- **Early Intervention and Prevention:** Using data and intelligence to anticipate customer needs and shift resources to tackling inequality, unemployment, crime, violence and poor health that has existed in some families for generations.

- **Enabling Technology:** Creating digital experiences for internal and external customers that are completely end-to-end enabling greater inclusivity and allowing more self-service options for those who can use them and freeing staff time to care.

- **Entrepreneurial:** Being creative and innovative about how we do our business

Leading on from these organisational capabilities, an important consideration of 'Being Digital' is ensuring that no one is excluded by the implementation of new technologies. The assumption is often made that all young people are online, however access to the internet and broadband coverage can't be taken for granted in Aberdeen with its pockets of deprivation and disadvantage. Older people, people with disabilities, people with language barriers and BSL users have cited call centres, automated phone systems and restricting applications to online only as being very real barriers to receiving information and services, and for older and vulnerable people there are issues around trust for internet transactions. How these disadvantaged groups are catered for is a key question that the implementation of 'Being Digital' will have to address, highlighting how important wider digital initiatives will be in upskilling the population to enable maximum possible benefit to be realised from the 'Being Digital' strategy. Our digital partner has pledged 20 days to promote digital free of charge in schools and this and other initiatives should allow 'Being Digital' to be a force for digital growth in Aberdeen.

To enable the continued implementation of 'Being Digital' this paper will restate the benefits of the strategy and will then identify the activities required in the near future to progress the implementation of the strategy.

The analysis will begin with an assessment of the current position of 'the deliberate plan elements of the "Being Digital' strategy followed by a description of the technology architecture required to deliver both the deliberate and emergent elements of the 'Being Digital' strategy. This will then be followed by a gap analysis of the existing technology architecture compared to the target state architecture.

An immediate next steps section will summarise the products and support that need to be procured over the next 3 months in order to start addressing the gaps in the technology architecture.

Finally, a roadmap will then be presented which will describe the activities required to resolve the gaps in the technology architecture beyond those addressed in the immediate next 3 months plan.

# 3. The Benefits of 'Being Digital'

Much of the work described so far will act as an enabler for the realisation of the benefits described below:

***Demand Related Benefits:***

***Reducing Avoidable Demand*** – The most effective way of reducing the cost of handling demand, whether they be from internal or external customers, is by early intervention and preventing the requirement for a customer to contact ACC and/or utilise a service in the first place.  If the demand does not exist, the Council can save the time and effort previously associated with handling and resolving the request. Specific interventions that can be utilised to reduce avoidable demand include:

- *Proactively informing the customer* – Keeping customers up-to-date regarding previous contacts via e-mail and SMS notifications, reducing the need for customers to contact the Council for simple / repeat updates;

- *Capturing information once* – Capturing all the information required to fulfil a customer enquiry or request during one initial contact using new technology, reducing the need for follow up contacts, either inbound from the customer or outbound from the Council;

- *Better information on the website and signposting* – Improving the quality and accessibility of information on the website, increasing citizen engagement and allowing customers to find the information they need without initiating contact with the Council;

- *Making existing service requests viewable to the public* – Making customer reports visible via the Council website, for example FOI requests or street based issues such as broken street lights, reducing the likelihood of customers contacting the Council to report it again / make a duplicate request;

- *Managing expectations and fulfilling promises* – Customers are less likely to make repeated contacts with the Council if their expectations are properly managed and any commitments made by the Council are fulfilled;

- *Streamlined and less confusing letters and forms* –  The simplification of letters and forms so that they are clear and easy to understand, reducing the likelihood that customers will contact the Council for advice or complete forms inaccurately;

- *Reducing service failure* – Identifying and addressing points of failure across the Council that generate significant contacts and workload; and

- *Anticipating demand* – utilising big data and predictive analytics to predict future service demands allows for early intervention and prevention of issues, and helps manage or mitigate against the demand occurring.

| | **Being Digital**<br>**Implementation Roadmap** | |
|---|---|---|

*Channel Shift* – For contacts that cannot be avoided, transitioning the contact to a cheaper access channel represents another approach through which savings can be delivered. The savings involved are considerable with face to face transactions seen as costing £8.62, telephone transactions £2.83 and online transactions £0.15 (source: SOCITM, Better Connected). Specific interventions that can be utilised to promote channel shift include:

- *Improving the Council's website / intranet and the customer experience of self-service* – The design, layout and functionality of the Council website and intranet is key for supporting customers to adopt self-service channels. Designing this 'through the customer's eyes' will improve its usage and empower communities;

- *Collect insight on use of self-service channels to improve effectiveness* – Websites can provide rich sources of insight on customer behaviour. Maximising the use of this insight is key for measuring success of channel shift adoption and identifying improvements;

- *Promoting self-service during every interaction* – Every interaction is an opportunity to nudge changes in customer behaviour. Staff should be trained to apply this principle, as well as feel empowered to suggests changes to help customers;

- *Incentivising customers to use self-service, promoting convenience and speed* – Promoting the 24/7 benefits of self-service and clearly communicating what customers can do for themselves will help increase uptake, including in-queue promotion whilst on the phone. Similarly, supporting residents to use PCs or kiosks at libraries and face-to-face customer access points will reduce the time they spend waiting and promote adoption; and

- *Restricting the availability of certain services in high cost channels* – Targeting or restricting channel access for certain transactions or certain customer segments can be used to drive customer behaviour. The graphic below outlines the steps that the Council can take to influence the adoption of self-service, up to and including mandating its use, once the basic building blocks have been put into place.

***Supply Related Benefits:***

***Reducing Activity & Improving Efficiency –*** In addition to better managing and mitigating the demand received by the Council, improvements can be made to processes and ways of working that reduce the amount of activity carried out on those activates that remain. Specific interventions that can be utilised to reduce the amount of time and effort expended by the Council include:

- *Enabling technology, integrating systems and establishing a single view of the customer* – Capturing information once and sharing it between systems removes the need for rekeying, while a single source of customer information reduced the need for staff to interrogate multiple Line of Business applications;

- *Stopping non-value add activity* – Removing non-value adding checking, reviewing, pre-processing or 'just in case' activities, and empowering staff to take on more valuable tasks;

- *Establishing up-front eligibility* – Where exclusion or qualifying criteria must be met, redesigning processes and using technology can bring these steps forward to reduce the workload carried out on non-eligible cases, and empower citizens to make decisions immediately about what services are best for them;

- *Adopting standard processes and standards* – Reducing unnecessary process variation, both within the same process delivered across multiple channels and across multiple, similar processes delivered across multiple services;

- *Robotic Process Automation (RPA)* – Utilising technology to automate mundane and routine tasks to release capacity that can be focussed on value add activities. Rules based processes can also be automated to improve decision making accuracy and processing times; and

- *Knowledge sharing and collaboration* – The use of tools to support more effective and efficient multi-service and multi-agency working, collaboration and data sharing, improving coordination and outcomes for citizens through early intervention. Open data will also encourage innovation and entrepreneurship in the city.

| | **Being Digital Implementation Roadmap** | |
|---|---|---|

# 4. The current position of 'Being Digital'

ACC has been working on putting the building blocks for Being Digital in place by implementing the Deliberate Plan. For example, the Council has moved away from the Lagan CRM product, the replacement CRM is already in place and key digital transactions have already been made available to customers. Pilots for a potential booking solution and parking permits have already met their success criteria.

The table below sets out the current position of those approved projects within the "Being Digital" strategy which are already under way and are on-going:

| Deliberate Plan | Project/Initiative | Current Position |
|---|---|---|
| Customer Experience Platform (CEP), including bookings and the new Website / Content Management System (CMS) | A digital facility where customers can log into an account and perform many common enquiries and transactions with the Council on a self-service basis. This includes the capability for customers to make bookings and a new central, modern and easy to navigate ACC website. This will help to facilitate *channel shift* through making the website more accessible, improving the customer experience and reducing the cost to serve. | The Council have implemented a basic CEP using a product called FirmStep, but this contract expires on 03/10/2018. Pilots for a new booking system have also met their success criteria. The current website based on Drupal/FirmStep is out of contract on 31/3/2019. The Council will need to make a decision on what to do in these three areas to maintain and improve a Customer Experience Platform after the contracts expire. |
| Master data management (MDM) | A capability which helps the Council maintain the quality of data and consistency between systems, and see a single view of the same customer across all systems. This will help to *reduce avoidable demand* by capturing customer information once, meaning that less follow up contact is required to obtain more customer details. | The Council has completed a number of activities to clarify its requirements in this area and needs to take a decision around what solution to implement in this area, an activity which is shown on the roadmap in section 9 |
| Your Desktop | Standardisation of all employee desktop environments across the Council to increase IT service standards and reduce support costs through *reducing activity & improving efficiency* | The 'Your Desktop' design has now been built and successfully deployed to a number of employees as part of the phase 1 rollout. Phases 2 and 3 will now see this rolled out across the authority. |
| Modern Workplace | Provision of Microsoft Office 365 to help employees across the Council collaborate in their work. This will again help with *reducing activity & improving efficiency* as staff will be able to work collaboratively, sharing information leading to less duplication of effort | Office 365 has been successfully deployed to a small group of Council users and a wider deployment across the Council is now planned, an activity which is shown on the roadmap in section 9 |
| Convergence | This involves introducing single customer and staff accounts to allow for the federation of core systems with other organisations such as Aberdeenshire Council and the NHS. This will help with both *reducing* | A design has been developed for identity management as the first stage of this journey, an activity which is shown on the roadmap in section 9 |

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| | *activity & improving efficiency* and *avoidable demand* as customers information will be shared between agencies leading to less need for rekeying of information by both staff and customers. | |
| Enterprise Private Cloud | This involves moving away from traditional Council-owned on-premise data centres and looks to obtain flexibility, functionality and cost saving benefits from moving to a cloud based model, reducing IT costs. | Most data and storage is already now held in a private cloud. This gives flexibility and scalability. The Council has also started work on the next steps in this journey, potentially moving towards a secure public cloud based model based on Microsoft Azure, an activity which is shown on the roadmap in section 9 |

This section has summarised the work done to date to implement the components required by "Being Digital" as set out in the Deliberate Plan. These building blocks provide the foundations for moving towards the target state architecture which we need to deliver the digital Council.  The target state architecture is described further in the next section.

# 5. The Target State Architecture for 'Being Digital'

A new technology architecture will be an essential enabler underpinning delivery of this strategy and to achieve the associated benefits outlined in section 3. This will be comprised of a mixture of the Council's existing technology estate, some projects and activities already in progress as part of the deliberate plan, plus the purchase of some new components including exploiting technologies included in the emergent plan. These elements will enable full benefit to be realised from the use of emerging technologies. The key technology components required to implement the Being Digital strategy are set out over the page.

The technology architecture required to deliver "Being Digital" is explored further in this section, and we explain for each component how this helps deliver the planned benefits. Note that the target state architecture will be refined further as implementation commences, so that as key component or procurement decisions are made these will be reflected in the documentation.

Of course, the target technology architecture must underpin improvement in the experience of our customers and staff and included in this section of the report are a series of targeted customer and staff journeys which the technology architecture will enable.
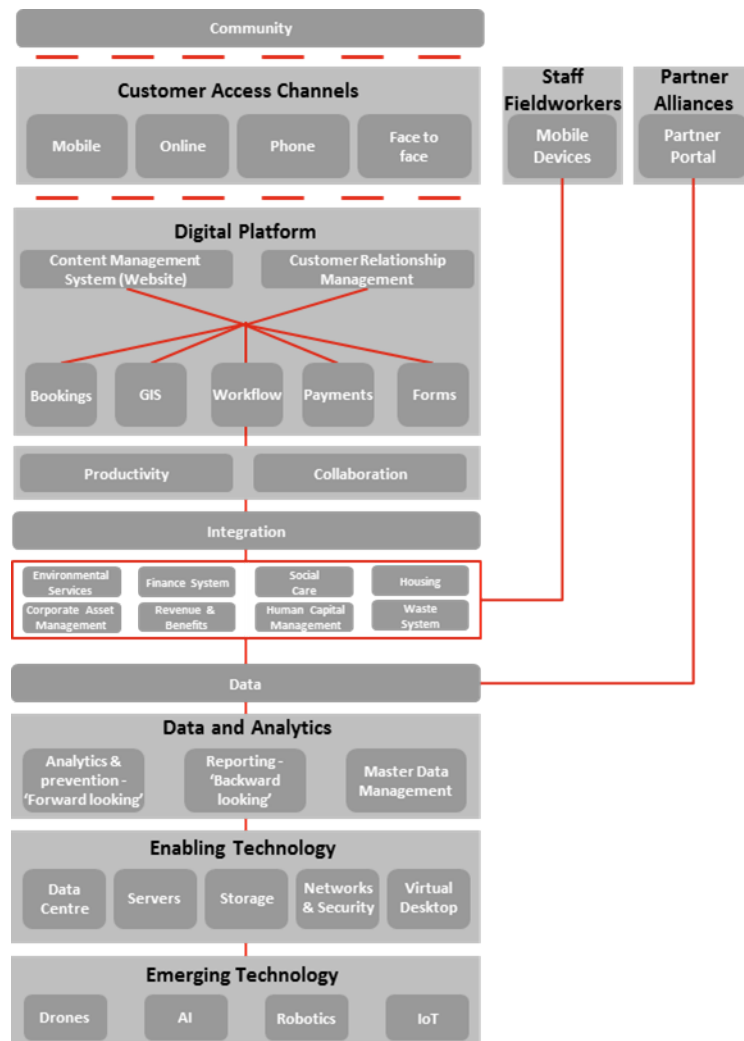
**Community:** Provision of a software component to act as a portal to connect local communities and as a first point of call for self-directed support. This component might be delivered by a separate dedicated application or form part of one of the other components within the architecture.

**Customer Access Channels:** Using the new website, customers can access Council services via a variety of channels with an increased emphasis on 24 hour self-service through a variety of devices including PCs and smart phones. Customers will be able to handle many more types of transactions with the Council electronically and track their progress through the Digital Platform. Use of social media as a channel will become the norm as will webchat and video conferencing. Existing access channels such as the telephone contact centre and face to face centres will remain, but given the greater functionality available and staff assistance for customers to use the digital channels we expect transaction volumes going through the digital channels to increase over time. This will lead to significant benefits through *channel shift*, moving customers away from the more costly Face to face and Phone channels and instead towards cheaper, digital ways of getting in touch with the Council.

ACC staff will then be able to spend more time and focus on providing a tailored approach to the most vulnerable and complex situations that exist within Aberdeen, e.g. homelessness and social care cases

**Digital Platform:** Digital will be the default channel for all information and advice. The platform will be mobile-optimised and provide a personalised web based facility through which Aberdeen residents, businesses, visitors & staff can access all of ACC's services – like logging into websites like Amazon, Tesco or eBay. We will provide a mediated and assisted support to those customers who may be digitally excluded to help them to help themselves. It also allows customers to track existing service requests. This will again draw significant benefit from *channel shift* as an improved web based facility will draw more customers from more costly channels due to its simplicity and convenience. Many of the platform components are already in place, however when combined with the remaining new technology being procured, these will be enhanced and offer customers much more functionality.

**Customer Relationship Management**: Provides a single view of residents and businesses and their transactions with the Council allowing the Council to capture information once. It provides a workflow capability to handoff and track work between teams and logs contact with all customers regardless of channel. This facilitates pro-actively informing customers, for example around status updates or local incidents or information. This will help to reduce avoidable demand by recording customers details once, avoiding the need to contact them again to clarify details. It will also avoid demand by proactively and automatically contacting and alerting customers, avoiding the need for the customer to get in touch.

**Content Management System:** This will be the tool used to create and manage digital content on both the external facing website and the internal intranet. The website will allow customers to quickly search for the services they need, as well as offer them an improved user interface. Internally, staff will be able to view the latest information from various services, helping them to provide customers with accurate information at all times.

**Integration**: A new component deployed to link different IT applications together to avoid re-keying and allow customer transactions to be handled seamlessly and efficiently across systems, allowing a true 'end to end' process. This means information can be captured just once and used across multiple systems, reducing activity & improving efficiency amongst staff by avoiding information having to be re-keyed as it moves between systems

**Line of Business systems:** Systems which are used by specific business units (e.g. housing and social care). The functionality in these systems tends to be very specific to the business units. These systems will work with the integration functions and the Digital Platform in reducing activity & improving efficiency for staff by creating a fully end-to-end digital process. A list of these systems can be found in Appendix 1.

**Data:** In an ideal world all data would be held in a single store, but this is unrealistic in local government. At most UK local authorities, master data is typically held and updated in back office applications, for example in social care systems such as CareFirst and revenues and benefits systems such as Academy. This data can then be extracted into a central store, for example a data warehouse or data mart where it can be used for historic reporting or predictive analysis. This data will be used by other components to drive efficiencies

**Data & Analytics**: These components support performance reporting, predictive analytics and master data management across the Council, and enable the Council's Business Intelligence Unit. Together they will reduce avoidable demand through anticipating times of high demand, enable more

efficient targeting of resources, enable early intervention to help the Council stop issues developing and also assist with reducing activity & improving efficiency through establishing customers eligibility for services up front.

**Enabling Technology:** Infrastructure such as servers, networks and storage on which the rest of the components rely, enabling the efficiencies that these components enable. A key component of this is an Identity and Access solution to allow users to move between multiple applications both on-premise and in the cloud using a single log-in and password.

**Emerging Technology:** These are new technologies such as Drones, Artificial Intelligence (AI), Robotics and Internet of Things (IoT) will enable to Council to continue to innovate delivering significant efficiency gains and improvements to staff and customer experience. These services will individually assist with channel shift (through enabling a better digital experience for the customer) and reducing activity & improving efficiency (through automating processes using AI or other technology).

**Staff fieldworkers:** Staff working in the field will be able to use their mobile devices such as smartphones or tablets to enter information on the go. This will assist with reducing activity & improving efficiency by reducing the amount of rekeying needed, as well as saving staff a great deal of time by making it easier to complete appointments, jobs or visits. Staff will also be able to engage customers in new ways, such as using videos with vulnerable users.

**Partner Alliances:** Partners will be able to share data with the Council, allowing both organisations to benefit from the insight that this provides, and make informed decisions and recommendations. This will also improve on the customer experience, as knowing more about customers and their areas will allow the Council and Partners to better serve their personal needs. This will reduce avoidable demand through anticipating demand from vulnerable customers, enable better targeting of resources, enable early intervention to help the Council proactively stop issues developing and also assist with reducing activity & improving efficiency through determining customer's eligibility for services up front.

## Customer Journeys

In order to illustrate the vision for "Being Digital", the next set of images show some future state customer journeys that could be possible should the future state architecture be delivered in full. These journeys are designed to show the end to end experience of each customer group. Although fictional, the characters for each journey have been created using real data about both the external and internal customers of Aberdeen CC, and represent the people of Aberdeen and the challenges that they encounter in their daily lives. They have been designed to show that although everyone has different needs and expectations of the Council, new technology actually allows this to be handled in a better way than ever before, without excluding anybody.

Each journey has been linked to the target architecture diagram, with the components being utilised in each journey highlighted on the left hand side, as well as under each stage of the journey.

The first customer journey sets out how "Being Digital" could offer a step change improvement in supporting members to assist their communities

**Member - 'I want to be able to help my residents and manage my portfolio'**

| 1 Visit ward | 2 Report issues | 3 Review stats | 4 Prepare insight | 5 Attend Committee |

**Cllr. Greg Harris**

*Councillor Harris is a member for The Bridge of Don. He wants to be able to access information about performance, as well as help his residents.*

**Technology Key**

- Community
- Customer Access Channels
- Digital Platform
- Integration
- LoB system
- Data and Analytics
- Enabling Tech
- Emerging Tech

Councillor Harris visits his constituents in the Bridge of Don, and spends the morning talking to them about their various concerns and issues. Before he sets off, he is able to view what issues have been raised in the area in the past week. Greg can see that there have been multiple bin issues, and therefore looks up data to prepare him for questions he might get. On site, he has his mobile device with him, he is able to show them a number of statistics about the area, and show them some of the work that the Council have been carrying out.

A number of the constituents want to a report an issue with flytipping in the area. Councillor Harris is able to report a Members enquiry on their behalf using his mobile device and the online form, and is able to link all the interested individuals to the case so that they will receive updates on progress, rather than needing him to keep contacting them. There are also some concerns about flooding in the area as there have been worrying weather reports, so Councillor Harris agrees to look in to what can be done.

When Councillor Harris gets back to the office, he looks into the flooding risk further. Using the Business Intelligence Unit (BIU), he selects data sets for his constituency around flooding, looking at historical data from both the emergency services and the Scottish Environmental Protection Agency. He overlays this data with another data set from the NHS looking at where there may be vulnerable people across the region, and is quickly able to see that his constituents were right, and a heavy rainfall could have some really negative consequences.

Using this predictive analytics data, Councillor Harris works with officers to prepare a report to Committee, hoping to gain funding for some immediate flood relief equipment, but also for a team to be able to put in place a long term plan to prevent future flooding. Alongside this, he would also like a new emergency plan to be developed to make the most of this new data, which would allow emergency workers to immediately support the most vulnerable in any flooding event.

The next week Councillor Harris attends the Committee meeting, and they review the findings as part of an interactive presentation. Using the data from the BIU, other members can clearly see the impact a severe flood would have on the area, and recognise that putting preventative measures in place now would potentially save the Council thousands of pounds, as well as reassuring the residents. Funding is approved, and Councillor Harris is happy to inform his constituents their concerns have been listened to.

| | **Being Digital<br>Implementation Roadmap** | |
|---|---|---|

The second customer journey sets out how "Being Digital" could impress a member of the public with easy problem reporting and rapid resolution

## Customer – *'I want to report a road traffic accident quickly and easily'*

**1** Witness RTA    **2** Go online    **3** Submit e-form    **4** Track progress    **5** Outcome

**Mr. Russell Hodge**

*On his way home from work Russell witnesses a road accident, which has left a lot of debris. He gets in touch to report the problem.*

**Technology Key**

- Community
- Customer Access Channels
- Digital Platform
- Integration
- LoB system
- Data and Analytics
- Enabling Tech
- Emerging Tech

On his way home from work, Russell witnesses two cars in front of him have a road traffic accident. The road is blocked, and a considerable amount of oil has been dropped. He wants to help get this issue resolved as quickly as possible, so after checking the people involved are not hurt, he heads on to the Council website to try to find a phone number to report this issue.

Russell goes on his phone and finds the Council's website, where he searches for traffic accidents, and is immediately signposted to the correct page. He reads the information and sees that this is indeed a Council issue, and that there is a simple online form. So he decides to report the issue using the online form available, as here he can provide more information, such as uploading a photo and using his location to update the map with where the issue has occurred.

Using the helpful pop ups and images to guide him, Russell completes the online form with ease. Here he is able to quickly enter the details of the problem, and most of the form is prepopulated with his details, and he is soon finished. After submitting the form, he receives a confirmation message to let him know that the report has been passed straight through to a crew, who will be on site as soon as possible.

Russell then logs on to his account and can clearly see that his report has gone through. The case status is showing as 'open', but quickly changes to in 'progress'. Russell realises that this means a crew is already on the way. As the emergency services have now also arrived, Russell waits in his car until the road is safe to pass again.

Russell soon spots that the crew are on site. They launch a drone to inspect the damage, and then go about fixing the road and making it safe.
He gets out the car to go and speak to the crew leader, and is informed about how long the work is likely to take, and thanked for reporting the issue. He's impressed with how quickly the team arrived, and is soon able to get back on his way. He later receives another update on his account that the job has been completed.

The third customer journey sets out how "Being Digital" could make life a lot easier and more efficient for back office teams

**Back Office Staff - *'I want technology to make it easier and safer for me to complete jobs and help people'***

| 1 Receive alert | 2 Receive Report | 3 Carry out work | 4 Update case | 5 View statistics |
|---|---|---|---|---|

**Mr. John Townsend**

*John wants to be able to complete his jobs with as little admin as possible, so he can spend more time serving customers.*

**Technology Key**

- Community
- Customer Access Channels
- Digital Platform
- Integration
- LoB system
- Data and Analytics
- Enabling Tech
- Emerging Tech

**1. Receive alert**

John works as part of the highways service delivery team, and has recently got a mobile device. This means that he can now receive any jobs on the device rather than go into the office to pick up job sheets, and it means he can now take his children to school before starting.

He soon receives an alert from two sensors connected to the Internet of Things that a streetlight has gone down and the road is damaged on Berryden Road, so he picks up his crew and heads off to sort the issue.

**2. Receive Report**

John and the team then receive a report from a customer from the same location. They realise this is a road traffic accident. John's first priority is to make sure it is safe for his crew to begin work, so he takes the drone out of the back of the van and flies it above the crash site. After a quick inspection, it is clear that there is no further risk to the crew, so they can begin cleaning up the oil and cleaning up the debris. John logs the case using his mobile device, changing the case status from 'open' to 'in progress' on Confirm.

**3. Carry out work**

Despite the vehicles involved having dropped oil for some time and created a large spill, the crew soon have it cleared up and are able to work with the police to reopen the road. They have also checked the other sensors in the area to make sure none were damaged, and all are still linked to the IoT.

Whilst on site they can also talk to members of the public, and who are impressed that the Council are fixing the issue so quickly, given that it only just happened!

**4. Update case**

Once the job is complete, John updates the case notes on Confirm to detail the work that was carried out. He also takes a photo of the completed works and uploads it onto the system. Once all this work is done, John is able to change the case status to 'closed'. At this point, he is able to pick up another case from the job list, and John and his crew move on to the next job.

**5. View statistics**

At the end of the week, John goes back onto his mobile device to take a look at his crew's stats for the week. He can see all the jobs that have been carried out across the service area, and is able to compares his team's performance against the others. The crew's have a bit of a competition going on, and being able to see all the data is making all the crews more efficient.

AI also uses the data to suggest to managers that preventative measures are put in on that stretch of road, as he can see there have been a number of accidents there in recent times.

| | **Being Digital**<br>**Implementation Roadmap** | |
|---|---|---|

The fourth customer journey shows how "Being Digital" could improve social care delivery and outcomes



**Customer - *'I'm struggling to look after myself, and I know I need help'***

| 1 Spot the Problem | 2 Go online | 3 Self-Assessment | 4 Visit | 5 Receive Package |
|---|---|---|---|---|

**Mrs. Barbara Jones**

*Barbara lives on her own in a semi-detached house, and is now struggling with the stairs. After feeling lonely and a fall, she realises she needs help.*

**Technology Key**

- Community
- Customer Access Channels
- Digital Platform
- Integration
- LoB system
- Data and Analytics
- Enabling Tech
- Emerging Tech

Barbara has recently had a fall at home, and was taken into hospital to make sure nothing was broken. Luckily, it's just bad bruising, but the incident has really shaken her up. The nurse recommends she look at getting help through social care, and her son David is also keen for her to have a look at the options as he lives far away. Barbara had previously been reluctant as the idea of going into a home really doesn't appeal to her, but she agrees to look at the options with David's help.

After being discharged from hospital, Barbara and her son head home. A few days later, David helps Barbara to go on to the Council's website to find out more information about Adults Social Care.
Here they are quickly able to read a lot of advice and guidance about what to do, and immediately feel reassured. They begin by looking through various options offered within the local community, and are shocked at how many community groups exist and how many suppliers there are. Barbara feels she needs more help, so moves on to the self assessment.

David and Barbara start completing the online self assessment form, but as they move through it, are a bit unclear on the different options available and what income she should report. Thankfully at this point a webchat box opens up, and an advisor asks if they require help. With the support of the advisor, Barbara is able to complete all sections of the form. Upon submitting it, she receives a notification that due to the result, she will be contacted shortly by a social worker to arrange a visit.

Barbara later receives a call from a social worker called Kelly, who is lovely and reassures her about the whole process. They book a visit for a few days time, and Kelly arrives on time. During the visit, Kelly explains how budgets work, and goes over each of Barbara's needs in more detail. Kelly shows Barbara and David various options on her tablet, and the videos and photos really help Barbara to understand. She is relieved to see many other options are available other than going in to a home.

Barbara selects to have a personal budget, and decides to get a number of options to help her continue living at home. She goes back onto the community marketplace and orders a mobility scooter, some adaptations to her home, meals on wheels, and signs up to a knitting club. Kelly keeps in touch to make sure she is progressing well, and Barbara feels so much happier getting back out into the community. All the steps have been really clear, and she feels much more comfortable in her own home.

| | **Being Digital**<br>**Implementation Roadmap** | |
|---|---|---|

The fifth customer journey shows how "Being Digital" could help a social worker efficiently deliver excellent service to clients



**Social Worker - *'I want to spend as much time helping people as possible, not doing paperwork'***

**Ms Kelly Wilson**

*Kelly is a new social worker at ACC, and is passionate about helping others. She wants technology to allow her to help more people in need.*

**Technology Key**

- Community
- Customer Access Channels
- Digital Platform
- Integration
- LoB system
- Data and Analytics
- Enabling Tech
- Emerging Tech

**1 Receive case**

Kelly receives a new self assessment form in the CareFirst work queue from Barbara Jones. She immediately knows that for her to have received this case, the scoring in the online form has meant that Barbara's needs require further support from a social worker rather than an alternative, preventative measure. The NHS have also flagged that Barbara has been in to visit, so Kelly looks through their information also. They have recommended a care package, so Kelly progresses the case.

**2 Prepare Offer**

Kelly quickly looks through the assessment which has been automatically loaded into CareFirst, and as she agrees with the scoring, pushes the case into the next stage. Artificial Intelligence within the system analyses previous assessments and what care was offered to automatically generate a potential care package offer for Barbara in seconds. Kelly checks through the offer, and feels it is appropriate. She contacts Barbara and arranges a house visit to discuss the options further.

**3 Visit**

A few days later Kelly attends the house visit where she meets Barbara and her son David. Kelly does her best to calm any nerves they have, and walks through the various options with them, explaining what the different terms mean. She uses her tablet to show them videos and photos of what options mean, and explains the suggested package from the system. After the discussion, Barbara elects to have a personal budget and go for many of the options Kelly suggested, making use of many suppliers in the community.

**4 Update system**

Kelly leaves the house and heads back to her car, where she drives to a local café. Here she connects to Wi-Fi, and updates all the case notes from the visit whilst they are still fresh in her mind. This also means she can spend quality time with her customers, rather than typing away during the meeting. She details all the notes and approves the package. She then looks through her diary and finds the next visit, and sets off to find the next house.

**5 Follow up**

A few weeks later Kelly phones Barbara to make sure everything is progressing to plan. Barbara lets her know that her mobility scooter has now arrived, and she's really enjoying her new knitting club and has made lots of new friends. It's great to hear such news, and Kelly is delighted the plan has worked. She updates the system with the latest info, and hopes that the success of this package allows the AI to keep getting better and helping more people.

| | **Being Digital Implementation Roadmap** | |
|---|---|---|
| Aberdeen City Council logo | | |

The sixth customer journey shows how "Being Digital" could make life easier for the public

## Customer - 'I want to report my wasp problem quickly and easily'

| 1 Spot the Problem | 2 Go online | 3 Submit e-form | 4 Track progress | 5 Treatment |
|---|---|---|---|---|

**Mr. Russell Hodge**

*Russell notices a number of wasps by the window of his flat, and realises there is a nest. He contacts the Council to get them removed.*

**Technology Key**

- Community
- Customer Access Channels
- Digital Platform
- Integration
- LoB system
- Data and Analytics
- Enabling Tech
- Emerging Tech

**1. Spot the Problem**
Russell arrives home from work and heads into his living room to watch TV. As he is sat there, he notices a buzzing sound coming from the window, and goes to have a look.
To his surprise, he spots a large wasp nest below the gutter, with lots of wasps flying in and out. Russell has never liked wasps, and wants to get them removed as quickly as possible. He searches for help online, and spots that the Council offer this service.

**2. Go online**
Russell goes on to the Aberdeen City Council website and logs into his customer account. Once logged into his account Russell can view his previous transactions with the Council, and start new actions. The clear navigational structure allows Russell to find the right place to find out more information about the topic quickly, and how best to report it. He decides to report the issue using the online form available.

**3. Submit e-form**
Using the helpful pop ups and images to guide him, Russell completes the online form with ease. Here he is able to quickly enter the details of the problem, and most of the form is prepopulated with his details, and he is soon finished. He is then able to book an appointment for the service, and pays online.
After submitting the form, he is provided with pre-treatment advice, and given instructions on how to track his request.

**4. Track progress**
A couple of days later, Russell wants to make sure that everything is still on for this appointment. He logs on to his customer account using his smartphone and views his previous transactions. Here he is able to see that everything is still planned for his appointment. This reassures him, and he doesn't need to phone up to find out more. Sure enough, the day before the treatment he receives a text reminder, and Russell is happy that the end is in sight!

**5. Treatment**
The next day the pest control operatives arrive to remove the nest at the agreed time. As Russell has completed all the pre-treatment advice, the appointment is quick and easy, and the wasps are soon removed. Russell signs to say the treatment has been completed on one of the operatives mobile devices, and is soon able to get on with his day. Later that night, he receives a confirmation email with all the details of the appointment, and a link to provide feedback.

21

| | **Being Digital<br>Implementation Roadmap** | |

The final customer journey sets out how "Being Digital" supports the contact centre teams to give an excellent service to customers



**Contact Centre Advisor - 'I want to use new technology to better serve our customers'**

| 1 Arrive at work | 2 Take a call | 3 Report issue | 4 Flag issue | 5 Attend location |

**Ms. Sarah McDonald**

Sarah wants to be able to access as much information as possible, so she can help customers who need it the most.

**Technology Key**

- Community
- Customer Access Channels
- Digital Platform
- Integration
- LoB system
- Data and Analytics
- Enabling Tech
- Emerging Tech

**1. Arrive at work:** Just as on any other day, Sarah arrives at the Contact Centre to begin her day. She logs on to her computer, and checks any emails she might have. She then goes onto the telephony system and CEP, and can see all the calls that have come in that day, and what is left in the queue.

**2. Take a call:** Sarah picks up her first call of the day. Mr Johnson is calling to get some help with his personal budget for social care. Sarah is able to view his previous interactions with the Council, and can see he hasn't been offered some community initiatives before. So she offers this to him, and updates the system accordingly. Sarah then receives a call from Mrs Mehigan, who wishes to report an issue with missed bins.

**3. Report issue:** Mrs Mehigan wishes to report an issue with her bins not being collected. Sarah is able to see on the system that the bin wagon should have gone down this route by now, so this is indeed a missed bin. Sarah informs Mrs Mehigan that she could do this online, but she would rather do it over the phone, so Sarah submits the request on Mrs Mehigan's behalf, books an appointment for the new collection, and the request is sent to the back office and bin crews via the in cab technology.

**4. Flag issue:** As call volumes drop off after the start of the day, Sarah moves on to the webchat system to help customers online. Sarah notices that a number of the enquiries are related to missing bins, and are from residents in a similar location to Mrs Mehigan. Sarah checks with back office staff and they have informed Sarah that there is a parked car blocking the street which is preventing the wagon from going down the street. Sarah raises this with her team leader, as well as informing the police.

**5. Attend location:** Sarah and her team leader agree that she should go to the location of the issue and help inform residents of what is going on, and how the Council will resolves the issue, as well as using social media to spread the news. Residents in the area really appreciate this level of service, as half of them hadn't even noticed a problem had ever occurred! This proactivity impresses them, and their relationship with the Council improves as a result.

When looking at the customer journeys as a whole, it is clear that to deliver these experiences for all customers, to deliver the digital strategy and to deliver target operating model, the full target state architecture is required. The following sections will examine what further work is needed to provide the architecture required to support "Being Digital".

# 6. Assessment of the Current Technology Architecture

In line with all other Councils executing a similar programme, the current state of the ICT architecture is not sufficient to support implementation of the digital strategy and customer journeys outlined above, and some enhancements will need to be made. The diagrams below show a high level assessment of the current state architecture based on ability to support implementation of the digital strategy.

An explanation for the colour coding of the following diagrams is as follows:

| Green | Component in place and currently considered fit for purpose to deliver the digital strategy |

| Amber | Some work to do to implement component or make it fit for purpose |

| Red | Component considered not fit for purpose or known gap which needs to be filled |

Activities to address the components flagged as red or amber will be included in the programme plan.

The narrative in the tables below explains how the status for each component has been determined.

The first diagram highlights those components assessed as "green".

## Community

### Customer Access Channels

Mobile | Online | Phone | Face to face

### Staff Fieldworkers

Mobile Devices

### Partner Alliances

Partner Portal

### Digital Platform

Content Management System (Website)

Customer Relationship Management

Bookings | GIS | Workflow | Payments | Forms

Productivity | Collaboration

### Integration

| Environmental Services | Finance System | Social Care | Housing |
| Corporate Asset Management | Revenue & Benefits | Human Capital Management | Waste System |

### Data

### Data and Analytics

Analytics & prevention - 'Forward looking' | Reporting - 'Backward looking' | Master Data Management

### Enabling Technology

Data Centre | Servers | Storage | Networks & Security | Virtual Desktop

### Emerging Technology

Drones | AI | Robotics | IoT

**Face to Face:** These are facilities where the public can transact with the Council in person. The Council has existing face-to-face customer access points at Marischal College, Mastrick, Kincorth and Woodside.

**GIS:** Geographic Information Systems (GIS) provide electronic mapping facilities to enable customers and staff to identify locations and associate actions with a specific map or asset location. A corporate solution based on the ESRI Arc Suite is in place. This solution is widely deployed across local government and frequently integrated into digital programme delivery.

**Forms:** A forms package allows customers to provide fill in information on the Council's website and via their mobile devices in order to apply and pay for things. FirmStep Forms is in use at the Council. This is a widely deployed solution in local government and many Councils are using it as part of their digital solution.

**LoB Systems (Social Care):** CareFirst is the key case management system for social care across the authority. It is considered by the Council to be fit for purpose but is under review regarding the long term direction of travel for this application.

**LoB Systems (Environmental services):** Flare is used for logging all proactive and reactive work of Environmental Health and Trading Standards. It is considered by the Council to be fit for purpose but is under review regarding the long term direction of travel for this application.

**LoB Systems (Finance system):** eFinancials is the Council's financial ledger system, and is considered by the Council to be fit for purpose.

**LoB System (Waste system):** BARTEC is the Council's waste management system, and is considered by the Council to be fit for purpose.

**Storage:** Electronic storage is required by the Council to hold customer, transaction and service information. In the data centre, storage is provided by BrightSolid. This arrangement is reported as fit for purpose. Over time it is expected that the Council will move storage into the public cloud (e.g. Microsoft Azure) rather than purchase addition storage within the data centre. This process is likely to take place gradually and the route for this will be clarified later in the programme as the ICT architecture is finalised.

The second diagram below highlights those components assessed as Amber (i.e.) some work to do to implement component or make it fit for purpose
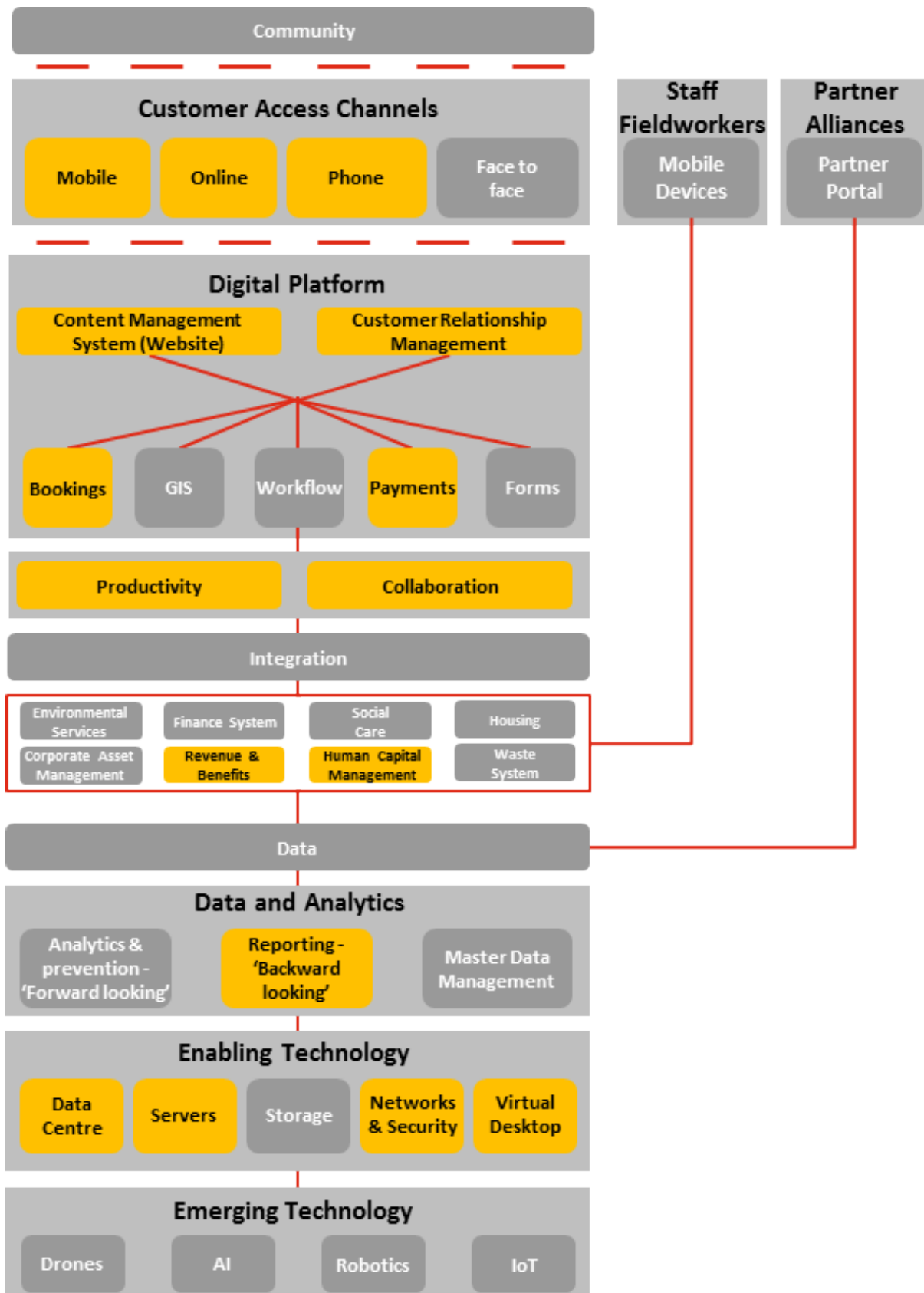
**Mobile:** This component allows customers to access Council services via their mobile devices, e.g. phones. The Council has made a mobile responsive website available which permits some customer transactions such as creating a customer account, paying council tax, paying rent, checking bin collections, viewing job vacancies, requesting housing repairs, checking bin collections, reporting missed bins, access to the library catalogue and information such as benefits and support available and school term dates. The site is thought to work smoothly but only covers a small range of Council transactions and this needs to be expanded.

**Online (ACC Website):** Allowing customers to transact with the Council via the Council's internet website is a key part of delivering the digital strategy. A refresh was successfully delivered in 2017 using Drupal and FirmStep technology. The solution is only licensed until 31/3/2019 and a longer term solution needs to be procured either based on the current or different technology.

**Phone:** The Council has a well-established phone contact centre based at Frederick Street which takes around 1m calls per annum. However, this only represents an estimated 30% of the total call volume across the Council and underlying phone systems are reported as struggling. Implementation of the Council's digital strategy would require the Contact Centre to cover a wider range of the Council's telephone transactions at a lower volume as customers take advantage of the improvements and enhancements to digital self-service. This is particularly vital with the introduction of Universal Credit, which will put extra pressure on the Council's call centre. The purchase of unified communications to provide high quality telephone connections over the corporate network has been investigated but not progressed at this time. The need for this will be re-examined alongside the Customer Relationship Management component which runs out of contract later this year.

**Content Management System (Website):** This part of the solution gives customers the ability to transact with the Council, including provision of a customer account and the ability to submit and track transactions with the Council. A solution is in place using FirmStep technology which covers a broad but limited range of key transactions in areas including waste and recycling, roads, environment, members' enquiries, Accord services and Council Tax with other services going live soon. The solution is licensed until 31/3/2019 and a longer term solution needs to be procured either based on current or different technology.

**Customer Relationship Management:** This part of the solution gives the Council the ability to handle and track transactions with customers. A simple CRM solution is in place using FirmStep technology which covers a broad but limited range of key transactions in areas including waste and recycling, roads, environment, member's enquiries, schools and revenues and benefits. The solution is licensed until 03/10/2018 and a longer term solution needs to be procured either based on current or different technology.

**Bookings:** This part of the solution allows customers to make bookings for Council services on-line. A pilot solution in place for bookings and payments has recently gone into testing across education bookings and parking. Following the pilot this solution needs to be confirmed, additional licences rolled out across the organisation and integrated into the other components, for example the Content Management System and the CRM.

**Payments:** This part of the solution allows customers to make payments for Council services on-line. A pilot solution in place for bookings and payments has recently gone into testing across education bookings and parking. Following the pilot this solution needs to be confirmed as the corporate

solution, rolled out across the organisation and integrated into the other components, for example the Content Management System and the CRM.

**Productivity and Collaboration:** These components enable Council teams to work more efficiently together, and to share documents and collaborate in joint working. The Council has run a pilot using Microsoft Office 365 developing Model Office Services and change management processes for the adoption of advanced toolsets and capabilities e.g. Office 365, Document Management, Media Analytics, Video and Teleconferencing. The solution makes available the latest collaborative ways of working to allow the business a quick and agile method to deploy new digitally enabled working practices. Following the successful pilot this solution needs to be rolled out across all business areas.

**LoB System (Revenue & Benefits):** Academy is the Council Tax, Housing Benefit and Council Tax Benefit administration system. It is considered by the Council to be currently fit for purpose. It is one of the key LoB systems which will be included in a future line of business systems review to confirm the Council's long term application direction.

**LoB System (Human Capital Management):** HCM is the Council's Corporate HR and payroll function. It allows for the creation and management of employees, set up of payroll and calculates required taxes and deductions. A project to replace the Council's HCM system is currently underway.

**Reporting – 'Backward looking':** This component supports performance reporting and performance management in the Council. The Council has some reporting products in place (for example Business Objects and Crystal Reports) but these have not been deployed corporately in a way which can support a data driven commissioning Council. A review of the existing products is required and there may be a need for additional components and/or deployment and training.

**Networks & Security:** This component enables the Council's systems to be connected and secure. Some issues around resilience and performance have been reported by the Council based on current applications and usage. The suitability will need to be re-assessed once the future state of technology is confirmed.

**Virtual Desktop:** This component enables the Council to provide all staff with a standardised and easier to maintain set of ICT applications. The Council has run a successful pilot and Phase 1 rollout across existing users in Bon Accord, Housing, CHI and Social Care. Phases 2 and 3 will see this solution rolled out across the rest of the Council.

**Servers:** These are the hardware components on which the Council's ICT applications sit, and are located in the data centre. They are licenced and managed by the Council. This arrangement is reported as fit for purpose for now. There is a planned activity to revisit this arrangement in the future as the Council has a long term intention to move towards using servers in the Public Cloud to increase flexibility and reduce cost.

**Data Centre:** The hardware components operated by the Council sit in a data centre which gives them the right power, connectivity, temperature and security to operation. The data centre is provided by a third party BrightSolid, and the facility is reported as currently fit for purpose. This will also be covered by the planned activity to evaluate a potential move to the Public Cloud in the longer term.

The third diagram below highlights those components considered not fit for purpose or known gap which needs to be filled.
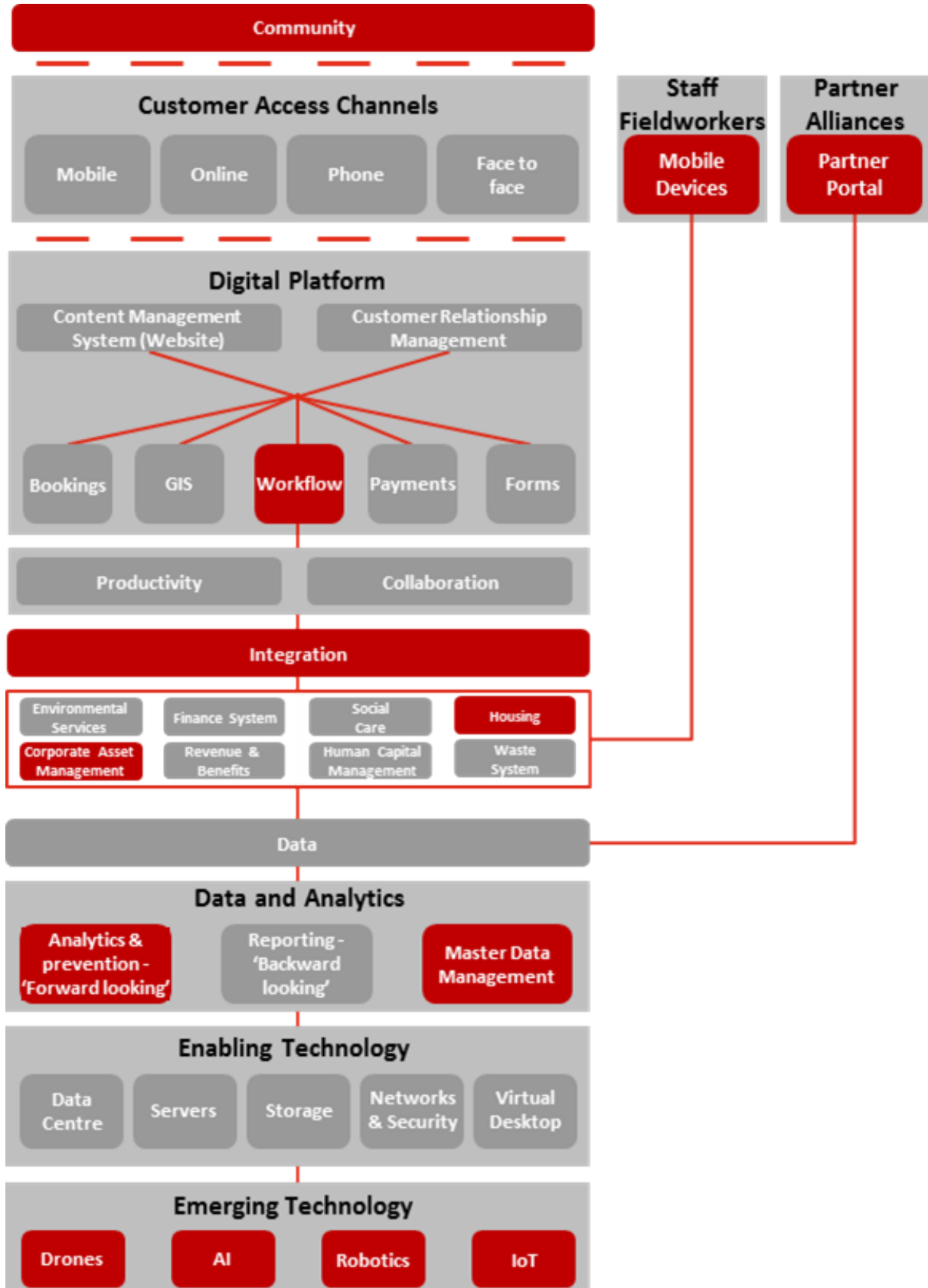
**Community:** The Council has some community contact databases but is missing the capability to support communities with "help to help themselves", for example encouraging the creation of community support networks, providing advice and signposting for, support around using digital technology etc. An additional component is needed to deliver this functionality.

**Workflow:** There is no enterprise workflow application in use and this is generally needed to implement efficient digital processes to allow work to be handed to/from Council teams. Some applications (for example FirmStep and CareFirst) offer limited workflow capabilities within each application but not as a Council wide capability.

**Integration:** At present the Council do not have a component to move transactions and data between applications. A few simple 'point to point' interfaces have been implemented but this approach is unlikely to be able to give the efficiencies and supportability required for the Council's digital strategy and a further component will likely be required to allow for full two way end to end integration (e.g. in waste this will allow crews to trigger updates for customers)

**LoB System (Corporate Asset Management):** Confirm is the Council's back office system for managing jobs on Council assets. It is considered by the Council to be not fit for purpose. It is one of the key LoB systems which will be included in a future line of business systems review to confirm the Council's long term application direction.

**LoB System (Housing):** iWorld is the Council's Housing system. It is considered by the Council to be not fit for purpose. It is one of the key LoB systems which will be included in a future line of business systems review to confirm the Council's long term application direction.

**Mobile Devices:** There is no corporate solution in place to support Council workers in the field at present. Some point solutions are in place, e.g. TotalMobile for Craftworkers and Environmental Officers, Property Repairs, Grounds and Highways.

**Partner Portal:** There is currently no solution in place to allow Council Partners to directly report issues onto the CRM.

**Analytics & prevention:** 'Forward looking' - Essential to managing demand and ongoing balancing of the Council's budget, this is currently a missing component although there are elements of the existing Microsoft product suite (for example PowerBI and SSRS) which will be assessed for suitability in due course.

**Master Data Management:** This component helps the Council manage data. The Council has a large volume of siloed, bespoke data stores and no way of viewing or consolidating data across the different stores. This is a gap in the current technical architecture.

**Emerging Technology:**

**Artificial Intelligence:** Councils can use AI to automate tasks, re-assigning basic administrative tasks from employees to computers, and taking over question answering, simple citizen facing roles. As an example, the majority of calls coming into a call centre are fairly basic, repeat questions or routine reports. By making use of intelligent chatbots, this frees up time for staff to focus on more complex tasks. This technology is currently not in use in ACC therefore a review of emerging technologies has been built into the "Being Digital" programme and we will look to deploy this technology within the Council where there is a business case to do so.

**Robotic Process Automation:** Robotic Process Automation has the ability to automate high-volume, repetitive tasks whilst learning from human users. Typical applications including automating high volume tasks such as signing up residents for direct debit payments, to indexing and assigning documents to specific workflows. This technology is currently not in use in ACC therefore a review of emerging technologies has been built into the "Being Digital" programme and we will look to deploy this technology within the Council where there is a business case to do so.

**Internet of Things (IoT):** The IoT enables a whole plethora of different devices, users, and systems to communicate and collaborate wirelessly via the internet using just IP addresses. The IoT is able to link and connect many different processes within one building through machine-to-machine interactions, improving operational efficiency right across a facility. As an example, IoT enables installation of smart meters within a building management system that connects to the electrical grid. This can provide valuable insights into how well the building is performing in its use of energy, which can be used to make cost-efficiency changes for the business. This technology is currently not in use in ACC therefore a review of emerging technologies has been built into the "Being Digital" programme and we will look to deploy this technology within the Council where there is a business case to do so.

**Drones:** Drones can be fitted with specific equipment that enables them to have a multi-use aspect. Survey data can be gathered with specialized cameras, while inspections can be carried out with cameras delivering real-time live feed back to the ground team. Gas sensors can also be mounted to a drone for air analysis and gas detection services. As an example, some Councils are already using drones to examine external cladding, detect heat loss and monitor lift shafts, or using infrared and x-ray images from drones to detect structural issues or dangerous leaks. Using drones for structural maintenance both reduces cost and improves safety. The Council has already started working with this technology by investigating the use of drones in inspecting historic buildings in the City Centre and the "Being Digital" programme will look for other ways to deploy this technology within the Council where there is a business case to do so.

With the Council currently undertaking a large digital transformation it is important to look at the role emerging technologies will play in the future state, and how they can be used to drive efficiency gains. Above are some examples of how the Council could utilise these technologies.

Reviewing the 'amber' and 'red' sections of the current state of ICT architecture alongside the architecture diagrams in the customer journeys highlights that there are a number of areas where further work is needed to deliver this future experience, and therefore implement the digital strategy, target operating model and achieve the associated benefits. The gap between the current and future state of ICT architecture examined further below. Further information on the current position of ICT in the organisation can be found in the appendices to this report.

# 7. Gap Analysis of the Change Required for 'Being Digital'

The diagrams above show that in order to deliver the full benefits mentioned in section 3, the Council will need to acquire additional components and complete a number of activities. Mostly these relate to the components shown as red and amber in the diagrams in section 6 above.

The following analysis describes each gap and the reasons why the Council need to close it. Activities to address these gaps are then identified in the Next Steps and Roadmap sections.

**Technology**

- **Community support application(s)-** Without this component the Council will not be able to engage and support Aberdeen communities through encouraging residents to set up and support on-line community hubs to share information, knowledge and experiences. This component has a key role in early intervention in enabling people to help each-other and building resilient communities.

- **Workflow-** Without this component the Council will not be able to effectively allocate and manage work between different teams, leading to inefficient processes, duplication of activities and difficulty in tracking progress on customer transactions for both customers and staff. Some of the Council's existing systems support workflows within a single system, and there is some limited workflow interchange between existing systems, but in order to deliver savings there needs to be a way to co-ordinate work efficiently across all Council teams.

- **Integration-** Without this component it will be much harder to be able to exchange data between systems resulting in an increase in inefficient activities for staff such as looking up information across systems or even rekeying information from one system into another. In some cases the Council will need the ability to integrate data and transactions across systems in real-time to support efficient and high quality customer transactions.

- **Mobile Devices-** Without investment in these devices the Council's staff will not be able to perform their duties as efficiently on the move, for example having to travel back to Council offices to record information and transactions rather than being able to update systems immediately whilst still out in the field. This also includes supporting the roll out of BYOD (Bring Your Own Device) which allows Council staff to choose and use mobile working devices which best suits their working practices, for example laptop, tablet or a phone/tablet.

- **Network and Security (including identity management)-** An additional identity management component is required to allow employees to utilise a single sign on across applications regardless of whether these applications are located locally or in the cloud and to permit ICT self-service for example password resets. This will have a positive impact on staff productivity. The Council has already completed initial work to identify a solution based on using the Microsoft Active Directory product already purchased through the Microsoft

Enterprise Agreement but will need to purchase additional licences and third party support to implement and deploy this solution.

- **Your Desktop**- The standardised Your Desktop build has already been created so the next steps for this are to deploy this desktop environment across the Council. The remaining rollout is targeted for completion during the rest of 2018.

- **Collaboration System (Office365)**- The Council's new collaboration suite has been successfully piloted and is being prepared for further rollout across the organisation. Deployment will take place on a phased basis because there are both technical and service based constraints which impact the rollout speed – for example the number of user mail files that can be transferred overnight and the number of users who can be supported through the business change process at any one time. There is a need to purchase an additional Premier Support package from Microsoft to support this process so that the solution can be deployed efficiently and in a timely manner. This is explored further in the next steps section.

- **Master Data Management**- A third party was commissioned to perform an MDM review and produced the following deliverables:

  - Detailed business requirements
  - Data quality analysis
  - Logical data model
  - MDM Solution architecture

  At this stage the council is currently evaluating whether the needs identified can be met through components already existing within the organisation, for example Microsoft. Depending on the results of this analysis the Council will need to either procure and roll out an additional product or initiate a further deployment of an existing component.

- **Reporting – 'Backward looking':** This component supports performance reporting and performance management in the Council. The Council has some reporting products in place (for example Business Objects and Crystal Reports) but these have not been deployed corporately in a way which can support a data driven commissioning Council. A review of the existing products is required and there may be a need for additional components and/or deployment and training.

- **Reporting - Analytics & prevention: 'Forward looking' -** Essential to managing demand and ongoing balancing of the Council's budget, this is currently a missing component although there are elements of the existing Microsoft product suite (for example PowerBI and SSRS) which will be assessed for suitability in due course.

  These components will give the Council the ability to perform predictive analysis of information held across systems, enabling the Council to take early interventions to try and prevent issues before they become established, as well as providing historic performance reporting.

  The gap to reach the target architecture in this area is likely to involve:

- Running of pilots to explore and test requirements for both backward looking and forward analytical analysis in order to be able to firm up the solution
- Testing of these requirements against existing ICT components within the organisation and potential solutions in the marketplace to determine if additional components need to be procured
- Confirming the technical design for reporting and analytics, ensuring that the design also aligns with relevant multi-organisational intelligence initiatives including the City Regional Deal.
- Confirming the high level organisational and process design for reporting and analytics – known as the Business Intelligence Unit
- Implementing the core backward looking reporting functionality
- Implementing the forward looking analytics and prevention functionality. This is likely to be incremental as will involve extracting data from many different Council systems, and ultimately data from outside the Council, into a central repository such as a data warehouse or data lake.

## Other Activities

This document is focussed on identifying the changes required in technology to deliver "Being Digital". However, to fully enable digital change, the organisation must look wider than technology. In order to deliver technology changes and achieve the full benefits described in section 3, the Council must fill significant gaps around KPI's, process, people management, organisational design and partners and alliances. These areas are currently not always designed with the idea of a 'Digital Aberdeen' in mind and additional activities will be required to enable the full scope of 'Being Digital' to be realised and for the organisation to be fully prepared for digital delivery.

## 8. Next Steps

The gap analysis section above identified a number of components which ACC needs to buy to enable the implementation of "Being Digital". This section sets out the specific actions which are required to address these gaps. At a generic level the following steps will be applied for each component:

**Options Appraisal**

This stage looks at the different choices the Council has to address the technology gap. This may include enhancing an existing product in use, or buying a new one from the marketplace. The options appraisal examines the advantage and disadvantage of each option and recommends one of the options, making a choice once this is ratified by the design authority.

**Procurement**

If the options appraisal recommends a procurement, a technical specification is drawn up for the component. A procurement process then takes place to select the best product under the Council's selection criteria, following the applicable procurement regulations. Often, the procurement might cover purchase of three areas:

- Software licences or fees for software as a service. This is the payment to be able to use the core technology product being purchased.
- Implementation services. These are services required to define and install the component, set it up to work at the Council, link it to other Council systems and perform testing to make sure it works. The level of implementation services can vary considerably between components. Some products have a low licence cost (or the Council may possess licences already) but incur a significant implementation cost, whilst other products may cost more upfront for licences, but have a lower implementation cost. It is important to consider the Total Cost of Ownership (TCO) for each component.
- Support. This is a service provided by the software vendor to help resolve any operational issues as they arise, provide regular updates to meet any regulatory changes, to add additional features and to help the Council get the most out of the component.

| | Being Digital<br>Implementation Roadmap | |
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## Implementation and rollout

Once the procurement is complete an implementation stage takes place to deploy the component into use. This will often involve technical build, testing and staff training activities before the component goes live. For more complex components implementation often takes place in phases to reduce risk.

Not all of the component gaps are at the start of this cycle, as work on some components has already started. The table below shows the immediate next steps required for each component.

The remainder of this section is divided into two parts: -

- the activities and funding requirements for the next three months to continue the implementation of the Being Digital Strategy; and

- a high level roadmap showing activities which need to take place beyond the first 3 months.

| | **Being Digital**<br>**Implementation Roadmap** | |
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| ABERDEEN CITY COUNCIL | | |

**Immediate Next Steps continuing implementation of the Deliberate Plan** Indicative costs are included in the table below, based on the experience of other councils undertaking similar activities as well as estimates provided by suppliers. These costs will be refined as a result of the required procurement exercise and will be reported back to the Strategic Transformation Committee.

| Component / Subcomponent | Activity | Delivery Approach | Estimated Cost |
|---|---|---|---|
| Digital Platform | The contract for the FirmStep Content Management System (CMS) expires in April 2019. The contract for the FirmStep Customer Experience Platform (CEP) expires in October 2018.<br><br>Technical Specification, options appraisal and procurement support (where required) in the following areas:<br><br>• Content Management System<br>• Customer Relationship Management, Workflow | Purchase of services via Digital Partner (PwC) as the Council has limited technical skills in this area. Assumed level of support will not exceed 20 days per area. | £30,000<br>£80,000 |
| Productivity and Collaboration | The Council's new collaboration suite, based on Microsoft Office 365, has been successfully piloted and is being prepared for further rollout across the organisation. There is a need to move to a different support package from Microsoft to support this process so that the solution can be deployed efficiently and in a timely manner. This different support package is also required for our increased usage of cloud | | |

| Component / Subcomponent | Activity | Delivery Approach | Estimated Cost |
|---|---|---|---|
| | technologies. This is explored further in the next steps section. | | |
| | Support - Replacement Microsoft Support Package (Unified Level 2) | Purchase of replacement software support from Microsoft | £60,000 |
| | Implementation services - enhanced internet connection to support the increased usage of the internet link which is used to access the cloud platform | Purchase of increased bandwidth from Internet for Business (IFB) | £13,000 per year |
| | Implementation services - development of Office 365 applications to support the business rollout (where each application is subject to a business case viability assessment before development commences) | Purchase of services via Digital Partner (Sword & Incremental) as Council has limited technical skills in this area | £200,000 |
| Data and Analytics / Analytics and Prevention – 'Forward looking' and Reporting – 'Backward looking' | Existing Enterprise Agreement with Microsoft does not give access to Business Intelligence suite of tools.  Through a digital partner we will access these Microsoft products and apply it two business areas to explore and test requirements for both backward looking and forward analytical analysis in order to be able to firm up a preferred ACC solution.  Following the application to these two business areas we | Purchase of services via Digital Partner (PWC) as Council has limited technical skills in this area | £80,000 |

| Component / Subcomponent | Activity | Delivery Approach | Estimated Cost |
|---|---|---|---|
| | will then seek approval for procurement of an analytical platform at a future meeting of the committee.<br><br>Assumptions: The Council takes a lead in project managing the pilots. | | |
| Data and Analytics / Master Data Management | There is no current technology solution for MDM. Technical specification, options appraisal and procurement support are required. | Purchase of services via Digital Partner (PWC) as Council has limited technical skills in this area | £40,000 |
| Enabling Technology / Network and Security | An additional identity management component is required to allow employees to utilise a single sign on across applications regardless of whether these applications are located locally or in the cloud and to permit ICT self-service for example password resets.  This will have a positive impact on staff productivity.  The Council has already completed initial work to identify a solution based on using the Microsoft Active Directory product already purchased through the Microsoft Enterprise Agreement.<br><br>Software licences - Purchase of additional Microsoft Enterprise software licences / upgrade of existing licences to match current user numbers | Purchase of the additional software licences through a third party supplier (purchase through third party intermediaries is a requirement of Microsoft) | £75,000 |

| Component / Subcomponent | Activity | Delivery Approach | Estimated Cost |
|---|---|---|---|
| | Implementation services - Technical support to implement and configure the required software modules<br><br>Assumptions: estimated costs from supplier based on an estimate of user numbers. | Purchase of services from a Microsoft implementation partner, as the Council does not have required technical skills | £30,000 |
| Total Spend for Immediate Next Steps | | | £608,000 |

The full set of activities is indicative only at this stage and costs are estimated in line with the assumptions stated.  There are activities which are dependent on short term decisions still to be made within the Deliberate Plan, for example where a technology component needs to be chosen.

| | **Being Digital Implementation Roadmap** | |
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## Wider Next Steps

This section maps out all post June activities and products that will need to be carried out in order to address the remaining gaps in the technology architecture. The section will also feature an evaluation of which tasks ACC can carry out using internal resources and activities that ACC are likely to require support from both their digital and other partners to complete. To explain this further a 'RACI' diagram has been used below with the following key;

**Responsible -** Who has been assigned the work?

**Accountable -** Who commissions and makes the final decision regarding the work?

**Consulted -** Who is consulted before a decision/ action is taken?

**Informed -** Who is informed after a decision has been taken?

| | **Being Digital Implementation Roadmap** | |
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| Component | Sub- Component | Activity/Product | ACC | Digital Partner (PwC and Incremental) | Other Partners (Full List Found in Appendix 3) |
|---|---|---|---|---|---|
| Community | Community Support Application | Options Appraisal | A | R | C |
| Integration | Application Integration Toolset | Options Appraisal | A | R | C |
| Staff Field Workers | Mobile Devices | Agree Mobile Strategy | A,R | C | |
| Data and Analytics | Master Data Management | Procure & deploy MDM | A | R | I |
| Data and Analytics | Analytics and Prevention- Forward Looking | Procure and deploy data analytic solutions | A,R | R | |
| Data and Analytics | Big Data | Big Data solutions assessed | A | R | |
| Data and Analytics | Big Data | Big Data prototypes designed | A | R | I |
| Enabling Technology | Networks and Security | Azure Cloud Transition | A,R | C | |
| Enabling Technology | Networks and Security | Network review following finalisation of solution | A,R | | |
| Emerging Technology | All | Review of Emerging Tech to support provision of digital service | A | R | |

The set of activities is indicative only at this stage.   There are activities which are dependent on short term decisions still to be made within the Deliberate Plan, for example where a technology component needs to be chosen.

# 9. Roadmap for the Implementation of 'Being Digital'

The way in which IT implementations are being undertaken both in the private and public sector is changing. There has been a transition from sequential waterfall approaches to developing systems towards agile software development. Older sequential development historically involved long lead times in developing requirements and building systems, resulting in a one stage deployment. Often go-live would be several years after commissioning the development, and requirements and business needs had changed.

In line with best practice it is recommended that the 'Being Digital' implementation follows an 'Agile' implementation approach, with regular, smaller and quicker releases demonstrating rapid progress to customers, employees and partners alike. This will feel very different to conventional approaches and experience at other Councils suggests that this change will take some getting used to, and needs to be supported by appropriate training and communications.

Digital implementation programmes typically start with a preparation stage which puts the key technology, people and process building blocks in place. In Aberdeen, part of this has already commenced through the implementation of the deliberate plan. Other work will need to be commissioned as part of the emerging plan and through addressing the components identified with status of amber or red.

Once the components are in place then rollout takes place across a range of services in the business through a series of phases. There are a number of reasons for using a phased rather than single 'big bang' deployment approach, including reduced implementation risk for the Council and being able to deploy a more agile development approach as recommended by the Government. In practice the sheer size of the Council, the number of business processes to be digitally enabled and the length of the build process means that the deployment must be phased.

To demonstrate how this Agile approach can be a success, the Council has conducted two pilots in Education Bookings and Payments for Parking. These have both been built using a rapid build agile implementation approach to increase the speed of delivery. These pilots managed to reach prototype solutions quickly and have paved the way for other, similar projects going forward.

Based on the gaps identified in Section 7, an initial roadmap has developed for the implementation of "Being Digital" as shown in the diagram over the page.

Initial timescales have been derived from:

- An initial view of critical paths and dependencies across the activities
- An assumption to phase the rollout to reduce risk by managing the level of change taking place at any one time for both business service end users and the programme delivery team

Following approval of this report detailed implementation plans will be produced for each workstream and component.

**Being Digital Implementation Roadmap**
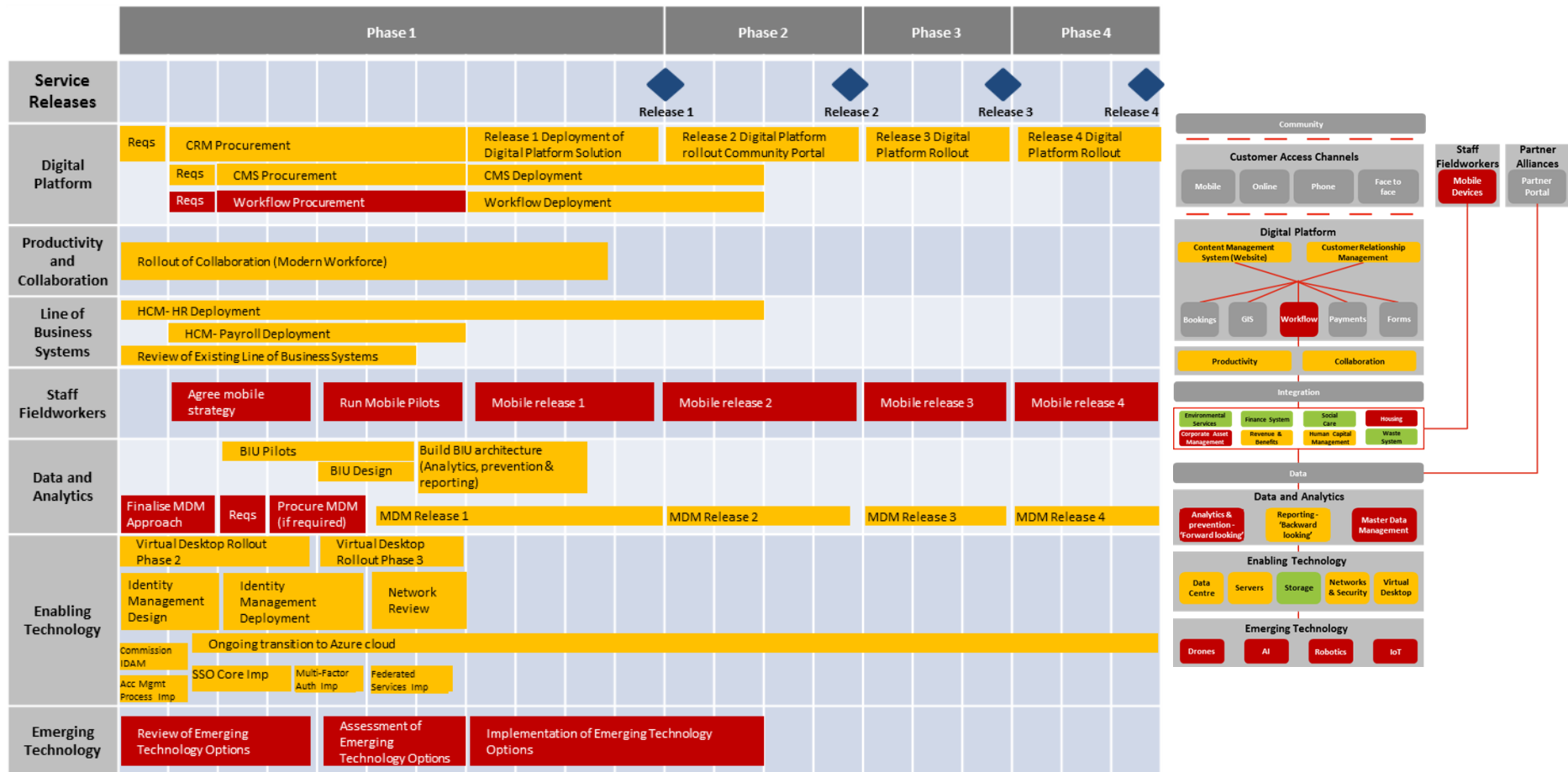
Each of these areas has been defined in the Target State Technology Architecture section previously. The Digital Platform is a key part of ACC's Deliberate Plan and will allow a platform for all customer contact, which can be changed to meet ACC's needs, hold data in one place, develop apps based in the cloud

and across all channels. The Digital Platform area will also be where the majority of Agile re-design will take place. This Agile process will involve taking a list of requirements from the business and designing and implementing the system in a series of short 'sprints.' This will allow for a product to be tested quickly and will ensure that the Technology solution will be ready for go live as soon as possible to allow for the maximum possible benefit and for the Council's 'Being Digital' vision to be realised.

Some components from the target architecture which have status of red or amber have not been included as part of this roadmap. This is because it is more appropriate to define their scope later in the roadmap, for example if their definition is reliant on another component being procured.

The Emerging Technology and Data and Analytics workstreams also form large parts of the Emergent Plan. The various technologies described in the Emergent plan will be developed and will play a large part in the digital re-design of services. These activities will explore technologies such as AI, Process Automation and Drones with the aim of providing Aberdeen with innovative solutions. The Data Analytics workstream will also provide the 'Big Data' that is featured in the Emergent Plan. This will allow Aberdeen to analyse large data sets to identify behaviours and utilise predictive analytics to help set budgets, priorities and spend for future, leading to a more efficient targeting of resources.

| | **Being Digital<br>Implementation Roadmap** | |
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# 10. Appendix

Either double click to open these files, or if they will not open on your PC please refer to the separate files provided with this report.

## 1.1 Appendix 1: Line of Business Systems

Appendix 1_As-Is
Information Systems I

## 1.2 Appendix 2: Being Digital - Digital Transformation Strategy

Appendix 2_ACC
Digital Strategy.pdf

## 1.3 Appendix 3: Technology Partners

Appendix
4_Technology Partner