

**Manchester City Council
Report for Resolution**

Report to: Finance Scrutiny Committee – 28 January 2016
Executive – 17 February 2016
Finance Scrutiny Committee – 25 February 2016

Subject: Draft ICT and Information Strategy 2015-18

Report of: Chief Information Officer and Deputy City Treasurer

Summary

This report presents the draft strategy for Information and Information, Communications and Technology (ICT) and Information for the Council over the period 2015-18. The strategy sets a vision and direction that supports the ambitions of the Council within the context of Greater Manchester, Public Service reform and devolution. A finalised version of the Strategy will be delivered in March 2016.

Recommendations

Finance Scrutiny and the Executive are requested to consider the draft ICT and Information Strategy as it relates to the Budget and Business Plan proposals for the Council for 2016/17.

Wards Affected: All

Community Strategy Spine	Summary of the contribution to the strategy
Performance of the economy of the region and sub region	The ICT and Information Strategy outlines approach to information sharing and digital platforms that will enable greater efficiency across public services and self-reliance for individuals. The Strategy underpins how the Council will deliver its priorities and budget proposals as outlined in the Manchester Strategy and Directorate Budget and Business Plans.
Reaching full potential in education and employment	
Individual and collective self esteem – mutual respect	
Neighbourhoods of Choice	

Full details are in the body of the report, along with any implications for:

- Equal Opportunities Policy
- Risk Management
- Legal Considerations

Financial Consequences – Revenue

There are no revenue consequences arising directly from the draft strategy. The medium to long term costs and options for ICT will be brought forward to Finance Scrutiny and Executive during the next financial year.

Financial Consequences – Capital

There are no capital consequences arising directly from the draft strategy. The medium to long term costs and options for ICT investment to Finance Scrutiny and Executive during the next financial year.

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Background documents (available for public inspection):

None

1 Introduction

- 1.1 This report presents the draft strategy for Information and Information, Communications and Technology (ICT) for the Council over the period 2015-18.
- 1.2 The strategy addresses:
 - the current drivers for change;
 - a vision for a better informed Council in the context of public sector reform and devolution;
 - information and technical principles;
 - the governance required to manage information and technical resources effectively while balancing the approach to risk and innovation that suits the appetite for change for the Council;
 - investment in appropriate delivery models and technical infrastructure to support business processes in ways that are secure, effective and robust, transforming the experience of people working with and within the Council.
- 1.3 The scope of this Strategy includes both the ICT Service and the Data Governance Team managed within PRI. It will outline how the two functions will work together to deliver enhanced support services based on access to better intelligence and data by digital means.
- 1.4 The Strategy will be further developed in line with the priorities set out in the GM Strategy, 'Taking Charge' the GM Strategic Plan for Health and Social Care, the Manchester Strategy and priorities as reflected in the Directorate Budget and Business Plans. The document is intended to provide a platform for the further work required and to inform the development of a longer term investment strategy.

2 Approach to strategy development

- 2.1 The subjects considered as part of this strategy are multi-faceted and complex, having regard to priorities across public organisation and the combined public authority. The Council faces significant challenges in addressing ICT and information issues however, the opportunity is to steer a direction that is beneficial for the Council and its ambition in the wider context of GMCA.
- 2.2 This report has been shaped with the Council's management team and in the context of the priorities for the Council, City and Greater Manchester. Further consultation will widen consideration of the emerging strategy, collate and consider improvements and bring forward a further draft for consideration at the beginning of the 2016/17 financial year.
- 2.3 The approach will be to make the development of strategy on information and ICT as transparent as possible and to harness ideas from multiple directions to ensure that the approach is supported, engaged and innovative.

- 2.4 The Business and Engagement function of ICT, alongside Data Governance colleagues will share the Strategy with key stakeholders and interested parties, including staff, Directorate leads, and partners in the period up to March 2016. This will ensure that the ICT and Information Strategy is robust and meets the ambitions of the Council and its partners within the context of Greater Manchester.
- 2.5 Widening the debate on the ICT and Information Strategy will strengthen the vision as set out in this report, and consolidate plans to realise the first steps by investing in improved information governance and processes while delivering fit-for-purpose technology that is scalable and flexible to meet the demands of the future.
- 2.6 The strategy will also address the business continuity and disaster recovery position to protect Council information and the systems that make it available for use, thus making the Council resilient in the face of adversity.
- 2.7 The strategy will be reviewed on an annual basis through the ICT Board to ensure that it remains business-driven and action-oriented during a time of change for the Council.

3 Strategic context

Profile of demand for services

- 3.1 By 2020 the population of Manchester is projected to be 578,000, with significant increases in children of secondary school age, a growing proportion of economically active adults and increases in older people aged 60/64-74 age group. The nature of the population is changing with more residents living within the extended city.
- 3.2 Pressures on adult social care will continue to grow. To continue to deliver to this cohort requires a step change in pace and reform of public services in order to improve outcomes with less resources. In the future, social care will be delivered to adults through an integrated approach to assessment in neighbourhood care teams with health partners. For children, specialist social care services could be commissioned through GM-wide Centres of Excellence.
- 3.3 Manchester has recently experienced the biggest economic growth outside of London with over 390,000 jobs now within the city and a further 44,000 new jobs anticipated over the next ten years. This has driven a demand for office space for skilled staff. However, unemployment remains for 53,500 residents who need to be supported to take advantage of the economic growth and reduce dependency on public services.

Council, Public Sector Reform and Devolution

- 3.4 Data sharing, pan-public sector intelligence and common ICT platforms are common themes in the business strategies driving the Council and the wider public sector partnership.
- 3.5 The direction of travel for the Combined Authority and specific initiatives like the integration of Health and Social Care will require consideration of interoperability across systems for the transfer of data and clarity about the requirements for data sharing. Work is ongoing to define the current opportunities.
- 3.6 The Manchester Strategy 2025 has five themes of a: thriving and sustainable city; highly skilled city; progressive and equitable city; liveable and low carbon city; and connected city. The subject of digital enablement runs throughout these overarching strategies, a key theme of the ICT and Information strategy.
- 3.7 The Greater Manchester Combined Authority's (GMCA) "Stronger together 2013-20" sustainable Community Strategy also provides context for improving social and environmental sustainability by combining business growth and success with public service reform including a focus on troubled families, early years, health and social care, employment and skills, and the justice system. This strategy relies upon an approach to information sharing and digital platforms that will enable greater efficiency across public services and self-reliance for individuals.
- 3.8 The government's austerity agenda has had an impact on the Council's funding and has necessitated a review of services in terms of the ways in which they are delivered, including the review of Core services. The devolution agenda and the progress of the GMCA will demand a continual review of how technology, systems and data are implemented to deliver greater efficiencies and savings.
- 3.9 ICT collaboration work has begun with Trafford Council, while some shared arrangements exist for elements of disaster recovery with Salford Council. Whilst the establishment of Greater Manchester Combined Authority is in its infancy, it is anticipated that as it matures a central ICT Leadership team capacity will evolve within its structure to set the ICT framework and principles that will underpin delivery in local authorities and partner agencies. This will be critical to the delivery of the Combined Authority's ambitions and accountabilities.

Council – Directorates

- 3.10 Key challenges underpinning the priorities and proposals for 2016/17 are:
- Implementation of the **Children's Services Improvement Plan** and the fundamental review of all public services to children across GM
 - **GM devolution of health and social care** supporting integration of health and social care in the city, including Mental Health.

- The **future role of schools** and the Council's leadership role
 - A shift to a **strengths-based model of assessment** which connects people with support available in and a strong relationship with the voluntary sector communities
 - **The opportunity to re-think processes** about project definition, analysis and execution. This would affect corporate processes such as HR, Finance, Procurement as well as other back office processes influencing directions in core management systems.
 - Developing **an holistic view of customers, communities and businesses** from a position of partial view to enable the appropriate model for service delivery from targeted service to universal provision. This would mean harvesting information from different data sources, ensuring better data quality and delivering better intelligence.
- 3.11 Growth and Neighbourhoods is facing pressures with a growing population and therefore necessary changes to waste collection to bring significant improvements to neighbourhood cleanliness and resident satisfaction. They will also be developing and managing city neighbourhoods within an environment of diminishing public funding, to ensure that services are joined up.
- 3.12 The Corporate Core is undergoing a fundamental review early in 2016 which will suggest a way forward to support the Council by driving leadership and reform; enabling the Council to function effectively, ensure good governance and accountability and deliver high-quality, customer focused services and value for money. Both Information and ICT Services are part of the Corporate Core. The information strategy will come together with the emerging ICT strategy and should be considered in the context of devolution, health and social care integration and the changing shape of back office support for Manchester and other GM authorities. Changing the internal operation of the Council's most commonly used systems and processes to increase productivity is a priority.
- 3.13 Business cases for change being put forward by Directorates (Dec 2015/Jan 2016) that show an increasing demand for stable, reliable technology that delivers innovation to business process.
- 3.14 The transformative and innovation potential for savings and efficient business is predicated on a resilient infrastructure and so plans previously agreed for investment in ICT are continuing.

Drivers for change

- 3.15 Drivers for change at the Council:
- **Digital by default:** efficiency, security and accessibility of information through digital media make it a pre-requisite. With process review this can transform the business and deliver better, cost-effective services.
 - **Reducing office space:** the estates rationalisation programme will return savings to the Council while increasing flexible working for staff.

- **Public and Staff expectations:** the public have a greater awareness of their rights to access information and staff need to be able to share information to deliver effective services internally and in partnership with others
- **Mobile and flexible working:** providing tools to allow staff to work where they need to rather than being office-based increases efficiency and reduces the need for office-space.
- **Legislation and regulation:** dual pressures for security of personal information with the need to make open data available to increase transparency. This is reinforced through regulation and inspection.

3.16 The convergence of trends in use of social media, mobile and consumer-driven technologies based in cloud-computing is having a huge impact on traditional business and public services alike, delivering new opportunities to innovate:

- **Social media:** people are sharing detailed information about themselves, the products they use, and how they like or dislike a service by reporting their experience online. Harnessing customer information through their use of social media allows organisations to better understand their customers, or potential customers, in ways never before possible.
- **Cloud computing:** increasingly cost-effective and easy-to-access data processing and storage are available through the internet and are becoming more prevalent in use both by individuals and organisations.
- **Mobile:** It is commonplace that people want to be able to access information and services, wherever they are located. Devices are used to communicate easily, enabling integration of work and non-work tasks while providing easy access to relevant online applications and information.
- **Internet of things:** The combination of technical capabilities provided through remote sensors connected via the internet to data intelligence hubs provides a whole new perspective on how technology can help to inform daily life. The Council and its partners has been successful in winning a £10m government-led fund to explore this smart city potential within Manchester under the CityVerve project, looking at .

3.17 The ICT and Information strategy will exploit the opportunities provided by disruptive technologies to enable the Council to be successful in its objectives. However, the ease of sharing information needs to be set in the context of legislation around the protection of personal information.

4 Information and ICT Services

Information Services

4.1 The Data Governance team in PRI was established in 2010, bringing Performance, Research and Intelligence closer to the management of the knowledge systems that underpin them.

- 4.2 A review of the Council's arrangements to exploit information and data as an asset highlighted inadequate arrangements and an urgent need for the Council to define what it requires in relation to:
- The vision of what is expected from the function
 - Clarity about the more formal role needed in the Governance of data standards and data quality processes.
 - Assessing the skills required to deliver the vision
 - Establishing the expected service level needed to deliver reporting outputs within expected timescales
- 4.3 This strategy defines an approach to address the identified issues to meet the needs of the Council and how the vision for the City and GM can be achieved.

ICT Services

- 4.4 Manchester City Council employees around 7,000¹ colleagues and supports over 400 different locations, which require ICT services. The infrastructure and application needs have continued to grow over the last 10 years and is complex and interdependent.
- 4.5 A successful ICT function is critical to enabling the delivery of the Council and City's priorities and budget strategy. Over past 10 months, the ICT Service has undertaken a stock take and identified critical priorities and gaps. The service has undergone a period of review and restructure, driven by the recognition that the service needs to adjust and invest to meet the current and future demands of the business. This review has delivered a new target operating model and a set of design principles to put the service on a transformational journey likely to continue for another 2-3 years.
- 4.6 The ICT Service has been on a journey to transform from early 2015. The stages of the journey are (see Appendix 2):
- Stabilisation and Investment (Jan 2015 – Aug 2015)
 - Transformation and Efficiency (Sep 2015 – Feb 2016)
 - Growth and Innovation (Mar 2016 – Aug 2016)
- 4.7 While these stages were identified initially as sequential stages, the reality of populating a new target operating model and a programme for upgrading the technical infrastructure driven by PSN compliance and security has shown that the stabilisation phase is likely to continue for a longer period. This means that the later phases will begin as planned, but at a slower pace. This approach ensures a robust platform for transformation and innovation.
- 4.8 The Council is on a path to transform its business, meeting challenging targets for savings, matching the growing expectations of the city's citizens and business, and building a city that brings opportunity to local communities, residents and business.

¹ ICT supports c.6,577 pieces of equipment (Desktop Computers, Wyse Terminals, Laptops etc.) -excluding, WIFI Services, Computer Screens, CAG Tokens, Printers, Fax Machines, Mobile, Desktop Phones and Tablets.

- 4.9 The ICT Strategy aligns to the Directorates' Business Plans. Increasing use of digital platforms by service areas will encourage the channel migration of customers to self service, increased participation and collaboration online, greater automation of process to ensure compliance through workflow and business rules, and the capture of good quality data and information.
- 4.10 ICT will be an equal partner with the Council's business areas to ensure that solutions are reviewed as part of the enterprise architecture and comply with Information and ICT design principles. This balances the requirements of the business with the need to deliver cost effective ICT-based solutions.

Combining Information and ICT Services

- 4.11 Together as support services, ICT and PRI provide the critical technical platforms, data reporting and insight that facilitate the Council's progress on its journey towards meeting its objectives at strategic and operational levels.
- 4.12 A combined ICT and Information Strategy, that includes the concerns of data governance, ensures infrastructure investment and software application strategies dovetail with the requirements to make data more readily available and accessible across services and other public bodies, suggests an improved stance for the Council on better information management.
- 4.13 The ICT and PRI Teams are at different states of maturity and investment in their strategic trajectories. The opportunity provided by this strategy is to align the strategic intent and achieve a greater impact.

5 Strategy – vision

- 5.1 This is a strategy that has the customer at its heart, with a vision: to be the most business-aligned Information and ICT Service in Local Government leading the way in technical innovation, data analytics and intelligence to support the Council in achieving its goals.
- 5.2 This vision centres on data and information as key assets to the Council with an ICT Service that supports the Council to nurture and utilise good information governance. The future success of the Council is founded on rich, multifaceted, 'real time' data that is available through self-service online. It is based on robust digital platforms required to deliver the power of information at the finger tips, delivered through easy to use technology in ways that are convenient, reduce bureaucratic processes and carbon footprint.
- 5.3 In terms of what this looks like in the future, it will mean:
- Customers being delighted by accessing Council services that are a pleasure to use because they anticipate the customer need. Payments, bookings, view off accounts are available online, are intuitive and can be viewed easily on mobile devices. The customer is empowered to influence service delivery so that they get closer to what they need.

- More of citizens engage in the democratic function by participating through social media and becoming part of virtual as well as geographic communities, exercising their ability to develop communities of interest to improve quality of life.
- Council employees empowered by being able to access Council and other information through mobile devices so that they can work seamlessly from Council Office to partner offices to public meeting spaces. Access through WIFI is secured so that information is protected and is readily available. Universal Access is delivered to enable all staff to be supported through online Council information and self-service through the internet.
- Council managers enabled to view summary statistics on performance through easy to read dashboards available online with an ability to drill down to the detail. Data is good quality and available through powerful tools for managers to query customer demand and use of services over different time periods and across geography. Modelling of customer behaviour or demand helps to inform policy, procedures and the targeting of service delivery.
- All Council staff will be more aware of their responsibilities around data and information, from the security of personal data to the value to the organisation of accurate, timely data. The workforce will become increasingly skilled in managing data and information to maintain its value. ICT literacy will be essential. Monitoring of systems access will be standard practice to ensure security of information and compliance with legislation.
- Working closely with partners on shared data to be able to spend the public purse in a way that is targeted and appropriate. Shared customers receive an holistic service from across the public sector. The move of a person from one public service provider to another is painless and seamless with no confusion across providers or double entry of information, for example, when an older person with caring needs moves from a hospital back to their home and the care of their GP and community nurses.

5.4 This strategy will address both how Information and ICT can work with services to develop the ICT requirements to deliver their priorities. The work outlined to develop clearer service standards and SLAs (Service Level Agreements) will also more clearly define the roles and responsibilities of ICT. Services need to be clear about priorities and the specification required, but ICT should be responsible for evaluating options, and bringing forward what through evidence is considered the most robust and efficient solution.

5.5 One of the key projects over the next few months - other than ensuring effective and proportionate resilience and disaster recovery capability is the review of the core corporate management systems including the council's processes for HR, payments etc. This will be a major opportunity to re-think processes about project definition, analysis and execution and ICT will play a major role in this work. Intelligent use of technology is one of the keys to taking bureaucracy out of the core processes.

- 5.6 One of the biggest reform challenges the council faces is the support to the Health and Social care reforms where ICT will work closely with the Children and Families Directorate, Health Partners and the Corporate Core to develop the ability to share patient records and delivery inter-operability with partners' systems. These requirements will need to form part of the developing Locality Plan. The requirements to support critical parts of the reform agenda such as work and skills will also need to be developed and defined.

6 Strategic objectives

- 6.1 Flowing from this vision are the following objectives for the service:

Deliver a stable, robust, customer-focused and quality-driven ICT and Information service.

This will be done by:

- Being customer-focused in the delivery of quality ICT and Data services and being pro-active in supporting the business in its priorities
- Delivering cost effective and value for money ICT and information services and reducing the unit cost of basic information tools and intelligence for the Council
- Retaining an engaged and motivated team who are skilled and continually learning
- Providing a stable and reliable ICT infrastructure that is secure, robust and fit for the future ambition for the Council and the communities that it serves

Support innovation and business transformation through the better use of information and technology.

This will be done by:

- Streamlining business processes and deliver innovation in business practice through the implementation of common technology platforms and automated workflow
- Promoting self-service through the use of easy-to-use, personalised and universal online services for staff and customers
- Improving work-life balance and reduce the office and carbon footprint by supporting anytime, anywhere working through mobile technology
- Working in partnership across Greater Manchester to facilitate appropriate data sharing and delivery of support services to meet the devolution agenda

Delivering value, managing risk and forecasting demand to the Council by managing data and information as a valuable asset.

This will be done by:

- Managing data and information as a valuable asset, with appropriate governance to control information risk.
- Developing business intelligence tools to support effective decision-making.
- Data Governance and the ICT Service working jointly on the strategy

7 Service Design Principles and Target Operating Model

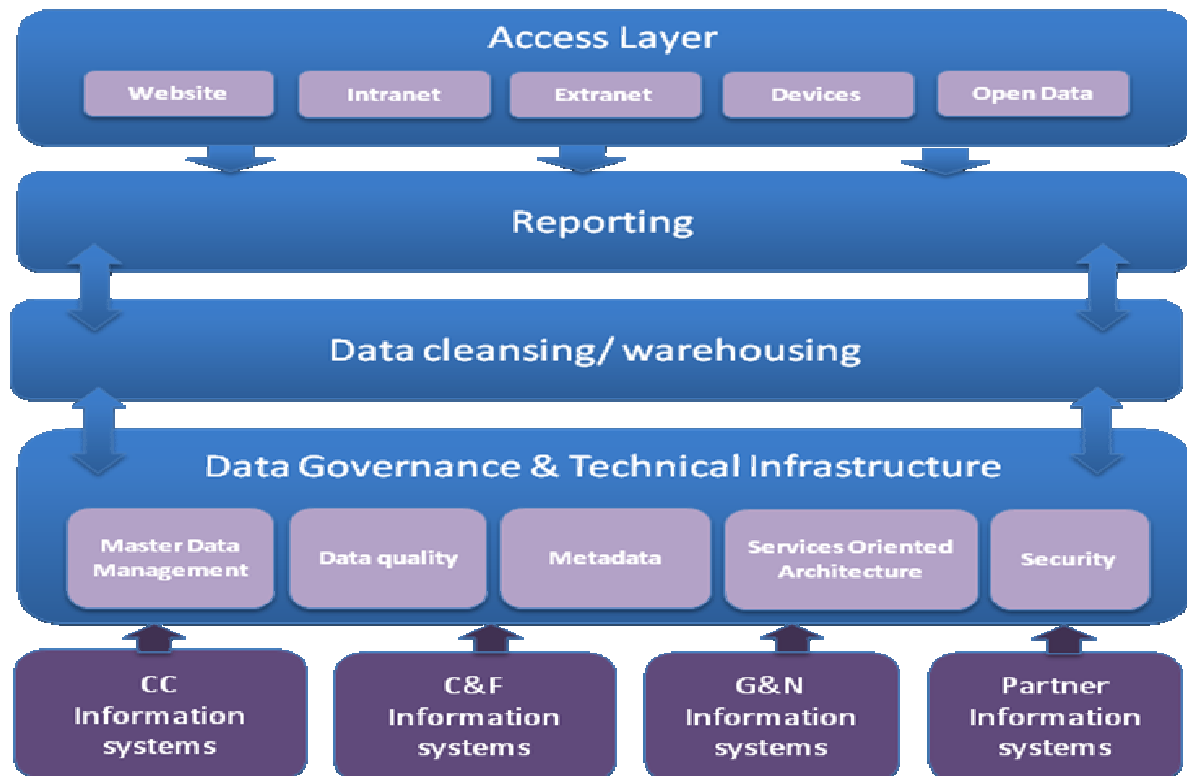
- 7.1 The target operating model for ICT is based on Service Design principles (Appendix 1) and reflects functions with enhanced focus on:
- business engagement at a senior level
 - knowledge management and business intelligence
 - centralised ICT design across the Council enterprise based on architectural principles
 - formalizing quality service operations
 - controlled and prioritisation of project delivery and
 - increased focus on supplier and contract management
- 7.2 The structure includes a dotted line to the Head of PRI to ensure data and information are as salient as hardware and kit.
- 7.3 The ICT operating model will facilitate improved communication between ICT and customers, providing transparency of how services are provided and embed knowledge of the business at heart of ICT provision.
- 7.4 Given the ambition set out for better information management, specific skillsets and resources will be needed to meet the likely areas for demand. This means that existing role profiles and skills requirements will need to be reviewed, updated and re-evaluated.
- 7.5 The Data Governance function in PRI currently has the following areas of responsibility which will need to be maintained:
- Maintenance and Preparation of Specific Data Sets - People and Spatial Data
 - Open Data /Publication of Data
 - Data Governance and Standards
 - Data Reporting
- 7.6 Based on the vision for how data management should operate within the council and an analysis of current responsibilities an operating model has been designed. This builds on existing capacity and capability to extend resource in the areas identified, specifically focusing on:
- People data – new requirements of master data management
 - Spatial data – reinstating lost capacity to develop map-based reporting
 - Open data - as a new requirement
 - Data management – a new emphasis for strategy team
 - Corporate projects – e.g. reporting from SAP
 - Data preparation – improving data quality
 - Data reporting – to be proactive in reporting to support the business
- 7.7 The business case for developing an operating model would need to be viewed as part of an investment strategy in better information services for the Council and will be brought forward for consideration as part of the ICT and Information Strategy within 2016/17.

8 Delivering information as an asset

- 8.1 The ambition across the City and Greater Manchester is to connect residents to the opportunities growth provides, improving customer outcomes and supporting the long term ambition for GM to be financially self sustaining. To deliver this ambition the reform programmes seek to effectively integrate services so that they better meet the needs of individuals, families and communities. Data sharing is one of the mechanisms that enables an integrated approach to reform. To develop this requires:
- Clear accountability for leading information sharing and building trust and confidence between residents, communities and local services
 - Increase and manage secure accessibility of data and information
 - Utilise modern and flexible methods and technologies
 - Drive a single comprehensive view and common understanding of data and the approach to sharing
- 8.2 In practical terms this means for example the ability to access shared patient records, inter-operability with partners systems.
- 8.3 To achieve this vision there needs to be the capability and capacity to deliver governance and insight by providing information governance and to deliver enabling technology that can bring the information and intelligence together in a meaningful way. This means building the capacity and skills both at GM and local authority level. At a GM level there is work with CLG to develop an approach for intelligence sharing and a CA Data Sharing and Collaboration Roadmap is being developed.
- 8.4 There also needs to be an increased focus on intelligence as an asset. The Corporate Core will require unrivalled knowledge and intelligence about the people and place of Manchester as the key to steering public services to deliver the right outcomes for the City's future. Extending the Troubled Families data set and developing intelligence solutions such as iBase and GIS will be key to this, bringing together spatial and people data in ways that are meaningful.
- 8.5 This strategy goes on to set out the work that is required by the council to ensure that the capability and capacity is in place.
- 8.6 The Council holds extensive stores of data. This is a valuable asset, the transformation of which could allow the Council to:
- Make better decisions based on data from individual cases up to major strategic and policy matters.
 - Increased data sharing and analysis to deliver cross-service, pan public sector insight on specific issues e.g. troubled Families.
 - Provide management information, to demonstrate the effectiveness and accountability of the Council.
 - Provide management information to identify and drive the delivery of efficiencies and service improvements.
 - Work collaboratively across public, private and voluntary sector organisations to build true partnership across to support the Greater Manchester agenda.

- Drive commercial activity e.g. opportunities provided through the publication of Open Data.
- 8.7 Currently the processes to deliver information from data are cumbersome and resource intensive. Through investment in data governance and data ownership, the quality of data held will improve. Through better technology and processes, the user directly in ways that are fit for purpose and provided in the right place at the right time in the right way can access information.
- 8.8 The way forward, supported by findings of an independent review, is to:
- **Implement a change management approach to enable business stakeholders to be owners of data quality** - Exploiting information and turning it into knowledge fundamentally stems from accurate, timely and efficient data entry. Proposals for Data Governance include support to Directorates in progressing improvements in data quality. Having business stakeholders accepting their accountability is the critical driver for effectively utilising that support.
 - **Implement a governance model to coordinate cross directorate/service initiatives to exploit information** - Many of the challenges faced stem from a lack of clarity of accountability and responsibility to drive improvement, focused on priorities.
 - **Deploy a set of best practices, and improve the information and data architecture design methodology** - to ensure that data is captured, handled, analysed and transferred in the most effective ways.
 - **Design a new structure aligned to the MCC vision and ambitions** – effectively to establish a corporate function to make data available for strategic, analytical and research purposes.
- 8.9 Specific areas for development include the following (Figure 1, further detail in Appendix 3):
- Better **data governance** to improve the approach to controlling, planning and enforcing management of data assets
 - Implementation of **master data management** in order to improve understanding of data assets
 - Embedding **data quality practices** into business processes
 - **Data integration** to ensure multiple use of key data
 - **Data warehouse/marts** to deliver a single source of the truth from multiple sources
 - **Analytical hub** to perform advanced analytics and predictive modeling
 - **Operational databases** as primary sources of information managed by data owners who will ensure data quality
 - **Integration** of data to provide combined insights
 - **Reporting** to deliver business intelligence at enterprise or operational level, with self service capability
 - **Access** to be made available more widely through ICT tools and internet

Figure 1: Information architecture to deliver quality data



9 ICT Technical Design Principles

9.1 ICT is taking an architectural approach to the design of technology to support the Council's basic business (Figure 2). A direction for common platforms reduces complexity in ICT provision therefore providing the best value technical tools available to the business.

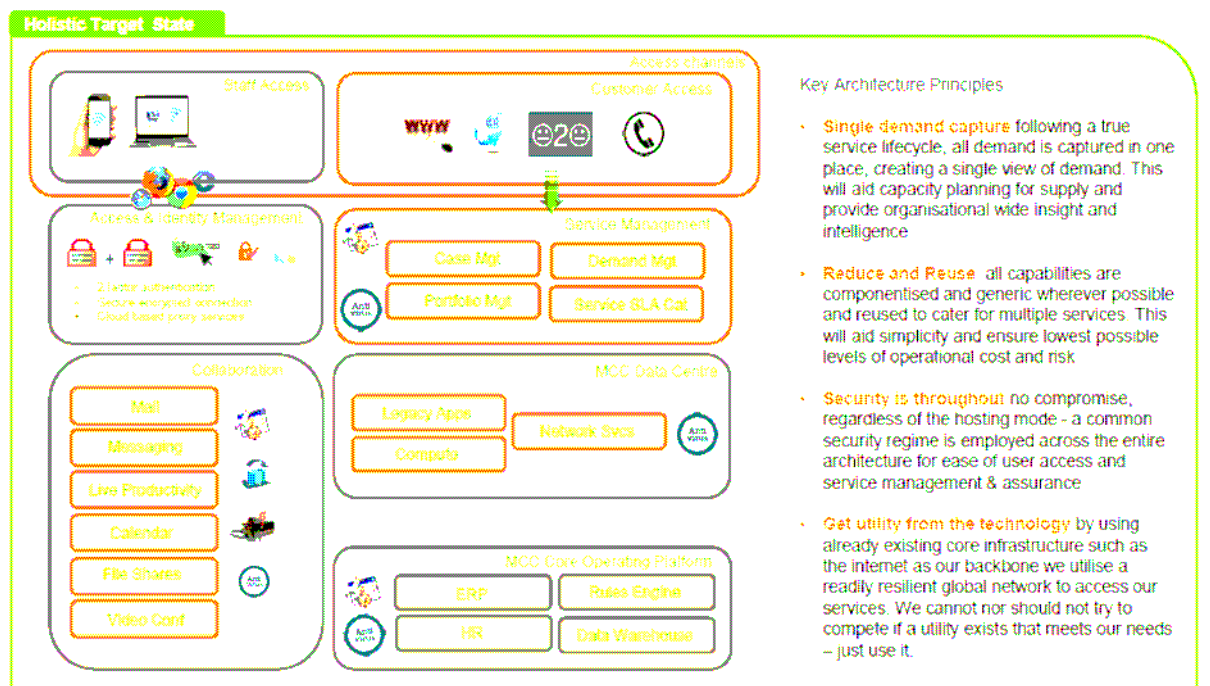
9.2 The high level ICT Technical design principles that have been agreed are:

- The principle of ICT is to "Buy not Build" technical solutions
- ICT delivered solutions will be kept "vanilla" or "standard – out of the box" wherever possible
- Upgrade and maintain systems to N-1² where there is a business case
- Any device, anytime, anywhere
- An agile small change capability will be established for low level rapid business change to happen effectively
- Data Centre Hosting services will be provided by a hybrid model to deliver best value and business continuity/disaster recovery
- Design solutions with the broadest community in mind e.g. Greater Manchester

² N-1 refers to the commitment to invest in technology to at least the version behind the latest release to ensure optimum capability and compliance with security requirements

The detailed principles of design are in Appendix 4.

Figure 2: Target ICT Architecture – Common Platform



10 Investment in ICT and enabling savings

10.1 Up to £9.5M has been made available during 2015/16. This investment is predicated on delivering savings for the Council based on better internal processes, consolidating ICT contracts to gain better value and supporting the business to transform through automation of processes and digitising information to support self-service in information and transactions. Further funding of around £10m pa for the next 3 years has been profiled to ensure that ICT infrastructure continues to be up-to-date and secure.

10.2 The main financial goals of the ICT Strategy will be to:

- Continually review and reduce costs of standard ICT supply – per unit costs
- Remove redundancy in technical capability and ensuring value for money from ICT suppliers
- Leverage significant savings and income generation potential within the wider Council business through investment in automation of processes, self service capability and mobile working. ICT solutions should not be used to automate poor process. Challenge to business processes through lean thinking will be a fundamental element of ICT solution design and implementation.
- Enable greater efficiency in the business through mobility of staff with the capability to be linked back to Council information systems
- Drive out saving through collaboration across GM and leverage government frameworks procuring a GM solution where appropriate

- 10.3 Further investment will be required to support the implementation of a new approach to Data Governance to enhance existing resource to build capacity in this area. Plans to invest in ICT will support this skilled team to deliver enhanced data quality and reporting. An investment case will be presented at a later date aligned to the principles set out in this strategy.

Investment in ICT Systems

- 10.4 The investment in technology reflects the combined aims of the Council lines of business with advantageous investment or extension of core technical platforms. The aim will be to consolidate investment in ICT and to gain the maximum value from a smaller number of platforms. The platforms will also provide the flexible, mobile and collaborative environment that is expected as part of a modern business environment (Table 1).
- 10.5 The key project areas include ensuring compliance with government security standards through PSN, upgrading the key social care case management system, implementing a better IT service management tool, and an email collaboration platform that will enable modern and mobile working practices and upgraded and updated infrastructure.
- 10.6 The roadmap will be underpinned by the development and agreement of rules that govern data.

Table 1: Initial projects and business case status for 2015-16

Project	Definition	Date of submission of business case
Compliance (including N-1 programme)	Upgrading and replacing infrastructure to ensure compliance with PSN (Public Service Network) requirements	Elements from Nov 2015
Upgrade Frameworki (MiCare) to Mosaic	Upgrade to the core Social Care system	In implementation
Upgrade ONE system	Upgrade to the core Education system	In implementation
Service Management	Implementation of IT service management tool to enhance ability to manage assets, incidents and service levels. Potential for a generic case management tool for other services	Dec 2015
Email/ collaboration	Email and collaboration platform to upgrade the current capability and enhance mobile working	Mar 2016
Data Centre/Disaster Recovery	Improved position on DR and BC to ensure minimum disruption to service	Feb 2016
Applications	Necessary upgrade to systems related to the	Mar 2016

Project	Definition	Date of submission of business case
Upgrade	windows 7 desktop rollout to ensure currency of applications and secure PSN compliance	
Communications Room upgrades and rationalization	Improvements to the communications estate to improve capacity, performance and security.	Jan 2016
Infrastructure and Mobile Working	Enhanced capability for mobile working post desktop review. Supporting the anytime/anywhere working.	Sep 2016

11 Sourcing and resourcing strategy

11.1 The ICT Service will use a blended model for delivery including the use of in-house resources, contractors (for flexibility) and managed services. The relative mix will depend on the nature of service being delivered by ICT and the value for money imperative. As a general principle, Council staff will support service operations or business-as-usual services while time-limited development work may require external skills through contracting.

Our staff and collaboration

11.2 Skilled and engaged staff are a necessary precursor to success in ICT delivery. The ICT and PRI Services are committed to developing staff to ensure that their skills are up to date and relevant to the local environment. All staff have performance targets linked to strategy, with annual reviews and training needs assessment related to their objectives. Regular communications keep staff up to date with weekly stand ups and management meetings.

11.3 Talent management will ensure continued staff engagement and commitment to succession planning.

11.4 The PRI and ICT Service are committed to supporting initiatives to up-skill Council staff in their use of technology to ensure that they gain the full potential of the capabilities being provided.

11.5 The Greater Manchester collaboration is an opportunity for sharing costs in ICT service delivery and providing resilience. ICT is open to working in partnership with like-minded Services to gain mutual benefit. This will act as the foundation for extension to collaboration across the city-region.

Partners and suppliers

11.6 ICT suppliers share the ambitions set out in the Manchester Strategy and support the local economy and social agenda. ICT will apply a weighted scoring to contract awards to demonstrate commitment to this approach.

- 11.7 In the future the ICT Service will be seeking partnerships across both public and private sector organisations. Our intention is to develop close working relationships where all parties have vested interest in the success of Manchester and the city region. This includes supporting local innovation where possible.
- 11.8 Working closely with partners will provide benefits in skills sharing and transfer.
- 11.9 Closer relationships are also being pursued with existing suppliers to ensure that value for money is being delivered through contracts. Activity in 2015/16 has already released significant cash savings. ICT continues to make progress with its contract management, focusing particularly on the £13m spent with 14 main suppliers.

12 Governance

- 12.1 There will be a need in future to maximise the synergies between the governance around information and ICT to gain greater strategic impact.

ICT Governance

- 12.2 The ICT stakeholder community plays a critical role helping to shape, guide, support and direct the service. Governance of ICT has been set up to ensure that the ICT Service is transparent in its execution of strategy and can remain aligned to business need, particularly at a senior level within the Council:
- **Finance Scrutiny** provides political overview on ICT strategy and performance holding the CIO to account on a regular basis.
 - The **ICT Board** provides leadership at executive level, including representation from the ICT Lead Member to monitor service performance and delivery of projects.
 - The **Directorate ICT Boards** provide regular engagement between senior management and their ICT Strategic Business Partners with an aim to prioritise project developments.
 - **Project Prioritisation Group** – provides a cross-Directorate forum to discuss the relative priorities for ICT investment in project delivery.
 - **Operational Groups** e.g. MiCare and SAP supports operational level discussion around major ICT systems between the ICT Service and the key stakeholders.
 - **Service Reviews.** There will be monthly Service Reviews between Business and ICT to discuss service performance and issues.
- 12.3 Further adjustments may need to be made to the governance as the model matures, to ensure clear routes to engagement and the communication of benefits realised from ICT involvement in business change and transformation. Extended governance will also be created to manage the evolving collaborative relationships that reach beyond the Council organisation in support of the Greater Manchester ambition.

Information Governance

- 12.4 The considerations around data security and standards are governed through the Corporate Information Assurance and Risk Group (CIARG) chaired by the Council's Strategic Information Risk Owner (SIRO), City Solicitor. It is also an integral part of the annual Public Services Network (PSN) compliance activity managed through ICT governance. The current focus of CIARG is an action plan in response to the Information Commissioner's audit report 2014/5. Future governance for information will need to be reviewed to ensure strategic alignment with ICT and the wider business requirements for intelligence.

13 Quality, standards and performance

- 13.1 Improving engagement, communications and governance is core to the ICT strategic direction, with a view to vastly improving the customer experience and perception of ICT Service Delivery. Feedback will help inform continuous improvement to service.
- 13.2 At a strategic level, the ICT Strategic Business Partners will work pro-actively with the Directorates to set direction for investment in data and ICT solutions with priorities negotiated through the Directorate ICT Boards and Project Prioritisation Group.
- 13.3 Regular feedback will be sought through surveys to assess customer satisfaction and contact tracked through the ICT Service Desk to monitor peaks and troughs in customer demand for support. This information will be analysed to predict future need, ensuring ICT is more proactive e.g. the Know IT All service providing a drop-in service for colleagues with issues with devices, which has proved popular with customers. This service will be extended with more drop-in locations inline with the Estates Transformation programme.
- 13.4 ICT performance is reported on a regular basis to ICT Board and Finance Scrutiny Committee, focusing on performance measures across service, delivery, process, structure and people. This provides greater visibility of ICT performance.
- 13.5 Service level agreements and Operating agreements will be agreed with the Directorates business areas to ensure that both the ICT Service and business managers are clear about expectations around service delivery with a regular reporting on performance based on agreed parameters. A service management tool will be used to support self-service in terms of service operations and reporting. Contracts and inter-departmental targets will be set to underpin these SLAs to ensure achievability. They will be reported on in monthly Service Reviews and to the ICT Board.
- 13.6 Benchmarking will be used to demonstrate the value for money services being provided using industry standard and best practice through organisations such as SOCITM, ITSMF. Where applicable, ICT will be striving for recognition through awards.

- 13.7 The ICT Strategy sets out the building blocks for impact on the customer experience of ICT Services, orienting individual performance to the overarching strategic intent in ICT, which in turn will align to the Council and Greater Manchester vision and objectives. This ensures that talent and energy are combined to provide momentum to realising the vision.

14 Risk Management

Risk appetite

- 14.1 The appetite for the ambition reflected in this strategy is balanced with the risks of not investing in a future that is highly dependent upon information and the technical infrastructure that captures, stores and provides tools to access, analyse and present in ways that support digital business.
- 14.2 The Council's success in a financially-constrained environment will depend upon quality data and the insight that can be provided through appropriate technology to capture, analyse, store and present intelligence.
- 14.3 Information governance is a growing consideration for the Council that needs to control access to sensitive data and ensure that there are no data or information security breaches. The risk to the Council in this area will grow without continue vigilance and appropriate governance.

Business Continuity and Disaster recovery

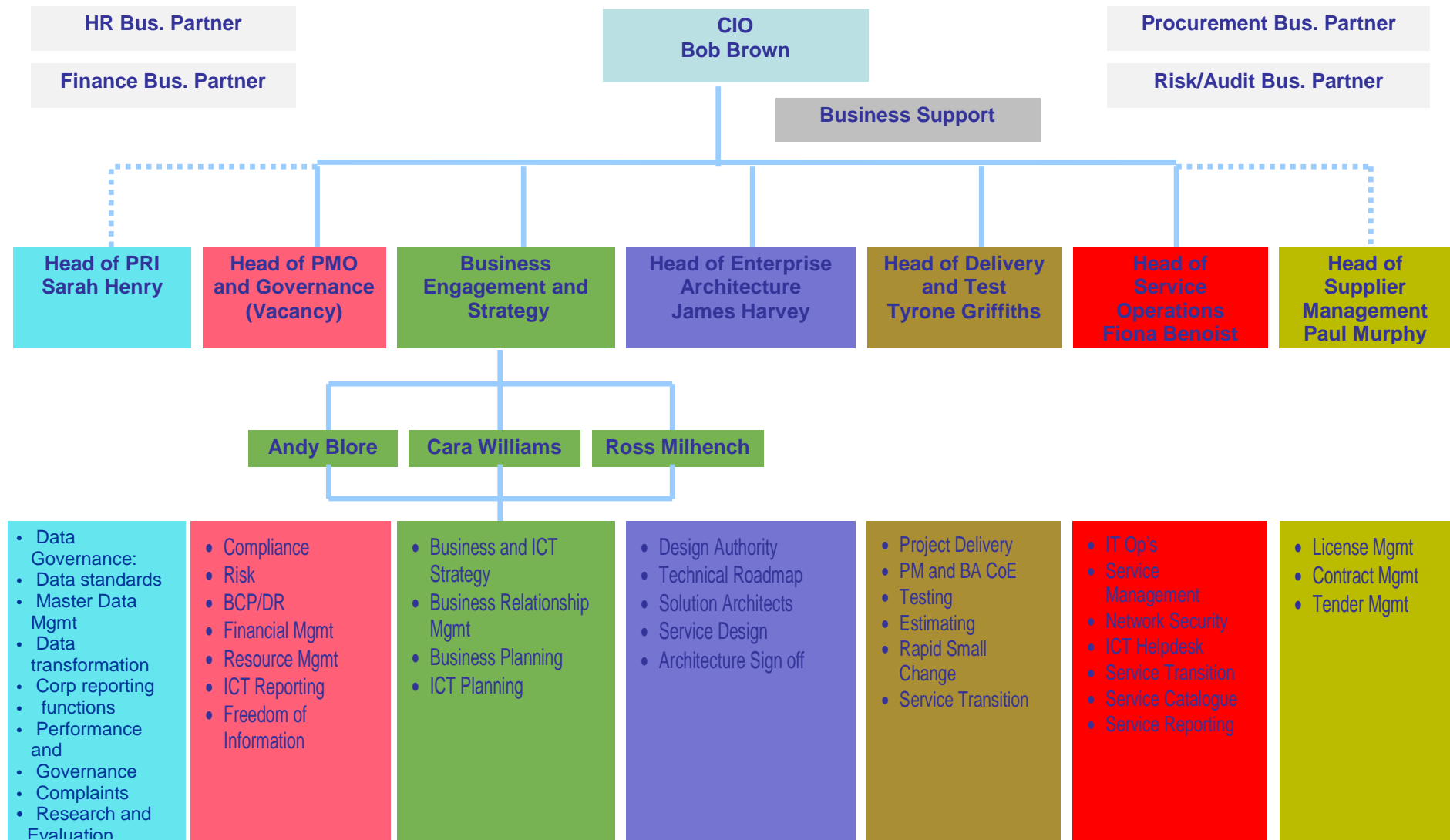
- 14.4 The service will be underpinned by full business continuity planning and disaster recovery within 18 months. Critical systems have been defined and appropriate plans are in place.
- 14.5 The loss of information systems for the Council could be catastrophic to the business without well-developed and up-to-date business continuity and disaster recovery plans to protect online access to information. Lessons learned from Post Implementation Reviews of incidents will help inform the business case for Disaster Recovery and Business Continuity to be submitted in 2016.

Appendix 1 – IT Service design principles to support the Target Operating Model

- Service availability is number 1 priority for ICT
- ICT is a 24/7, 52 operation
- ICT is a centralised operation. No ICT services will be a federated within directorates
- “Logical” ICT functions to be grouped together
- ICT’s Business Engagement Team will align by Directorates; they will understand their business needs intimately
- The ICT operational design will be based on the foundation of ITIL v3³
- ICT will adopt a Waterfall or Agile Project Methodology assessed on a case by case basis
- Agreed Service Level Agreements (SLAs) / Operating Level Agreements (OLAs) will be the backbone by which ICT will deliver and respond
- ICT’s Business Engagement Team – the ICT Strategic Business Partners -will align by Directorates, they will understand each business needs intimately
- From 1st April 2015, all ICT budgets will be centralised in order to drive best value. Directorates will be able to provide additional investment for the delivery of the revenue and capital priority projects. The ICT Service will report back on how value for money is being provided for the resources.
- ICT will have a fully flexible resource profile using third party resource only where agreed as part of a managed service or to manage peaks in demand.
- Projects/Programmes are sponsored from wherever is best, not necessarily ICT (ICT can simply provide a service)
- Enterprise architecture, Business Engagement, Compliance/Security and Risk are in-house functions in ICT, this will be provided by permanent MCC staff only

³ ITIL (Information Technology Infrastructure Library) is a set of practices for IT Service management that focuses on aligning IT services with the needs of the business.

Appendix 1 (continued): ICT target operating model



Appendix 2 – ICT emergent strategy and progress

Stabilisation and Investment Jan 2015 - Aug 2016

ICT Organisation

- ✓ Agree Future Operating Model and Structure
- ✓ Set ICT Objectives and implement Performance Management culture
- ✓ Identify resource gaps and recruit for success
- ✓ Increase perm to contractor ratio
- ✓ Retain essential skills in-house

ICT Portfolio

- ✓ Baseline Portfolio, set priority and communicate
- ✓ Define portfolio prioritization framework
- ✓ Elections
- ✓ Exit Daisy Mill
- ✓ Ensure successful Year End
- ✓ Establish MCC PPG

Budget

- ✓ Deliver Rev at current level
- ✓ Identify Capital requirement to deliver baselined portfolio
- ✓ 2-year investment plan

Governance and Strategy

Transform and Efficient Sep 2015 – Dec 2016

ICT Organisation

- Q4/16 Recruit all key resources
- IP GM perspective on ICT deliver, provides support to AGMA and the Combined Authority
- IP Performance Management culture implemented across ICT
- Q3/16 ICT Business Engagement Framework embedded across MCC
- ✓ MCC role on GMIT

ICT Portfolio

- Q3/15 Agree, prioritise and plan ICT portfolio for next 12-18 month
- Q3/15 Resource delivery portfolio, fix to costs
- Q4/16 Deliver ICT investment portfolio

Budget

- IP Revenue and Capital delivering within budget
- ✓ On track to deliver efficiency savings from ICT
- Q4/16 ICT Business Plan and investment signed off for 2016-18

Governance and Strategy

Growth and Innovation Jan 2016 – Aug 2017

ICT Organisation

- High performance culture in place. ICT known for successful delivery and clear engagement
- Greater collaboration across GM/ AGMA/ GMCA

ICT Portfolio

- ICT Portfolio plans being delivered
- ICT embedded within business planning cycles
- Deliver ICT investment portfolio

Budget

- ICT delivered committed savings for fiscal 2015/16

Governance and Strategy

✓	Define reporting lines and governance framework	Q3/15	Highly effective and efficient ICT PMO in place	Regular innovation sessions held in each Directorate where ICT technology is introduced to advance directorate business plans Signed off Architecture Roadmap and N-1
✓	Create 1 st draft ICT Strategy	Q4/16	ICT Strategy signed off	
✓	Communicate Strategy defined	✓	Effective Internal and External communication in place	
ICT Service		ICT Service		ICT Service
✓	Reduce operational risks	Q4/16	ICT/Business OLAs framework agreed, work underway to agree standards	Managed services exceeding SLAs
✓	Define Supplier Governance Framework	Q4/16	Supplier Governance Framework in place and maturing driving suppliers to be delivering against contractual terms and bring through innovation	ICT/Business OLAs refined and updated
IP	Service Performance metrics Service established, clear SLAs and OLAs	Q4/16	Implement Service Delivery Model, driving costs down but service performance up	Supplier governance working highly effectively, half yearly strategy sessions in place to share plan and agree collaboration agenda
✓	Agree future service delivery mode			All Hosting Services transitioned or planned to transition to single hosting partner

Key

- ✓ = Completed
- IP = In Progress
- Q4/15 = Target quarter/ Year

Appendix 3: Improving Data Quality and Governance

Area of Improvement	Description	Main goals
Data Governance	Data governance is at the heart of managing data assets The Council needs an improved approach to controlling, planning and enforcing management of data assets.	<ul style="list-style-type: none"> • To define, approve, and communicate data strategies, policies, standards, architecture, procedures, and metrics. • To track and enforce regulatory compliance and conformance to data policies, standards, architecture, and procedures. • To sponsor, track, and oversee the delivery of data management projects and services. • To manage and resolve data related issues. • To understand and promote the value of data assets.
Master Data Management	The main goal is to implement a set of technology, tools and processes required to create and maintain a consistent and accurate lists of data.	<ul style="list-style-type: none"> • Provide authoritative source of reconciled, high-quality master and reference data. • Lower cost and complexity through reuse and leverage of standards. • Support business intelligence and information integration efforts. • Collect and analyse metadata about master data. • Develop a master data model.
Data Quality	The main goal is to embed data quality practices into business processes, too often quality issues are addressed at the end of the processes by report creators. Data quality suffers because individuals apply their own data quality rules and the source of bad data, whether it be people or technology, is never properly addressed	<ul style="list-style-type: none"> • Design data quality rules once and deploy anywhere to proactively monitor and cleanse data for all applications and maintain its clean state. • Enable The Council to share in the responsibility for data quality and data governance. • Achieve better business outcomes with trusted enterprise data.
Data integration	The main objective of Data Integration (DI) is to	<ul style="list-style-type: none"> • It provides a flexible architectural pattern. The hub and spoke

Area of Improvement	Description	Main goals
	<p>provide an efficient, easy to maintain data architecture. This will result in lower ICT charges and provide an enabler for Enterprise Data Management practices like Master Data Management (MDM), Customer Data Integration (CDI) and Data Quality (DQ).</p>	<p>pattern. The hub-and-spoke concept is easy to understand and work with, yet can be expressed in infinite variations.</p> <ul style="list-style-type: none"> • It fosters reuse. You typically develop an interface—called a spoke—from the hub to a given system and then reuse that interface as more systems need to communicate with the first one. • It reduces the number of interfaces. The practice of spoke reuse fostered by hub-and-spoke architectures dramatically reduces the number of interfaces you need to build and maintain. • A data integration service is a generalized interface, so a data integration tool can call and be called in a reusable fashion from data quality or application integration tools, achieving greater interoperability with these. • Data integration architecture can be extended by using a service-oriented architecture (SOA) to provide data services. Note SOA won't replace current hub-based architectures for data integration. Hubs will remain but be extended by services.
<p>Data Warehouse/ marts</p>	<p>This is the cornerstone of the long term strategy for single source of the truth. The warehouse must be flexible enough to accommodate the changing data requirements of the organisation. It must be able to address tactical or department reporting needs by supplying information to data marts. The enterprise warehouse will be constructed</p>	<p>The high level goal is to provide a historical (including overnight) copy of transactional data specifically structured for query and analysis.</p>

Area of Improvement	Description	Main goals
	<p>incrementally and must be a combined effort between departments and ICT. One very important component is the enterprise data model, which provides definitions of core business entities and the relationships between them. Only once this is defined and implemented will the true enterprise reporting benefits be realised.</p>	
<p>Analytical hub</p>	<p>The intent of the analytical hub is to provide the dedicated storage, tools and processing resources to establish a foundation for recurring discovery needs. The insight gained in this area can provide reporting requirements for delivery of solutions on the data warehouse/ mart or operational reporting service. The hub must remain lightweight and agile, responding to the changing analytical needs of the business.</p>	<p>The goal of an analytical hub is to allow data analysts, to perform advanced analytics and predictive modelling in a timely, scalable and comprehensive manner. They need it for developing predictive models or proactive analysis that will be used in business processes and for decision-making.</p>
<p>Operational databases</p>	<p>Operational systems provide the primary source of information for the majority of reporting activities. In addition, they also come with their own reports. Reporting activities in Operational system must only be used to support the day-to-day reporting activities of The Council. More complex reporting needs will be serviced by Data Warehouse/Marts or Analytical Hub. Data is generated by the</p>	<p>The goal is to establish a cohort of Data Owners, probably at Heads of Service level who, with support, can address:</p> <ul style="list-style-type: none"> • How data is validated, codified and updated within software applications to minimise the chance of data error • How staff are trained and monitored in relation to accurate input • How data quality is risk assessed and measured • Which data will be needed beyond the operational and managerial

Area of Improvement	Description	Main goals
	<p>people who input this into Council systems. These people are distributed across the Council and beyond, including citizens who self-serve.</p>	<p>requirements of the service to meet wider corporate objectives.</p> <ul style="list-style-type: none"> • Which data is needed to demonstrate accountability, transparency and, where appropriate (and with the exception of personal data), made openly available. <p>To achieve these aims this will need:</p> <ul style="list-style-type: none"> • Agreed data owners. • A governance structure that oversees progress in delivering high quality data. • Support from PRI and ICT to address data standards, validation processes and quality reporting.
Integration	<p>Increasingly, data needs to be transferred between services or combined in ways which enables wider insights, whether this be in individual situation like working with trouble families, building business cases related to an array of factors or generating statistical or research analysis.</p>	<p>Integration is enabled by:</p> <ul style="list-style-type: none"> • Proactive actions by data owners to recognise and make data available. • Standardising ways of capturing and codifying data. • Technologies which facilitate data extraction, transfer and loading. • Clarity with respect to data sharing agreement and privacy impact assessment. <p>To achieve these aims this will need:</p> <ul style="list-style-type: none"> • Active participation by services and a clear data catalogue across all area, • Further adoption of data standards and development of master data management approaches (data used across an array of systems), • Appropriate middleware to handle data transfer.
Reporting	<p>The reporting landscape is fragmented with multiple software tools used to create the same type of report. The software tools</p>	<p>In line with the ICT adopted principle of having up to date applications (n-1), the current arrangements need to be rationalised and updated to enable The Council to deliver the full range</p>

Area of Improvement	Description	Main goals
	<p>are also outdated and lack advanced analytical, data visualisation and self-service capabilities.</p>	<p>of reporting capabilities:</p> <ul style="list-style-type: none"> • Enterprise Report – Financial statements and high-level board reports. • Analytical Report – Data exploration, statistical and predictive analytics. • Self-Service/Ad-Hoc Report – Empowering end users in an ICT managed environment. • Performance Management Report – Scorecards and dashboards. • Operational Report – Detailed reports for day-to-day decision making.
<p>Access</p>	<p>User interaction with the existing report tools is limited to standard access channels. The standard channels make it hard to collaborate, interact and share information and mean the overall reporting experience is frustrating for the user. Access channels to the report layer and the data contained within it need to be greatly enhanced in order to increase user engagement and improve the overall experience. Modern access channels like internal portals, web browser, mobile devices and web services must be used. Currently iBASE is deployed to support work on troubled families as one approach to linking data but these approaches need to be more universally adopted</p>	<p>To achieve this aim this will need:</p> <ul style="list-style-type: none"> • Determination, approval and implementation of the appropriate technologies which need to be deployed to meet the reporting aims of the Council and in conjunction with partner organisation and across GM • Investment in skills and resource to utilise these technologies to make a step change in corporate reporting arrangements. This could be a combination of an implementation partner and a restructured Data Governance function • Wider access to reporting functionality to eliminate single points of failure • Improved data visualisation, in particular, to support accountability.

Area of Improvement	Description	Main goals
	across the entire data landscape.	

Appendix 4: ICT and Information Principles

General

Principle G1: Apply Principles Universally

These principles apply to all parts of ICT.

Principle G2: Maximize Benefit to Manchester City Council

Decisions are made to provide maximum benefit to Manchester City Council as a whole.

Principle G3: Business Continuity and Availability

Appropriate levels of Business Continuity and Availability will be maintained.

Principle G4: Compliance with the Law

All Architecture information management processes and systems must comply with all relevant laws, policies and regulations.

Principle G5: Consolidation

Consolidation is considered at all times and there is a proactive drive towards reducing proliferation and complexity.

Principle G6: Fit for purpose

Solutions will not be designed to the Nth degree, nor will their designs disproportionately compromise the key objectives and goals.

Principle G7: Common Vocabulary

Objects are defined consistently throughout the enterprise, and the definitions are understandable and available to all users.

Principle M2: Proactive Business Leadership

Business leaders, including those of ICT, all engage proactively on key IT planning activities.

Principle M3: ICT Responsibility

The ICT Architecture team is responsible for defining and implementing best practice IT processes.

Principle M4: Management of Intellectual Property (IP)

ICT need to know when to Develop and Protect, Leverage others or Give IP away. This must be reflected in the ICT architecture, implementation and governance.

Principle M5: Responsive Change Management at a Manageable Cost

Changes to the enterprise information environment are implemented in a timely manner and at a cost effective rate.

Applications / Solutions

Principle A1: Be Service Oriented

The architecture is based on a design of services which mirror real-world Manchester City Council activities encapsulating the enterprise (or inter-enterprise) business processes.

Principle A2: Ease-of-Use

Applications and services are easy to use. The underlying technology implementation is transparent to users, so they can concentrate on tasks at hand.

Principle A3: Reduce Manual Processes

Manual processes are reduced and removed, but only when there is a valid business case for doing so.

Principle A4: Open Standards Integration

Integration of systems is viewed as a strategic capability separate to each individual system, rather than something that is thought of as part of each individual system.

Principle A5: Replace Legacy Systems Appropriately

Legacy systems will be replaced, but only when there is a valid business case for doing so.

Principle A6: Only Build Where a Competitive Advantage/specialism Exists for the Council

ICT will only carry out development when this achieves a clear competitive advantage or, a specialism of solution(s) is required to Manchester City Council.

Principle A7: Application Security

Applications and services are secured from unauthorised access.

Principle A8: Testability

Application and services (component) should be designed within ease of testing in mind

Principle A9: Operability

Applications and services are robust and fault-tolerant, providing clear error reporting, diagnostic and performance monitoring facilities.

Principle A10: Scalability

Applications and services are designed and demonstrated to scale linearly, and the capacity limits of the current production hardware configuration are known.

Data

Principle D1: Data is an Asset

Data is an asset that has value to the enterprise and is managed accordingly.

Principle D2: Data is shared

Data is shared across organisational and technical boundaries.

Principle D3: Data is Accessible

Data is accessible for users to perform their duties.

Principle D4: Data Security

Data is protected from unauthorized use and disclosure.

Principle D5: Data Creation

All enterprise data is captured once, at the point of its creation.

Principle D6: Data Lifespan

An appropriate archive/purge strategy needs to be built in by design.

Principle D7: Business Intelligence

All data captured within ICT and 3rd party systems should be made available for business intelligence where required

Technology

Principle T1: Maximise Technology Independence

Applications are independent of specific technology choices and therefore can operate on a variety of technology platforms.

Principle T2: Manage Technological Diversity

The number of technologies should be reduced wherever possible.

Principle T4: Technology Selection through Use Cases and Non-Functional Requirements

All utilisation of technology should have a clear rationale, articulated by both use cases and specification of non-functional requirements.