
**Manchester City Council
Report for Information**

Report to: Audit Committee – 6 October 2016

Subject: Progress of ICT Disaster Recovery Strategy Implementation

Report of: Bob Brown, Chief Information Officer

Summary:

ICT provided an update to the Finance Scrutiny Committee in June 2016 which provided members an update. In that paper ICT committed to:

- Selecting a hosting platform – to consider the various industry standard data centre models and provide a recommendation by December 2016.
- Data centre improvements - to complete any short term actions required to improve the resilience of current infrastructure and applications by December 2016.
- Renegotiate the Telephony and Wide Area Network (WAN) contracts to deliver a value for money, fully managed service as well as an upgrade of the existing aged estate. (November 2016 for contract change and 2017/2018 for upgrade of Telephony/Contact Centre Estate).
- Review and design the current network architecture to provide a fit for purpose network. This is an enabler project for the Collaboration implementation (March 2017 for initial works to key sites).

The paper gives an interim update on the work undertaken by ICT thus far. ICT will provide a greater level of detail on Disaster Recovery to the December 2016 Resources and Governance Scrutiny Committee.

Recommendations:

Committee members are requested to consider the contents of the report, provide feedback on the proposed approach and schedule a further update in 6 months for Audit Committee or Resource and Governance Committee

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Background documents (available for public inspection):

The following documents disclose important facts on which the report is based and have been relied upon in preparing the report. Copies of the background documents are available up to 4 years after the date of the meeting. If you would like a copy please contact one of the contact officers above.

ICT Strategy 2016-2020

1. Introduction

- 1.1. Manchester City Council do not have in place a robust Disaster Recovery (DR) solution for critical infrastructure, applications and services. This presents a significant risk to the organisation in that Major Incidents can result in an inability to provide critical services to residents, customers, partners and key stakeholders.
- 1.2. It is acknowledged by the ICT Service, and more widely by the Councils Senior Leadership Team, that the existing setup presents a significant risk, and this was highlighted in the Internal Audit Report issued on 3rd June 2016.
- 1.3. Manchester City Council have one primary Data Centre (DC) located in Manchester. There is no multi-site DR in place for any of the Councils line of business applications, some of which are required to provide key services – MiCare, Academy, CRM, Paris for example.
- 1.4. The objective is to implement a multi-site DR solution for some of the Councils most critical applications/services, thus enabling failover in the event of a Major Incident which impacts critical infrastructure at the Sharp DC, or our ability to operate out of the Sharp DC in general – the incident on 3rd December 2015 which resulted in loss of power to the DC being an example, with all applications impacted including some which are hosted externally and accessed via the Internet.
- 1.5. In May 2016, ICT reported to the Finance and Scrutiny Committee on the extent of the Council's reliance on the Sharp data centre. In that situation, we did not have a failover facility to restore council services and a 3-day outage followed. The learning from this incident has informed the development of the current ICT Resilience and Disaster Recovery Strategy.
- 1.6. This report provides an update on the implementation of the ICT Resilience and Disaster Recovery (DR) Strategy which will improve the resilience of ICT infrastructure and provide a robust business continuity solution in the event of a major unplanned incident materialising. The key areas that the report will focus on are:
 - Strengthening resilience
 - Developing business continuity
 - Developing disaster recovery
 - Plan for the next six months

2. Strengthening resilience

- 2.1. ICT has been recruiting extensively into the approved operating model and have now filled 90% of those technical roles. For the remaining roles ICT have worked with a third party recruiter. Additionally, we have worked with Manchester Metropolitan University to fill vacancies with technical apprentices.
- 2.2. ICT has expended significant effort in recent months to ensure that critical services are under contract and have Service Level Agreements (SLAs) in

place e.g. Email, Citrix and web filtering).

- 2.3. ICT is systematically removing single points of failure in the underlying infrastructure. Over the past four months the following services have had their single point of failure removed:
- Traveler – the service which enables members and officers to receive emails/calendar information on mobile devices)
 - Paris – the Councils system for receiving incoming payments
- 2.4. In September 2016 the Council approved the decision to move from Lotus Notes to Google For Work, this new technology will not only provide a more resilient email collaboration platform for our users, it drastically reduces our dependency on the Sharp Data Centre for email, as the system is externally hosted. Given the nature of how modern business operates, this is also seen as a positive factor when considering unit business continuity as email would remain available in the event of a physical data ctr disaster.
- 2.5. ICT has a project currently delivering an upgrade to our Citrix platform to a much newer version of the system in line with our n-1 strategy. This project is due to complete by December 2016 and also underpins the move architecturally to Google for Work technologies and our PSN compliance requirements. Other benefits of the project are:
- Reduction in application support and license costs
 - Reduction in license costs on the MEA (Microsoft Enterprise Agreement) - if we run Citrix on less servers. However, this will be dependent on the impact of the Universal Access project
 - Reduction in VMWare license costs - if we use less virtual machines to run Citrix. However, this will be dependent on the impact of the Universal Access project
 - Reduction in business support running costs as it becomes possible to remove the need for contractors to support the new Citrix platform and will include knowledge transfer to in-house resources
 - Reduction of bandwidth issues at site links which will provide a better user experience
 - Improved performance and platform stability which will improve availability levels
 - Improved functionality – as the latest applications can be delivered to users
 - A key enabler of the ICT business portfolio across all business areas by providing the updated versions of dependant software for our core business systems such as Internet Explorer
 - Removes legacy windows servers that are unsupported and means we can work towards achieving PSN compliance and, reduce our current security exposure levels
- 2.6. As part of ICTs review of the resilience of our systems we will look at the appropriateness of current delivery models.
- 2.7. There is an ongoing activity with the service area to ensure that the relevant

documentation of each service is in place, agreed and deliverable. E.g. SAP, MiCare.

- 2.8. ICT has recently had funding agreed to start work reviewing the communications rooms, this will initially start off with assessing the current state of them and assessing the suitability of the equipment inside. This work is due to complete in December 2016, following on from the recommendations from this report will be the activity to implement the report's recommendations and findings.
- 2.9. ICT are also working on how to decrease the risk of the one internet link currently at the Sharp DC by considering a resilient second link in another location.
- 2.10. ICT has a number of initiatives rolling out new android mobile telephones, tablets, Wyse terminals and desktops and provides a device and desktop strategy that further increases our ability to create a resilient environment.

3. Business Continuity

- 3.1. ICT has been provided with 0.5FTE from Risk and Resilience to support the ICT service in reviewing and updating its Business Continuity plan, and assuring that associated documentation is in place for all ICT teams.
- 3.2. In September 2016 ICT successfully tested a controlled power shut down of all the systems within Town Hall Extension (eg CCTV, door system and all library systems) and brought them back online in line with planned timescales and expectations. This was a positive validation of the effectiveness of plans in this area.
- 3.3. ICT are reviewing the service level agreements in place with all critical applications used within the Directorates. ICT is also agreeing with the Directorates the relative priority of these critical applications as to what order they should be brought back up to service. This scoping work will inform the design of the required DR solution.

4. Disaster Recovery

- 4.1. The key objectives of Disaster Recovery and any underpinning work is being delivered within the Platform Hosting Programme and these are to:
 - Define and agree the hosting platform strategy with built in disaster recovery provision
 - Complete the remedial action required following the fire at Sharp
 - Ensure the underpinning network infrastructures at the datacentres and working locations are designed to cope with the new hosting target solutions
 - Devise tactical disaster recovery (DR) solutions to deliver confidence of service continuity in the event of a major incident while the wider strategic work is underway

- 4.2. ICT has secured initial funding of £900k for this above activities and resources are being requested to define this work.
- 4.3. Over the past four months ICT has worked with two major suppliers to Manchester City Council and cloud service providers to assess which are suitable to be moved off ICT platforms.
- 4.4. ICT is also going to look at the viability of cloud options as well as MCC hosted options to provide our disaster recovery services.
- 4.5. Site surveys are currently being undertaken to assess suitability of locations. These will complete in October 2016 and a location will then be selected. Following on from that there is a three month activity to put in the new resilient link in the selected site and a further three months to ensure that all the technical aspects are fully aligned and tested. This will give us an interim tactical disaster recovery capability by March 2017.

5. Plan for the next six months

Sharp Remediation

- 5.1. Since December, ICT has been working on the activity to remedy the issues within Sharp.

The team is currently delivering the last of two phases of the project:

- Phase 1: Repaired the damage caused by the incident to enable us to restore services. This was undertaken between the time of the incident and April 2016 (Complete)
- Phase 2: Implement immediate temporary measures to stabilise the data centre and minimise risks of further outages. Building the secure UPS room to protect the data centre from fire risk. This work started in May and is planned to complete March 2017.

- 5.2. Phase two is separated into two distinct pieces of work:

- Construction of a room to house the extra equipment required which will prevent overheating and provide uninterruptable power supply (UPS), thus preventing outage due to incidents similar to December 2015 – this work is complete
- The construction of raised floor and separate internal rooms to house UPS units, batteries and move the UPS and ensure resilience power feeds into the building. It will also include reviewing and where necessary recontracting the maintenance agreements at the site

- 5.3. The project is currently on target for time and budget and anticipates completing by March 2017.

- 5.4. The project is awaiting funding approval for this phase, Finance have been consulted in preparation for submission of the project gateway business case

and financial approval is anticipated by the end of October 2016.

Collaboration

- 5.5. Decision to award contract to CTS to deliver Google for Work.
- 5.6. The project will reduce the reliance on the existing and proposed DR solution.
- 5.7. The project will implement resilient internet connectivity for the benefit of all cloud based services.
- 5.8. Planning will complete October 2016, implementation in three phases commencing November 2016.
- 5.9. The projects scope includes migration of services off the existing Domino servers, as these servers are out of date, complex to maintain and therefore costly to the Council.

Telephony

- 5.10. Work is ongoing to renegotiate the Telephony and Wide Area Network (WAN) contracts to deliver a value for money, fully managed service as well as an upgrade of the existing aged estate.
- 5.11. The project aims to deliver a change in contract in November 2016 and the upgrade of the telephony/Contact Centre estate is tabled for 2017/18.

Core Switch Firmware Upgrade

- 5.12. Following the electrical incident at Sharp in December issues identified by Computacenter whereby the firmware on our core network switches were out of date.
- 5.13. This introduced additional risk as our firmware wasn't up to date.
- 5.14. The firmware has been updated on all local switches.
- 5.15. The two core network switches that support the majority of our systems and application will be upgraded in October 2016.
- 5.16. This will impact core services during this upgrade and this will be communicated to MCC via the corporate broadcast.

6. Next Steps

- 6.1. ICT will provide a greater level of detail on Disaster Recovery to the December Resources and Governance Scrutiny Committee.