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**Manchester City Council  
Report for Resolution**

**Report To:** Resources and Governance Overview and Scrutiny  
Committee - 10 December 2009

**Subject:** Information and Communication Technology (ICT)

**Report of:** Steve Park, Chief Information Officer, CIO  
Directorate of Transformation

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**Summary**

To appraise the Committee on the long-term impact on services of the ICT disruption in February / March 2009 and on the installation of Wyse terminals.

**Recommendations**

The Committee are asked to note the contents of the report.

**Wards Affected:**

All

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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.

## **1. INTRODUCTION**

- 1.1. In February and March of 2009 the Council suffered severe disruption to Council operations including the delivery of services to customers as a result of a widespread IT virus. The severity of the disruption was such that the Council invoked the Corporate Business Continuity Plan which was lead by the Emergency Management Team.
- 1.2. Since March 2009, the ICT Service has implemented several changes to eradicate the virus from the ICT estate as a priority, and then to strengthen and protect the infrastructure. The strengthening and protection work is designed to minimise the risk of such a virus outbreak occurring again and to improve the performance (reduce the outages) of ICT across the Council.
- 1.3. The changes that the ICT Service have made in the last 6 months have been around both the technology and the processes that are followed in managing the technology. Some of the most important changes have involved the staff themselves. The way in which staff are managed and the way they are organised structurally is an important factor in getting the best not only from our staff but also from the technology.
- 1.4. Although some of the changes that been undertaken have been tactical to deal with specific issues, the majority of the work done is gradually establishing a firm strategic platform for the organisation in the longer term. The ICT Service is now better aligned with the business planning process and underpins the strategic objectives of the Council.

## **2. Purpose of Report**

- 2.1.1. Following a report to Committee in June regarding the actions taken by the ICT Service to alleviate IT virus issues, an update was requested in 6 months to the describe progress made. In particular the Committee were interested in the long-term impact of the virus on services, the installation of Wyse terminals with associated costs and the development of an ICT Disaster Recovery Plan.
- 2.1.2. This report provides a general update on the actions taken by the ICT Service in the last 6 months with particular reference to those areas specifically requested by the Committee in June 2009.

### **3. February 2009 Position**

- 3.1. In February 2009, the ICT estate contained several critical vulnerabilities that had aggravated the onset of the IT virus known as 'Conficker'. These vulnerabilities ranged from very technical issues around the build of desktop and laptop PCs to process issues, for example in the way updates are managed. The volume and complexity of the vulnerabilities resulted in the remediation effort being equally complex and very difficult to achieve quickly, given the impact being experienced by services across the Council.
- 3.2. Throughout January and early February, the Council was experiencing sporadic failures in the ICT systems generally. From mid-February to early March most ICT systems were failing totally from approximately 9.30am through until around 6pm on a daily basis. The Council's Business Continuity process was started and the Emergency Management Team convened to ensure that the impact on priority services was minimised and to coordinate communications.
- 3.3. The ICT Service did not have a suitable support contract in place with either Microsoft or other key providers that could be utilised to deal with a top priority incident and thus minimise the impact on services. A full 24x7 support contract was quickly established with Microsoft who had the technical expertise necessary to identify fixes to the more complex issues and helped develop a plan to remove the virus from the network.
- 3.4. The ability to tackle the virus was also hampered by what is known as staffing 'single-points-of-failure'. This meant that the ICT Service had a single individual who was able to support certain systems and should that individual be unavailable through leave or sickness, then work on that system stopped. Not only did this put the Council in an unacceptable risk position, it also threatened to prolong the impact on services as the recovery process could take longer to complete.
- 3.5. As the impact of the virus was being felt across the Council and communications were being coordinated through Emergency Management Team, it was becoming more apparent that the ICT Service did not have a Disaster Recovery (DR) plan in place. Such a plan would ensure that ICT systems classified as critical by services would be given specific support capabilities and alternative systems would be available should they become unavailable to staff. The lack of disaster recovery planning resulted in the recovery of critical systems requiring much more effort and taking longer than should have been the case.
- 3.6. Internally in the ICT Service, there was a lack of documented business processes that coordinate activity between teams and ensures priorities are both understood and effectively managed. Early attempts to tackle the virus before it took hold were in part thwarted by this lack of defined business process within the ICT Service.

#### **4. ACTIONS SINCE FEBRUARY**

4.1. The ICT Service has taken action eradicate the virus from the Council's computer networks and has put in place measures to minimise the risk of such an IT virus outbreak occurring in the future. The work undertaken to date has focussed on people and process issues as well as technology.

#### **4.2. Technology**

4.2.1. The following describes the work done since February that has been focussed on technology:

##### **4.2.2. *Anti-virus Deployment***

4.2.3. From a starting position in February, when around 95% of the network had either ineffective or no anti-virus protection, the full network (including laptops), is now protected. The deployment of anti-virus software has been done in a way that ensures updates are deployed across the full network the same day they are received by MCC, ensuring the network is fully up-to-date at all times.

##### **4.2.4. *Citrix (Wyse) Terminal Deployment***

4.2.5. The ICT Service has invested £500k in the procurement of 2000 Citrix (Wyse) terminals. The deployment of these terminals has been targeted in those areas of the ICT estate that were both recording the highest levels of IT virus activity (and therefore causing most damage) and proving to be difficult to cleanse. Since May 2009 the ICT Service has deployed 650 Citrix terminals. These have included 110 deployments in one particular location where virus was causing most disruption to the wider Council.

4.2.6. The targeted deployment of the Citrix terminals has involved complex changes to several applications in order to ensure they are accessible through a Citrix environment. There has therefore been a trade off between targeting areas of high virus activity and the pace of deployment. The pace of deployment has been lower than anticipated, however it is now expected that 1000 Citrix terminals will have been deployed by the end of December 2009 and a total of 2000 by March 2010.

##### **4.2.7. *Removal of 'Administrator' Rights***

4.2.8. When a user has 'administrator' access on a PC, it gives the user the ability change all aspects of that computer and the ability to access other computers on the network that also have administrator access. This was a critical vulnerability that the Conficker virus exploited and was the key reason why the virus became so widespread across MCC networks. The

ICT Service has now restricted administrator rights to all workstations. Only staff in a desktop support role now have administrative access.

#### **4.2.9. *Data Encryption Solution***

The ICT Service has procured a corporate data encryption solution. As a priority, and in recognition of the undertaking that the Chief Executive has recently made to the Information Commissioner, this software has now been deployed on 95% of laptops. The remainder that connect to the network on rare occasions will be encrypted by the end of November. Once the laptop encryption is complete the ICT Service plans to install the encryption solution on all desktop PCs in the first quarter of 2010.

### **4.3. *Process***

#### **4.3.1. *Patch Management***

4.3.2. This is a technical term that describes the process by which servers and PC's (mainly those running Microsoft systems) are updated to ensure security vulnerabilities and performance problems are addressed. From a starting position in February when no patch management process was in place and several hundred servers were not adequately 'patched', the ICT Service now has a patch management process that ensures all updates are installed no longer than 4 weeks from first release from Microsoft. This is considered industry best practice, compared to a position previously where patches were up to 2 years out of date. It was the lack of patch management that significantly aggravated the spread and clean up of the Conficker virus.

#### **4.3.3. *ICT Disaster Recovery (DR) Planning***

4.3.4. An initial ICT Disaster Recovery Plan has been compiled and is being continually developed as business continuity requirements emerge. An alternative site has been identified to host the ICT Data Centre. Presently a data centre is housed in the basement of the Town Hall Extension which is not considered best practice being below street level and located in a city centre. The move of the data centre to new fit-for-purpose location is a key part of the Council's new ICT DR planning.

#### **4.3.5. *ICT Asset Control***

The ICT Service now has a draft Asset Management Policy that will be used to manage all ICT assets throughout the complete asset lifecycle. This policy will be further developed by January 2010, in conjunction with our newly appointed Strategy Partner (Ernst & Young) to ensure it is integrated with other asset management policies across the Council.

#### **4.3.6. *Increased Password Complexity***

4.3.7. In line with the objective of providing secure and safe ICT systems, and to achieve compliance with Government Connect requirements, the ICT Service has radically increased the complexity of user passwords. As at August 19<sup>th</sup>, complex passwords were enforced for all users.

#### **4.4. People**

##### **4.4.1. ICT Service Restructure**

4.4.2. The ICT Service structure was siloed, contained inherent single points of failure, was unable to provide adequate levels of support (in or out of operational hours) and lacked management and leadership. The ICT Service has now been restructured to be orientated towards providing improved levels of customer service and support. Key technical functions that were previously siloed in separate command structures have now been combined under a single management line. Out of hours support arrangements have been reviewed and improved in recognition of the Council's 24x7 service delivery.

4.4.3. Whilst the restructuring exercise was underway, the ICT Service has made use of temporary resource that has brought additional skills and importantly has mitigated the threats posed by staffing single points of failure as described in section 3.4 of this report. The temporary resource that has been used will leave the Council in December as the new staffing structure takes effect.

4.4.4. Management and leadership capabilities have been improved through the recent appointment of a Chief Information Officer (CIO). In establishing this new position, the Council has recognised the integrated nature of information and technology and its strategic importance in underpinning service delivery across the organisation.

4.4.5. The ICT Service has also continued to strengthen its management capability through the recent appointed a Head of ICT Operations and a Head of ICT Strategy & Change. In contrast to previous arrangements, all ICT operations fall under the command of the Head of ICT Operations. The Head of Strategy and Change is focused on developing and prioritising the ICT Service roadmap and developing relationships with customers in service areas across the Council. It is this role that will ensure that the ICT Service has the capacity and capability to support the ambitions of the Council's transformation programme.

##### **4.4.6. ICT Strategy Partner**

4.4.7. The ICT Service has now engaged Ernst & Young as a Strategy Partner for an initial period of 2 years. This appointment is designed to provide the ICT Service with access to specialist skills associated with strategic ICT planning, insights into industry trends, benchmarking data, assistance with policy development and a 'challenge' to ICT service performance.

## **5. CURRENT POSITION SUMMARY**

- 5.1. The ICT Service is now confident that the ICT estate has comprehensive protection from IT viruses through up to date anti-virus software and a Microsoft patch management process. This has recently been corroborated by Grant Thornton through their audit work in the ICT Service.
- 5.2. The organisational restructure has positioned the ICT Service to be able to consolidate all aspects of ICT presently distributed across the Council into a single, integrated, effective and more efficient service.
- 5.3. Although progress has been made in the last 6 months, there remains lots to do and the new ICT Management Team are focussed on maintaining momentum to continue to improve ICT performance generally. Although much less frequent, there are still periods when the performance of ICT systems, such as email, is poor with slow response times or total outages. These issues are not IT virus related but are a result of poorly configured and unmaintained infrastructure that currently being addressed as a priority with the ICT Service.
- 5.4. Much of the Council's ICT infrastructure requires updating and better configuration to improve general performance and to be capable of supporting corporate objectives. It is this investment that now forms the focus of the ICT Service in 2010.

## **6. PRIORITIES FOR 2010**

- 6.1. In 2010 the ICT Service will be focussing its resources in the following areas:
  - Enabling organisational transformation,
  - Improving ICT system performance,

### **6.2. Enabling Transformation**

- 6.2.1. The following describes some of the work that the ICT Service will be undertaking in 2010 to enable the transformation of the organisation:

#### **6.2.2. *Flexible & Agile Working***

- 6.2.3. The ICT Service will work with colleagues within the Directorate of Transformation and from across all directorates to develop a Flexible & Agile Working Strategy. This strategy will be quickly followed by the implementation of IP telephony in One First Street that offers staff a range of new functions. These include the ability to 'clock-on' using the telephone and to direct their desk phone to any other location (including home).

6.2.4. A pilot project will be undertaken to explore a new way of working using laptop PC's. This will include the use of the laptop as a telephone, teleconferencing and video-conferencing. In addition to offering staff much improved levels of flexibility, this technology will reduce both travel time and cost and will result in a reduction on CO<sub>2</sub> emissions.

**6.2.5. *Unified Communications (Convergence)***

6.2.6. Having different supplier organisations provide technology around voice, data, fixed and wireless networks is not only expensive, but complicates the ICT estate and makes maintenance and development much more difficult. The ICT Service, working with Ernst & Young, will develop a 'unified communications' strategy that looks to consolidate these functions onto a single technology platform. By working with colleagues in Corporate Procurement, a provider will then be selected and the existing technologies rationalised. This will result in lower overall costs to the Council. By simplifying and consolidating technology, this will enable staff to integrate their communications across several mediums. For example text messages or voice messages sent to email inboxes and visa versa. Telephony can be integrated with email systems and therefore staff diaries resulting in improved conferencing capabilities.

**6.2.7. *ICT User Profiling***

6.2.8. The ICT Service will profile all users of ICT to better understand their requirements of technology. This will enable the ICT Service to implement a technology refresh programme that ensures hardware and software is maintained to both modern and common standards and is replaced when obsolete. The current ICT estate is inconsistent to unmanageable levels and adds significant unnecessary support costs.

**6.2.9. *Customer Relationship Management (CRM) System***

6.2.10. Having lead the procurement of a new CRM system, the ICT Service will implement the first 2 phases in 2010. This will enable the go live of a new Customer Service Centre in One First Street. This will offer the ability to capture all customer interactions using just one technology and gain a better understanding of customer requirements and the performance of service delivery.

**6.2.11. *Electronic Document Records Management System (EDRMS)***

6.2.12. The ICT Service will procure and implement an EDRMS that will fully integrate with the new CRM system. The EDRMS will provide a paper scanning facility that will reduce the volume of stored paper, reduce associated costs and significantly improve levels of both security and disaster recovery. The EDRMS will include workflow to improve efficiency when service delivery involves multiple teams. This will also increase the quality of information and reduce waste in the service delivery cycle.

### **6.2.13. Technology Lending Facility**

6.2.14. The ICT Service, working with colleagues in the Libraries Service, will explore the how a technology lending service could be delivered. This would involve the loaning of equipment, software and internet connectivity for a weekly or monthly fee and could provide customers access to technology that would otherwise be beyond their reach.

### **6.2.15. Ward Portal**

6.2.16. The role of ward coordination is key to the delivery of joined up service delivery across multiple agencies. The ward portal will provide relatively static information regarding the services available and how to access them, it will describe investment plans for the ward, an area for community leaders to communicate with residents (with an online, real-time surgery as an option). The ward portal will provide a consolidated view of the ward in one place, rather than residents having to access multiple sites to discover information relating to health, environment, crime, education and travel.

## **6.3. Improving System Performance**

6.3.1. The following describes some of the work that the ICT Service will be undertaking in 2010 to improve ICT system performance:

### **6.3.2. Technology Partner**

6.3.3. The ICT Service currently has over 25 suppliers, some providing the same service for the same technology and there is an opportunity to rationalise this supply chain. Support contracts with suppliers often do not match the level of service required by the customers and therefore service failure results. The ICT Service will establish a technology partner that will help rationalise both the supply chain and the diversity of technologies that are spread across the organisation. This will result in lower overall cost of ICT and improved support capabilities that can be passed on to customers.

### **6.3.4. Town Hall Data Centre**

6.3.5. ICT systems are currently hosted in 2 data centres, one of which is located in the basement of the Town Hall Extension. It is not considered best practice to host ICT systems in the basement of a building for a range of environmental reasons. The fact that it is located in a city centre poses the added unacceptable risk of failure through a civil emergency.

6.3.6. An alternative site has been identified to host the data centre away from the city centre. This site has been obtained in conjunction with the Manchester Digital Development Agency (MDDA) and offers improved environmental conditions, security and recovery capabilities. The move of

the data centre is a key part of the Council's ICT disaster recovery planning. It is expected that the new data centre will live by March 2010.

### **6.3.7. *ICT Disaster Recovery (DR) Plan***

6.3.8. The ICT Service now has an initial Disaster Recovery (DR) plan that is being used to priorities and direct investment in the ICT Service. This plan will be further developed throughout 2010, in conjunction with Ernst & Young, to ensure it is integrated with service contingency plans across the Council. It is important that any DR is regularly tested to ensure that it remains up to date and effective in supporting the organisation's critical systems. Testing of ICT DR plan will take place in 2010.

### **6.3.9. *System Monitoring Software***

6.3.10. A current ICT technology partner (Computerland) is preparing demonstrations of system monitoring products against a technical specification prepared by the ICT Service. It is expected that the system monitoring products will be procured by December 2009 and will be implemented throughout 2010. It will take some time to implement this product as it covers such a large area of the ICT estate and requires accurate configuration in order to the produce the expected benefits.

### **6.3.11. *Server Virtualisation***

6.3.12. Server virtualisation is a method by which services are spread across multiple servers to make the most of spare capacity, offer increased levels of resilience and improved disaster recovery. A virtualised server environment also requires significantly less servers, simplifies support and maintenance thus lowering costs and reduces CO2 emissions. The ICT Service has virtualised nearly 60 servers as part of it's current virtualisation project pilot. It is anticipated that the original target of between 200 virtualised servers will be completed by end of March 2010.

### **6.3.13. *ICT Service Consolidation***

6.3.14. The process of consolidating ICT across the Council to include infrastructure, staff and budgets has begun and is on target for completion by March 2010. Two ICT teams, Environment & operations and Chief Executives, have recently been consolidated into the ICT Service. These services are now operating to ICT Service policies. Agreement has been reached with all impacted Heads of Service that ICT will be consolidated into one central function, including staff and budgets.

### **6.3.15. *Two Factor Authentication***

6.3.16. Users currently log-on using username and password. Two Factor Authentication involves a third element, that of an 8 digit constantly changing number provided by a token. This offers much higher levels of

security and is required by the Government Connect Programme to allow the Council to access data from DWP and Contact Point (children's data). The ICT Service has trialled the technology this month and it will be deployed through 2010.

**6.3.17. Self-Service**

6.3.18. Many of the services requested of the ICT Service could be completed by staff themselves in a much faster and convenient way by using self-service. These services would include the resetting of passwords, access to applications, requests for new equipment and new starters \ leavers.