

	<p>Performance and Contract Management Committee</p> <p>31 May 2016</p>
<p style="text-align: center;">Title</p>	<p>IT operations</p>
<p style="text-align: center;">Report of</p>	<p>Director of Resources</p>
<p style="text-align: center;">Wards</p>	<p>All</p>
<p style="text-align: center;">Status</p>	<p>Public</p>
<p style="text-align: center;">Urgent</p>	<p>No</p>
<p style="text-align: center;">Key</p>	<p>No</p>
<p style="text-align: center;">Enclosures</p>	<p>Appendix 1: IT Disaster Recovery and IT Change Management audits¹</p>
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<p>Summary</p>
<p>IT was part of the outsourcing of services in the Customer Support Group (CSG) contract initiated in September 2013. Since the start of the contract, IT services have undergone a significant transformation whilst trying to maintaining a steady service – notable highlights include the complete overhaul of the network infrastructure and an increase in the resolution of ICT incidents within Service Level Agreement (SLA - resolving 94.5%, up from 81.4% at the start of the contract).</p> <p>At the Audit Committee on 19 April 2016, limited assurance audits on IT Disaster Recovery and IT Change Management were discussed and a motion carried to refer these to Performance and Contract Management Committee. These audits are therefore presented to this committee for discussion.</p>

¹ <http://barnet.moderngov.co.uk/documents/s31483/Annex%20A%20-%20Internal%20Audit%20Report%20Quarter%204%202015-16.pdf>

The library management system, Vubis, failed on 3 March 2016 which resulted in the loss of the system for an unacceptable extended period for use by residents and library staff. This report provides information on the root cause analysis of this failure, and a narrative on the work which has taken place to bring the system, and associated services, back into live operation. It also provides information on the further remediation work required.

A number of Members have raised dissatisfaction with IT which, along with the events described above, have raised valid concerns with the provision of IT for the Council and to residents. This report therefore sets out these concerns and provides an update on addressing them.

Recommendations

1. That the Committee consider and comment on the content of this report.

2. That the Committee notes the Council intends to present information on the assurance of IT systems in the First Quarter Customer Support Group performance report, to be presented to the Performance and Contract Management Committee on 6 September 2016.

1. WHY THIS REPORT IS NEEDED

- 1.1 IT was part of the outsourcing of services in the CSG contract initiated in September 2013. In terms of IT, the contract was established to 'modernise the Council's IT infrastructure (network, servers, telephony) and service systems (finance, HR, procurement etc.) so that they are more reliable and so that they support the Council in making further improvements in productivity (including, but not limited to, accommodation savings and further supply chain savings)².
- 1.2 At the Audit Committee on 19 April 2016, limited assurance audits on IT Disaster Recovery and IT Change Management were discussed and a motion carried "that the Audit Committee refer the Internal Audit reports on IT Disaster Recovery and IT Change Management to the Performance and Contract Management Committee for its consideration"³. These audits are therefore presented to this committee for discussion.
- 1.3 The library management system, Vubis, failed on 3 March 2016 which resulted in the loss of the system for use by residents and library staff. This report provides information on the root cause analysis of this failure, and a narrative on the work which has taken place to bring the system, and associated services, back into live operation. It also provides information on the further remediation work required.

² [Performance and Contract Management Committee, 'Performance of the Customer Support Group \(CSG\): Appendix 1, Overview, 7 January 2016.](#)

³ [Audit Committee, 'Internal Audit Exception Recommendations Report and Progress Report up to 31st March 2016', Draft Minutes, 19 April 2016.](#)

- 1.4 Following this failure, the Council commissioned CSG to carry out assurance activities on all IT systems hosted within the IT estate. This report provides information on this activity.
- 1.5 This report sets out some of the concerns and dissatisfaction raised by Members on IT and provides an update on addressing these. The report also provides information on the positive efforts of CSG and the Council to put in place strategic and operational improvements for the provision of IT for residents, Members and staff.

2. AUDITS ON IT RECOVERY AND CHANGE MANAGEMENT

- 2.1 Limited assurance audits on IT Disaster Recovery and IT Change Management were tabled at the Audit Committee on 19 April 2016 and are provided in appendix 1. An update on progress to implement the recommendations of these reports, along with updates on the overall implementation of disaster recovery and ITIL processes for the Council is provided in the following paragraphs.

IT Disaster Recovery (ITDR)

Findings:

- 2.2 The ITDR audit was conducted in 2015 during the data centre migration and Disaster Recovery (DR) project. At this time, the audit highlighted that suitable disaster recovery documentation was not readily available that would have enabled the IT teams to restore the Council's IT services in the event of a disaster event, to the contracted timescales. Whilst these were available in draft at the time, there are now approved documents in place. In addition to the limited assurance on areas such as documentation, the report stated that a key 3rd party recovery contract had expired and appropriate infrastructure in the secondary data centre location was not available. Capita can now evidence that the contract with the 3rd party had been renewed, albeit there was no testing or plans to demonstrate that the interim arrangements would work. Follow up audits are scheduled in 2016.

Improvements:

- 2.3 Since the commencement of the partnership with Capita, IT services have delivered a number of improvements to increase resilience, decreasing the risk of possible IT failures as part of its commitment to IT DR improvements. As part of implementing a new DR service for Barnet the following key projects have been completed:
 - Virtualisation of physical infrastructure providing increased resilience.
 - A relocation of the IT data centre from Barnet to Capita's state of the art facility with its own dedicated power substation, multiple diverse and secure fibre duct systems and multiple resilient network topologies

- A secondary disaster recovery centre (located at a separate site to the main data centre) which is diversely connected to the main data centre with infrastructure available to host services in the event of an emergency
- Asynchronous SAN to SAN replication with automated recovery devices ensuring that the Council's data is always replicated to an offsite location
- Automated backups and alerting systems for core infrastructure

Contract implications:

2.4 A follow up audit is again due in 2016 where these improvements will be reported independently to the Council and Members.

IT Change Management

Findings:

2.5 The IT Change Management audit conducted in 2016 found that change management is not yet effectively embedded into the organisation (due to it being relatively new) and it is not yet at the required level of maturity expected from an experienced IT Service Provider. This limits CSG's ability to effectively govern, manage, monitor and improve IT change and increases the likelihood of negative impact to services of the Council. The key areas of concern highlighted were lack of test systems available for all Council's IT services, lack of an appropriate system or controls to manage changes, and alignment to ITIL.

Improvements

2.6 Capita are again working closely with Council officers to provide continued improvements to the IT change management processes in place. Whilst this audit was also conducted in 2016, of the 30 recommendations, at this time, 24 recommendations have already been accepted and implemented successfully. To aid these improvements we are introducing a comprehensive Configuration Management toolset in 2016 that will move us away from a series of control spreadsheets and manual files that are currently in place to administer change management.

2.7 Capita regularly provide proposals to the Council that include both Test and Production environments as standard practice. Test systems are not always required for each and every system the Council uses and the Council and Capita jointly work together to provide the right balance between value for money and risk for the Council in determining where best to deploy them.

2.8 Whilst Capita maintain that it is already aligned to ITIL, the report identified numerous failures in post-event optimisation and reporting, not in the controls, management or deployment of services into the Council's live estate prior to the change which is of most importance to the Council's services. Regardless, all of

the recommendations, made by audit, have been taken on board and either implemented or scheduled in 2016.

Contract implications:

2.9 A follow up audit is again due in 2016 where these improvements will be reported independently to the Council and Members.

3. FAILURE OF THE LIBRARY MANAGEMENT SYSTEM

Background

3.1 VubisSmart is a library management system which holds all library customer and transaction data and which provides information on the holdings of libraries within Barnet, including detail regarding the location of books (and other items) and the ability to borrow, reserve and renew items.

3.2 On 3 March 2016 the Vubis library management system failed meaning that the following services became unavailable for residents and library staff: the library catalogue, online and in branch library accounts, reservations, renewals, some e-books, extended hours opening at Edgware Library, PCs for use by children and teenagers, and the stock purchasing and finance module for library staff. The library management system was rebuilt and provided back for testing to Libraries staff on 31 March 2016, and following a thorough test, was operational again to the public on 11 April, with the online catalogue and ability to renew items online operational for residents on 6 May 2016. Extended hours at Edgware Library was operational again on 1 April. This was delayed due to letters having to be sent out to Edgware Library registered residents with an amended PIN.

3.3 The timeline for the failure is as follows. On 2 March 2016, the third party support provider for the Vubis system (Infor) reported to LBB Libraries that the library system was running out of space on the server. Customer Support Group (CSG) responded to provide additional physical storage. At this time, it was unknown that back-ups for the system had been failing since the end of December 2015. The automated messages from Vubis alerting a nominated user of back-up failures were not being received. It was identified that although the Libraries system was sending the alerts they were not received to a monitored mailbox and configuration changes were needed to resolve this.

3.4 When the server was rebooted, it began to corrupt the data on the system. Whilst local backup processes were put in place these were backups to the local machine which also corrupted. The root cause analysis has been stated to be as follows:

3.5 A number of disk drives on the server displayed hardware failures. These were replaced and the system was left overnight to rebuild. This is a standard system administrative function to resolve a failed disk. Subsequently the server crashed

around 03.54 on 3 March 2016 and it is believed that the database files on Vubis became corrupted as a result of, or during, the subsequent required reboots.

- 3.6 A local backup process was put in place where data was backed up daily to the Vubis server as part of the system functionality. According to an investigation from the application support provider these local back-ups had started failing from 26 December 2015.

Remediation work to date

- 3.7 A key finding of the root-cause-analysis was the lack of appropriate error alerts reaching the Council, the 3rd Party or CSG. The key issue identified was that a recent upgrade of the Council's email system meant that these alerts were prevented from reaching the identified recipients. Compounding this, a request by the Council to redirect alerts to a member of the CSG IT team was incorrectly addressed by the 3rd party (Infor, the suppliers of Vubis) and could never have reached the recipient. Since the crash, we have made changes to ensure that all future IT alerting is routed to a number of CSG IT staff instead of being directed at a single email address. Additionally shared alerting mailboxes have been created with access by a number of key IT personnel who monitor this daily.
- 3.8 Since the failure of the system on the 2 March 2016 the following additional resiliency measures have been put in place to ensure that this kind of failure does not re-occur in the future:
- Upgraded to the most recent operating system and built new hardware
 - Upgraded to the latest release of the Vubis Smart LMS solution
 - Provided additional capacity and resilience in the storage
 - Created multiple levels of alerting both on LMS and on IT infrastructure
 - Built the new infrastructure with an offsite backup to a secure third party hosted provider
- 3.9 The Vubis system is now live to the public and staff including use of self-service kiosks. Data is being verified and any remaining data gaps in customer and stock records are being filled gradually. The on-site stock work should be completed by August, and a purge of the library catalogue will take place in September 2016 to ensure it is an accurate reflection of the library collection.
- 3.10 Telephone contacts from members of the public were moved back to the Capita call centre on 26 April 2016.
- 3.11 Work on the online catalogue and account functions is now completed following testing by the libraries staff this was made live to the public on the 6 May 2016. Along with this work, testing of the restored 'acquisitions' module by libraries officers is well underway and expected to be shortly. This module is only visible to library staff and so does not interface with the public, but it is important for the operation of the library service as it is the system through which all stock items

are purchased and paid for. Libraries are conducting EDI (automated file transfer) testing of data.

- 3.12 Netloan (the libraries Public PC booking and session management system) which has been running in cached mode since the failure, was also reconnected to the main libraries system on 4 May 2016. ITVA (self-service telephone renewals) is the last task to be made live for public access and will be reactivated shortly.

Contract implications:

- 3.13 Capita have funded all activities to bring the library IT system back into operation. Contractual discussions are taking place regarding other costs incurred by the Council. This incident and the results of the contractual discussions will be fed into the 3 year review of the CSG contract.

4. IT SYSTEMS ASSURANCE

- 4.1 Following the failure of the library management system, the Council commissioned CSG IT to carry out a system by system assessment of the applications held within the IT estate to provide the Council with assurance on the continued availability of systems. This evaluation is being performed against the architectural principles of:

- Robustness – server selection, age, supported software
- Resilience – capacity of CPU, RAM, disks, load/performance balanced
- Redundancy – standalone server or clustered
- Monitored – set thresholds, active monitoring
- Managed – threshold notification, backups scheduled, tested
- Disaster Recovery – in place, tested

- 4.2 A review of these findings is being discussed with system owners and reports will be presented within the Performance Report for Q1, to be presented to Performance and Contract Management Committee on 6 September 2016.

5. IT IMPROVEMENT PLANS

- 5.1 This report to date has focused on IT challenges; however, it should be noted that positive work has been taking place to implement strategic and operational improvements for the provision of IT for residents, Members and staff.

- 5.2 A number of Members have raised dissatisfaction with IT, and a Member working party has been formed to address both tactical and strategic matters relating to the Members IT service. Over 60 technical issues for Members were collected and a sub-team created within IT to action these throughout March and April 2016. Work continues with the working party and the Council's Governance team to create a series of IT proposals for Members that will enhance the way IT services are provided to Members. In addition to this, to address the issue of IT

guidance currently being located in various areas, and often being out of date, a single Members IT handbook is being developed, including updating key training material. This document will also clarify key IT contact details, escalation processes and visibility of the forward plan for Members IT. This document is in draft circulation to the working party and following feedback will be updated and released to all Members.

5.3 A series of proposals for more strategic IT improvements include:

- Extended out of hours service for Members
- Self Service password resets
- Improved email (Office 365)
- Drop In sessions / attendance at a stall e.g. at full Council meetings etc
- Review of IT equipment
- CMIS review – This is the review into Modern.Gov the Members & Governance teams' core system

5.4 In terms of IT more broadly in the partnership between the Council and Capita; IT services has undergone a significant transformation since contract commencement whilst still maintaining a steady service and maintaining key compliance standards such as PCI compliance⁴ and PSN compliance⁵. Notable highlights in this period have included restructures of the team to provide increased resilience and removal of single-points of failure by drawing down on specialist support from Capita IT services in the delivery of key IT service areas such as networks, infrastructure, schools, support desk etc.

5.5 The Council's website has been refreshed and the personalised 'My Account' functionality has been introduced. In addition to a complete overhaul of the network infrastructure and the move to Capita state of the art data centres, new IT equipment is currently being rolled out to officers to replace previously aged hardware.

5.6 Not under-estimating the challenges experienced by the IT service and not helped by the unfortunately high turnover of IT directors, an IT improvement plan has been put in place by the new IT Director (for stability Capita to assure / reassure that this will not be repeated), and is being actively implemented and monitored. Furthermore, a comprehensive IT strategy is being implemented to support Customer Service and Smarter Working priorities. This sets out a clear vision and roadmap for IT improvements over the coming years to meet the Council's strategic aims. Subject to usual business cases, this strategy seeks to implement a series of larger IT enabling projects for overhauling email, telephony, resident IT services, systems to deliver automation and various improvements to key Council line of business applications.

6. COMMERCIAL IMPACT

⁴ This stands for Payment Card Industry security standard - required when taking payment from cards such as Visa and MasterCard.

⁵ This stands for Public Services Network – required for connecting to Government services such as GCSx secure email and Department of Work and Pension systems for benefit payments.

- 6.1 Since the commencement of the contract in September 2013, four service credits have been incurred to date totalling £27,240. In three quarterly periods IT Services have failed the KPI for Critical Systems Availability and in one quarter the KPI for Resolution of Incidents within SLA has been missed.
- 6.2 There are 35 contractual Commitments for IT Services. Of these:
- 13 have been delivered and signed-off by the Council. These include delivery of an Information Security Management System, a Data Warehouse solution for Commissioning and an annual Business Impact Analysis
 - 10 delivered but not yet signed-off
 - 10 overdue
 - 2 future commitments not yet required
- 6.3 To date there have been six Contract Variations covering IT Services with a net financial effect of (£9,000). The most significant has been for an accelerated refresh of all employee end-user computing devices within 18 months. This is a change to the original approach of refreshing all staff devices twice over the course of the ten year contract, at a rate of a 20% refresh per year.

7. REASONS FOR RECOMMENDATIONS

- 7.1 The assurance of IT systems has been commissioned by the Council to reflect the importance of ensuring that business systems are appropriately hosted and controlled. Reporting the status of this assurance in the Q1 performance report will give Members the necessary oversight of this process.

8. ALTERNATIVE OPTIONS CONSIDERED AND NOT RECOMMENDED

- 8.1 Not applicable

9. POST DECISION IMPLEMENTATION

- 9.1 The assurance of IT systems will conclude and the results presented at a later date.

10. IMPLICATIONS OF DECISION

10.1 Corporate Priorities and Performance

- 10.1.1 An efficient and effective IT service underpins the priorities set out in the corporate plan by enabling officers and Members to work using fit for purpose systems and equipment.

10.2 Resources (Finance & Value for Money, Procurement, Staffing, IT, Property, Sustainability)

- 10.2.1 As part of CSG, the IT service is delivered by Capita. Capita has funded the

activities required to bring the library IT system back into operation.

10.3 Social Value

10.3.1 Not applicable.

10.4 Legal and Constitutional References

10.4.1 The [Council's Constitution, in Part 15 Annex A, Responsibility for Functions, states](#) the functions of the Performance and Contract Management Committee include (amongst other responsibilities):

- a) Overall responsibility for quarterly budget monitoring, including monitoring trading position and financial strategy of Council Delivery Units.
- b) Monitoring of Performance against targets by Delivery Units and Support Groups including Customer Support Group; Re: the Barnet Group (Including Barnet Homes and Your Choice Barnet); HB Public Law; NSL (Parking Contractor); Adults and Communities; Family Services; Education and Skills; Street Scene; Public Health; Commissioning Group; ad Assurance.
- c) Receive and Scrutinise contract variations and change requests in respect of external delivery units.
- d) To make recommendations to Policy and Resources and Theme Committees on relevant policy and commissioning implications arising from the scrutiny of performance of Delivery Units and External Providers.
- e) Specific responsibility for the following function within the Council:
 - a. Risk Management
 - b. Treasury Management Performance
- f) Note the Annual Report of the Barnet Group Ltd

10.5 Risk Management

10.5.1 Not applicable.

10.6 Equalities and Diversity

10.6.1 Not applicable

10.7 Consultation and Engagement

10.7.1 Not applicable

10.8 Insight

10.8.1 Not applicable

11. BACKGROUND PAPERS

- 11.1 [Performance and Contract Management Committee, ICT Operations - ITIL Methodology Assessment, 7 January 2016](http://barnet.moderngov.co.uk/ieListDocuments.aspx?CId=693&MId=8407&Ver=4)
- 11.2 [Children, Education, Libraries & Safeguarding Committee, Barnet's Future Library Service - appendix L, 23 March 2016](http://barnet.moderngov.co.uk/ieListDocuments.aspx?CId=697&MId=8261&Ver=4)
- 11.3 [Audit Committee, 19 April 2016 - Internal Audit Exception Recommendations Report and Progress Report up to 31st March 2016](http://barnet.moderngov.co.uk/ieListDocuments.aspx?CId=144&MId=8416&Ver=4)