

11 September 2019**Agenda Item: 6****REPORT OF THE SERVICE DIRECTOR FOR FINANCE,
INFRASTRUCTURE AND IMPROVEMENT****NATIONAL AUDIT OFFICE GUIDANCE FOR AUDIT COMMITTEES ON
CLOUD SERVICES****Purpose of the Report**

1. To provide Members with a review of the advice for audit committees on cloud services provided by the national audit office, an assessment of the current state for Nottinghamshire County Council against this advice and to brief Members on the current activity to strengthen the Authority's position where required.

Information and Advice**Background**

2. The County Council's approach to the use of cloud services has reflected national government advice and has, since 2014, adopted a cloud first stance within the ICT strategy.
3. The National Audit Office (NAO) guidance for audit committees (Appendix 1) recognises the different elements of cloud service provision and provides, in figure 1 of the advice, an effective summary of the constituent parts of a cloud platform.
4. In order to support audit committees in their oversight and governance of how cloud services are utilised within their organisations, the guidance recommends a number of questions are posed and the responses monitored.
5. These questions are broken down into 3 main groups:
 - Assessment of cloud services. This section considers cloud services as part of organisational and digital strategies; the business case process; and due diligence.
 - Implementation of cloud services. This section covers system configuration; data migration; and service risk and security.
 - Management of cloud services. This section covers operational considerations; the need for assurance from third parties; and the capability needed to manage live running.
6. When considering the advice provided by the NAO, it must be noted that Nottinghamshire County Council has embarked on a cloud journey – due to complete in 2020 - that will result in the decommissioning of the current data centre.

7. This cloud programme is currently in the implementation phase and will result in the migration of the majority of the current 600+ servers, 500+ applications, and the core technology services such as email etc to the Microsoft cloud platform.

Current state assessment

Assessment section

8. As part of the commissioning process for the current cloud program, a business case was produced which included the necessary options appraisal and due diligence referred to in section 2 of the NOA advice. This business case recommended the engagement of Microsoft, via the Navigator program, to facilitate the required cloud services platform required by the Authority. As such the assessment for section 2 is summarised as:

Assessment	
1. What are the priorities for the digital strategy?	Green
2. What are the technical requirements?	Green
3. Is the complexity of legacy system issues really understood?	Green
4. Will best practice be followed in respect of security?	Green
5. Are private cloud, public cloud, and on-premises options all considered?	Green
6. How sensitive are planned costs to scenario testing?	Green
7. What extra skills and capacity will be needed?	Green
8. What time horizon is being considered in the commercial model?	Green
9. What is the cost of implementing and operating countermeasures to mitigate risk?	Green
10. Will there be clear accountability between the organisation and cloud provider?	Green
11. Have the service features being promoted been verified?	Green
12. What are the terms of service?	Green
13. Where is the provider's infrastructure physically situated, and in what jurisdiction(s) is the organisation's data being held and accessed?	Green
14. Will the cloud service contract be governed by the law and subject to the jurisdiction of the United Kingdom?	Green
15. What security accreditation and protocols does the provider have?	Green
16. Has the technical architecture of the system been reviewed by appropriate experts?	Green
17. Does the organisation understand what security information will be fed back from the provider as part of the service?	Green
18. Has the organisation considered the costs of exiting from a cloud provider to take advantage of competition in the market?	Green

Implementation section

9. The implementation phase of the cloud programme has strong governance in place with project boards established at project, programme and corporate levels with reports presented to Members via the improvement and change sub-committee.
10. All contractual arrangements have had input from procurement and legal services and the security implications are reviewed and signed off by the technical design authority as part of the design process.
11. The adoption and change elements of the implementation have a specific workstream that includes the impact on the end user and the relevance of the technology being introduced.
12. Therefore, the summary for the implementation section of the guidance is as follows:

Implementation	
1. Is there a strong governance and project management plan in place?	Green
2. Have infrastructure, applications and data been prepared for the move?	Green
3. Is the organisation overly reliant on third-party resource?	Green
4. Is the organisation following configuration best practice?	Green
5. Will people be ready for the new systems?	Green
6. Are technical risks covered with clear responsibilities and mitigating actions?	Green
7. Are the required legal and policy agreements in place?	Green
8. Have business continuity plans been updated?	Green
9. Are plans in place to cover the event of data loss?	Green
10. Are financial controls fully tested and compliant with best practice?	Green
11. Have key stakeholders been engaged through a comprehensive change management strategy?	Green
12. Are contingency plans in place to manage implementation issues?	Green
13. What plans are there for technical and user acceptance testing?	Green
14. Is there sufficient information for a Go / No Go decision?	Green

Management

13. As part of the cloud programme an operational cloud services team has been assigned the responsibilities outlined in the operations section of the guidance. This team works closely with specialist resource provided by Microsoft and processes are in place to ensure knowledge transfer.
14. While significant focus has been on reporting and monitoring functionality available via the Microsoft Azure cloud platform and O365 cloud service, this is an evolving piece of

design that will strengthen as the project moves through implementation to operational phases.

15. A new operating model for ICT services is currently being drafted that will ensure that appropriate capacity and capability exists within the technical functions in the authority and due consideration will be given to the questions posed within the guidance. It is envisaged that this new operating model will be considered by Policy Committee during October 2019.
16. The summary for the management section of the guidance can therefore be summarised as follows:

Management	
1. Is there effective governance to prioritise the removal of any temporary workarounds?	Green
2. Is there clear oversight over what the cloud providers are planning?	Green
3. Are responsibilities clear for system changes, upgrades and patches?	Green
4. Is there sufficient capability to take advantage of the reporting functionality?	Green
5. Is the organisation monitoring its usage of the cloud to confirm that it is getting the best value?	Green
6. Does management understand the general scope and limitations of different Service Organisation Controls reports?	Amber
7. Is management clear on the scope of controls tested and the extent of testing?	Amber
8. Do Service Organisation Controls reports give assurance on the success of operational controls over time?	Amber
9. Are Service Organisation Controls reports frequent enough to keep pace with continuous improvement?	Amber
10. Does management carefully scrutinise Service Organisation Controls report findings?	Amber
11. Will the organisation retain the necessary technical knowledge post-implementation?	Green
12. Does the technical team have the capability to take full advantage of the cloud systems?	Green
13. Will there be sufficient capability to manage updates, downtime and system changes?	Green
14. Will there be sufficient commercial and legal capacity to challenge value for money and compliance?	Green
15. Is there sufficient base-level stakeholder capability to optimise cloud system usage?	Amber

17. The questions are rated as amber above as the specification and monitoring of control reports will mature as utilisation of the cloud platform evolves over time. Processes are in place to publish the new reporting and strategic guidance concerning the content of these reports will be sought from the corporate leadership team. Recommendations will then be made to the Improvement and Change sub committee and Governance and Ethics committee on the reports presented for information.

Summary

18. The NAO guidance provides a sound blueprint for considering the questions posed in consuming cloud services. The authority has taken the strategic decision to utilise cloud services extensively and the programme of work to deliver this new infrastructure and services is due to complete in 2020. As such, much of the guidance has already been considered as part of this process.
19. The new ICT operating model will ensure that the right capability and capacity are in place to deliver a reliable, efficient and effective platform in order to support the existing and new technical services provided to the authority's end users.

Statutory and Policy Implications

20. This report has been compiled after consideration of implications in respect of finance, equal opportunities, human resources, crime and disorder, human rights, the safeguarding of children, sustainability and the environment and those using the service and where such implications are material they are described below. Appropriate consultation has been undertaken and advice sought on these issues as required.

RECOMMENDATION

It is recommended that:

- 1) Members agree to receive an update report in 6 months' time and consider what further action they wish to take.

Nigel Stevenson

Service Director Finance, Infrastructure and Improvement

For any enquiries about this report please contact:

Adam Crevald, Group Manager Design (ICT) (0115 9772839)

Constitutional Comments (HD 26/8/2019)

The recommendations fall within the remit of the Governance and Ethics Committee by virtue of its terms of reference.

Financial Comments: (SES 03/09/19)

There are no specific financial implications arising directly from this report.

Background Papers

None

Electoral Division(s) and Member(s) Affected

All