Council
3 May 2018
Review of IT cloud infrastructure

Classification	Public
Purpose	For decision
Issue	The GOsC IT infrastructure sits within a cloud environment, hosted by a third party provider, and has done so for the last five years.
	A review of the existing IT cloud infrastructure has identified some deficiencies which can be resolved through changes to the current provider arrangements.
Recommendation	1. To note the content of the paper.
	2. To agree to delegate to the Executive authority to identify the most appropriate cloud storage provider.
Financial and resourcing implications	We anticipate that a transition to a new hybrid cloud solution will generate savings of c.£9k per year based on current expenditure.
Equality and diversity implications	Any future IT cloud infrastructure will continue to support employees that require reasonable adjustments to undertake their work with the GOsC, i.e. Dragon Naturally Speaking software.
Communications implications	None
Annexes	None
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Background

1. The Executive has recently undertaken a review of the current IT cloud infrastructure to identify potential improvements to support the work of the GOsC over the medium term.

2. The GOsC's IT environment has evolved over the life of the organisation and which has been developed to ensure the GOsC can face future challenges while ensuring the security of data. Key milestones highlighting this evolution are shown below:

   a. From 1997-2008, GOsC IT systems consisted of a number of linked Access databases supported by an internal staff resource. IT servers were maintained in-house with data back-ups completed daily, and tapes taken offsite.

   b. In the period from 2008-12, GOsC migrated away from the linked Access databases to a single Customer Relational Management Database, which centralised registrant data such as address information, key attributes and registration fee charges. All software and data was maintained on GOsC servers with data back-ups completed daily, and tapes taken offsite.

   c. In 2012, the GOsC transitioned to a cloud computing environment with IT resource outsourced. GOsC data is securely held in a cloud environment (hosted by a third party) and the need for the GOsC to complete daily data back-ups was eliminated. Additionally, the cloud environment provided greater opportunity to work from home or abroad as an individual was able to log into the cloud using the secure remote desktop application.

   d. In 2017, Crowe Clark Whitehill (CCW) undertook an independent IT audit to assess IT security and internal processes and controls. The report provided limited assurance, and the Registration and Resources team was restructured to bring back in-house greater IT expertise. Throughout 2017 and into early 2018, the focus has been on ensuring the implementation of the recommendations of the IT audit. This work has been overseen by the Audit Committee and is now complete.

Discussion

3. The GOsC IT function has recently undertaken a comprehensive review of the cloud environment to assess its continued suitability and fitness for purpose. The review has been undertaken in full awareness of the new General Data Protection Regulations (GDPR) and is also consistent with the approach taken over the last two decades, which has seen the GOsC IT environment be subject to continuous improvement and evolution.

4. The review identified a number of advantages of the current cloud environment and a number of areas of deficiency where the current arrangements are not

aiding the most flexible and efficient working practices. These are summarised below:

Advantages

a. The current cloud environment provides members of staff access to software regardless of where they are in the world through the secure remote desktop application.

b. All data is hosted in one place and back-ups are completed by the third party provider. The data hosting is in a certified environment and on-site data servers are not required.

c. The current IT cloud provider acts as a central plank of the GOsC business continuity plan.

Disadvantages

a. The cloud provider has no plans to upgrade the current environment which means GOsC faces the risk of existing systems losing functionality or worse, being exposed to increased risks around security.

b. Limited administrator rights result in delays to simple change requirements with users required to raise support tickets. All change requirements, e.g. password updates, need to be actioned by the third party provider.

c. Not all third-party software is supported in the current cloud environment, such as newer versions of Google Chrome or GoToMeeting. Newer technologies will not be compatible with the operating system which is on an older platform and the software on that older platform will soon lose manufacturer support.

d. The staff user experience is restricted through not being able to access the latest software or have it integrate with other software. For example, videos need to be viewed outside of the cloud environment.

5. The Executive has reached the view that the current cloud environment, and specifically, the cloud provider, represents a barrier to GOsC having a fit for purpose IT environment to support our work in the future. The Executive has concluded that we can retain the advantages of the cloud environment, while resolving the difficulties we are currently experiencing by implementing what we describe as a hybrid cloud solution.

6. A hybrid cloud solution is a mix of on-premises devices (i.e. PCs rather than servers), managed by the GOsC IT function, and off-premises data storage managed by third parties. The hybrid solution would see staff utilise their local PCs to access software, rather than logging into the cloud environment through the remote desktop application, but with data kept securely within an external

cloud environment. This model of service provision is relatively new and has emerged since the current cloud computing approach was adopted in 2012.

7. The Executive has identified three possible providers where the data could be stored in a secure, safe environment that meets GDPR requirements, and which would allow GOsC to take back control of more administrative rights functionality of the software that is uses. The providers are:

    a. Microsoft
    b. Amazon
    c. Google.

8. Smaller third party providers have been excluded from the analysis so that we can guarantee data security within a certified environment, and we can ensure the hybrid cloud solution is suitable for our requirements.

9. Initial costings have identified the move to a hybrid cloud environment would generate a financial saving of c.£9k per annum against current expenditure of £36k.

10. The transition from the current cloud environment to a hybrid cloud environment would be undertaken over a number of months and would involve a series of phases so to minimise risk. Broadly, these phases would be as follows:

    Phase 1: upgrade onsite server
    Phase 2: move email system to new provider
    Phase 3: prepare and test for transition of data relocation
    Phase 4: transfer data and implement new hybrid system
    Phase 5: training and support for internal users.

11. The transition to a hybrid cloud solution is the next step in the natural evolution of the GOsC IT development. It would retain the benefits of the current setup, i.e. continued data security and the cloud environment being a central plank of the business continuity arrangements, while allowing GOsC to retake control of administrator tasks/rights and ensuring that the systems we work from use up-to-date software. The latter point will ensure the GOsC team has greater flexibility to meet future work projects.

Governance around selection of hybrid cloud provider

12. We anticipate that the hybrid cloud solution will be one which will be in place for at least five years. With this in mind, while the annual spend will be c.£27k, the total spend over that period will be proportionately greater.

13. The Governance Handbook sets out that for contracts where the expected value is over £50,000 a number of steps are required with the procurement approach. These include setting out for Council the business case which has been discussed above.

14. The Governance Handbook also states that Council should be aware of the procurement approach with the establishment of a procurement panel involving the Chair of Council or another Council member. The procurement panel should make the final recommendation.

15. The Executive is proposing a variation to the procurement process as, on this occasion, a traditional tender panel interview is unlikely to be practical with the three identified providers.

16. Analysis of the cloud providers will be undertaken in-house by the GOsC IT function and the Executive requests that Council delegate authority for the final decision to the Chief Executive and Registrar, the Head of Registration and Resources and the IT and Business Support.

17. It is proposed that Council will receive an update on this work at the July 2018 meeting.

Recommendation:

1. To note the content of the paper.

2. To agree to delegate to the Executive authority to identify the most appropriate cloud storage provider.