

Overview and Scrutiny Committee Report

Ward(s) affected: All

Report of Director of Resources

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ICT Refresh Programme Update

Executive Summary

The ICT Refresh Programme was discussed at Overview and Scrutiny Committee in March 2020. At the time, the programme was migrating Officers to Windows 10 devices, but was awaiting the recruitment of a new Lead Specialist for ICT, to drive the server, network and storage part of this programme forward. The committee asked for an update to be provided to them six months later, or when the programme completed, whichever was the sooner. This report is intended to provide that update.

Recruitment of the new Lead Specialist for ICT took longer than expected, but completed in June, with James Beach joining the Council on 22nd June. Since then, ICT has reviewed the current position and identified actions to progress the refresh. Bearing in mind the priority of the Future Guildford programme delivery, the refresh works will largely use existing Business System providers, to complete migrations.

The ICT Refresh Programme is effectively made up of two distinct projects, the end-user device refresh, and the infrastructure (server, network and storage) refresh.

- The end-user device refresh has been largely completed. Only the Guildford Crematorium and Council meeting room devices remain to be migrated. Regular scanning of the Council network is being carried out to mitigate the risk of unidentified legacy hardware remaining in-use. Officers expect to complete this end-user device refresh by the end of 2020.
- The infrastructure refresh (server, network and storage) is outstanding, and requires the migration of approximately 80% of the Council's systems. This is a significant ICT undertaking, particularly in-parallel to the Future Guildford programme. Two servers run the outdated Windows Server 2003 operating system. Work is underway to migrate these services as a priority. It is expected that both servers will be powered down before the end of November 2020. Whilst resource contention with the Future Guildford programme makes it difficult to accurately predict a timeline for the remaining servers, officers estimate that all outdated servers will be powered down

before the end of June 2021.

Recommendation to Committee

That the Committee notes the progress of the ICT Refresh Programme as set out in this report, and comments as it feels necessary.

Reason(s) for Recommendation:

To ensure the ICT Refresh Programme is being implemented.

Is the report (or part of it) exempt from publication?

No

1. Purpose of Report

- 1.1 The ICT Refresh Programme was discussed at Overview and Scrutiny Committee in March 2020. At the time, the programme was migrating officers to Windows 10 devices, but was awaiting the recruitment of a new Lead Specialist for ICT, to drive the server/network part of this programme forward. The committee asked for an update to be provided to them six months later, or when the programme completed, whichever was the sooner. This report is intended to provide that update.

2. Strategic Priorities

- 2.1 The ICT strategy and a sustainable modern ICT infrastructure underpins all the Council's strategic priorities by enabling the Council to deliver services for the Borough, residents, and visitors. The ability to deliver Council services is dependent on the delivery of stable and secure ICT services. Migrating to more up to date hardware, and upgrading legacy operating systems will mitigate resilience and security risks, and contribute to the strategic priority of 'Using innovation, technology and new ways of working to improve value for money and efficiency in Council services'.

3. Background

- 3.1 The ICT Refresh Programme is effectively made up of two distinct projects, the end-user device refresh, and the infrastructure (server, network and storage) refresh. This report separates these two projects for clarity.

End-user device refresh project

- 3.2 This project targeted Council owned end-user devices, 'such as desktop computers, laptops, thin clients, tablets and mobile phones'. This included the Council owned end-user devices used by Councillors, as well as those used by officers. Mobile phones were specifically excluded from the scope of this

programme, as officers considered them to be up to date at the time of project initiation.

- 3.3 Under this project, the Council decided to decommission all thin client devices, moving primarily to laptops, with a small level of re-use of existing desktop computers.
- 3.4 It should be noted that the Coronavirus pandemic has meant that most desktop users have now been issued with older laptops as a fast response, to support officers being able to work from home. To better enable flexible working in the long term, the Council is now pursuing a laptop-first approach, purchasing laptops as our end-user devices reach the end of their supported lifecycle, unless a specific need exists for a desktop PC (e.g., a shared workstation need).

Windows 10 rollout to Officer devices

- 3.5 Most officers were migrated to Windows 10 devices prior to the Coronavirus lockdown. Only six individuals at Guildford Crematorium have yet to be migrated at the time of this update. The business system used by Guildford Crematorium requires an upgrade to make it compatible with Windows 10, and this is currently being considered together with a replacement system option. It is expected that officers will have been migrated by the end of 2020.

Meeting room PCs

- 3.6 There are currently PCs in many meeting rooms, to support presentation and conferencing needs. These run the outdated Windows 7 operating system. Windows 7 support ended 14th January 2020. With most officers now using laptops that can be connected to screens in meeting rooms as needed, these meeting room PCs are being considered for removal. It is expected that these devices will be decommissioned before the end of October 2020.
- 3.7 It is the view of officers that the only activities remaining under the end-user device refresh project, are as defined in paragraphs 3.5 and 3.6.

Infrastructure (server, storage and network) refresh project

- 3.8 This project was to target 'networks, routers, switches, servers, storage and associated operating systems'.
- 3.9 Most of the Council's business systems run on outdated hardware and operating systems, which pose both a security and resilience risk to the organisation. The Council purchased new server and network infrastructure hardware in 2018, which runs alongside the outdated hardware. This project was setup to migrate systems from the outdated hardware, either to Software-as-a-Service (SaaS) solutions, or to the newer on-premise hardware.
- 3.10 Whilst the migration of business systems is usually an ideal time to review the choice of business system, including hosting offering, officers consider the delays to migrations that would be created by such reviews to outweigh the benefits. This is due to the security and resilience risks of the outdated hardware.
- 3.11 Where Council systems will be migrated to the newer on-premise hardware, they will be reinstalled rather than copied. This will ensure that the latest Council

security standards are applied to the servers, and that the server operating system is replaced with the latest supported version.

Out of Support Operating Systems

- 3.12 The old infrastructure runs a mixture of Windows Server 2003, Windows Server 2008 R2, and a handful of Linux servers.

Windows Server 2003

- 3.13 Windows Server 2003 support ended on 14th July 2015. This means no patches have been released since this point, except for an emergency patch released by Microsoft in May 2017 in response to the worldwide spread of the WannaCry ransomware.
- 3.14 At the time of writing, the Council has two servers remaining that are running Windows Server 2003. Work is underway to migrate these services as a priority. It is expected that both servers will be powered down before the end of November 2020.

Windows Server 2008 R2

- 3.15 Windows Server 2008 R2 support ended 14th January 2020. This means no patches have been available to the Council since this point. At the time of writing, the Council is negotiating the cost for Microsoft Extended Support for these servers, which will provide the Council with access to Microsoft patches until the end of the year, when a further Microsoft Extended Support agreement would be possible to cover any remaining servers until the end of 2021.
- 3.16 As mentioned in paragraph 3.10, server operating systems are being replaced as part of migrating Council systems from the old server infrastructure.
- 3.17 Whilst the resource contention (see section 8. Human Resource Implications) makes it difficult to accurately predict a timeline, officers estimate all Windows Server 2008 R2 servers will be powered down before the end of June 2021.

Linux

- 3.18 The Council old infrastructure has five servers that run a variety of Linux versions. Two of these are maintained by a third party as part of a support arrangement. The remaining three are in-need of an operating system upgrade. These systems will be migrated or decommissioned as part of this project. Officers estimate these servers will be powered down before the end of June 2021.

Out of scope

- 3.19 Mobile phones - As referenced in section 3.2, mobile phones were specifically excluded from the scope of this programme, as officers considered them to be up to date at the time of project initiation.
- 3.20 Old Millmead House - Old Millmead House has been considered out of scope for this programme, as officers expected that Council officers would move out of the building into New Millmead. Given the outdated nature of the infrastructure in the building, should expectations change, a refresh of the hardware is likely to take

place outside this programme of works.

- 3.21 Appliances - The infrastructure part of this programme has targeted systems running on the Council's server. Dedicated 'appliances' are used for some specialist services (e.g. CCTV). These appliances were not scoped into this programme of works and will be reviewed as the programme identifies them. It is possible that these will be added to the scope, dependant on the age and suitability of the appliances.
- 3.22 New infrastructure improvements – This programme seeks to move services away from the outdated ICT infrastructure to a mixture of Software-as-a-Service, and the existing newer ICT infrastructure. Any improvements to the existing newer ICT infrastructure are assumed to take place outside this programme of works.

Lifecycle modelling

- 3.23 There is still significant work to complete the refresh of the ICT estate. This programme has been necessary due to the investment approach in ICT. It is the opinion of the new Lead Specialist for ICT that this approach is outdated and creates large financial and resource demand in waves (often every five years). It also leaves the organization open to security and resilience risks between waves.
- 3.24 As this programme completes, the new Lead Specialist for ICT intends to move towards a lifecycle-based approach for both end-user devices, and infrastructure (server, network and storage) devices. This means hardware will be phased out when it reaches a certain age, based on manufacturer and industry standard recommendations of when the risk of failure is elevated. This is often around three to four years for laptops, and four to five years for servers. This approach supports better security and resilience, as well as making ICT spend more predictable.

4. Consultations

- 4.1 The Lead Councillor for Governance has been consulted about this report.
- 4.2 Input from Service Leaders within the Council, amongst other factors, is being used to influence the order of Business System migrations.

5. Key Risks

- 5.1 *Failure to retain Public Sector Network (PSN) compliance* – The use of unsupported operating systems without an extended support agreement to cover these poses a risk to retaining PSN compliance. The Council's PSN compliance assessment is due in December 2020. The Council's use of Windows Server 2003 and Windows 7 pose a risk to such compliance. Officer conversations with our assessor in the run-up to the assessment lead us to believe that Windows 2003 is a high risk to this. As stated in paragraph 3.14, the decommissioning of

these servers is being prioritised, and officers expect they will be powered down before the end of November 2020, prior to the PSN compliance assessment.

- 5.2 *A security breach occurs, caused by the continued use of legacy software* – The risk of a security breach can never be fully mitigated, however the continued use of out-of-support operating systems gives the Council an unnecessarily elevated risk profile. As detailed in paragraphs 3.5, 3.6 and 3.14, plans are currently in-place to decommission all out-of-support operating systems. Officers expect these operating systems to be decommissioned before the end of 2020.
- 5.3 *Lack of resource availability (ICT or business) delays the programme timeline* - The large scope of the business system migration works means that engagement will be needed with officers from most parts of the Council, to agree the approach and timing of migrations that affect their team. Other Council priorities including Future Guildford may distract key stakeholders, and delay migrations. Early engagement with Service Leaders will be used to time migrations where possible.
- 5.4 *Unknown legacy end-user devices are not identified and therefore upgraded* – Regular network scanning is taking place to identify any legacy devices connecting to the Council network, to mitigate this risk. There will also be an opportunity to identify any devices that have been missed, as legacy devices are disposed of, and older devices still in the organisation become more apparent in the Council's asset register.
- 5.5 *Unknown legacy infrastructure hardware is not identified and therefore upgraded* – the core ICT server, network and storage devices are installed in dedicated server/communications rooms in Millmead. This means a physical inspection of these rooms will help identify the majority of such hardware. Remaining infrastructure hardware is likely to be dedicated appliances, and will look to be identified by network scanning prior to the decommission of the old network infrastructure.
- 5.6 *Insufficient funding for migration/decommission activities* - Budgetary and planning estimates have been used to forecast the cost of the first phase of business system migrations. A similar process will be followed for the second phase. There remains a risk that migration costs are identified that exceed the funding available from the ICT renewals hardware/software budget.
- 5.7 *A major outage occurs, caused by the continued use of outdated hardware/operating systems* – Outdated hardware, as well as out-of-support and extended support operating systems all pose increased resilience risks. As detailed in paragraph 3.14, plans are currently in-place to decommission all out-of-support operating systems. Officers expect these operating systems to be decommissioned before the end of 2020. This risk will be mitigated for each system as it is migrated off the outdated hardware, the criticality of each system will therefore be one of the factors in determining the order systems are migrated.

6. Financial Implications

- 6.1 Spend up to March 2020 on the project was £1.695million against a revised budget of £1.485million. As reported to O&S committee in March this represented an overspend against the revised budget of around £210,000. The overspend predominantly related to increased costs of the external technical contract and a higher cost acquiring the end user devices.
- 6.2 In September 2020 a virement of £55,750 was approved from the ICT renewals hardware/software budget to fund the first phase of business system migrations from legacy infrastructure. This includes the migration or decommissioning of twenty-three systems. Three systems are planned to migrate to software-as-a-service offerings, with ongoing annual charges of approximately £17,000. The on-going revenue charges will be funded through a permanent virement from the corporate inflation budget to the ICT licence fees budget. Expenditure incurred in 2020 up to period 4, in relation to the ICT refresh project has been £29,000.
- 6.3 A second phase of business system migrations will be required to complete the migrations and enable the decommission of the outdated infrastructure hardware. Eleven systems have been identified at this point that will form this phase. Options for the migrations will be considered in-parallel with the first phase delivery. Officers expect to use the ICT renewals hardware/software budget to fund this future stage, once options have been chosen and pricing negotiated.

7. Legal Implications

- 7.1 Where third parties are used for the delivery of migrations, or systems are replaced as part of migrations (e.g. moving to a software-as-a-service offering), as well as purchasing of new equipment and any other goods or services, the Public Contract Regulation 2015 and the Council's internal Procurement Procedure Rules must be followed. In addition, the Council has a duty to ensure that 'best value' is being achieved when purchasing goods and services.
- 7.2 The Council's Procurement Procedure Rules require that the Council's own terms and conditions are used to contract with contractors where a framework agreement is not being used. The agreement of the Lead Legal Specialist should be obtained before contracting on the contractor's terms and conditions.

8. Human Resource Implications

- 8.1 The remaining infrastructure activities in this programme have a significant resource implication for the ICT team. This includes work for the identification of all legacy systems, review of migration options, design and implementation of target architecture, and the engagement & management of implementation partners.
- 8.2 There is also a contention for specific ICT resources, with the Future Guildford programme. To minimise the potential for impact on the Future Guildford Programme, the majority of migrations will be conducted by Council system suppliers. The timing will also remain flexible, such that migrations are engaged

when officer capacity exists, to avoid resource contention with the Future Guildford Programme.

9. Equality and Diversity Implications

- 9.1 This duty has been considered in the context of this report and it has been concluded that there are no equality and diversity implications arising directly from this report.

10. Climate Change/Sustainability Implications

- 10.1 The migration of officers from iGel thin client devices, and the decommissioning of older server, network and storage devices will generate a quantity of unused devices. Some devices may be able to be repurposed within the Council, but the majority will effectively be considered waste by the Council. Whilst the exact plan for the disposal of these devices has not been formalised, officers expect to consider options to sell or donate devices in bulk to another authority, local school/college, or an authorised WEEE compliant recycling organisation. For example, the Council has previously sold unused iGel thin client devices to Waverley Borough Council.
- 10.2 From an energy use perspective, as both old and new server, network and storage environments are used today, an energy use reduction is expected by officers as a result of the final stage of this ICT Refresh Programme. This reduction has not been measured, as this is a positive consequence of these necessary works.

11. Suggested issues for overview and scrutiny

- 11.1 Overview and Scrutiny committee are asked to note this update report and ask questions and comment as necessary.

12. Summary of Options

- 12.1 Not applicable. This report is purely an update.

13. Conclusion

- 13.1 The ICT Refresh Programme has nearly completed the planned end-user device replacement, and steps are underway to decommission the last remaining Windows 7 devices from the organisation. Following this programme, expected device lifecycles will be set in-line with common industry standards, and used to budget for the ongoing replacement of end-user device replacements.
- 13.2 The majority of Council systems are currently running on outdated ICT hardware. A first phase of migrations has been planned, and will be performed alongside the Future Guildford programme, subject to ICT and business resource availability. Servers running the out-of-support Windows Server 2003 operating system are being prioritised, and officers expect they will be powered down before the end of November 2020. Migrations will continue under the programme

until all outdated servers, network and storage devices considered in-scope of this programme are powered off, and where appropriate disposed of.

14. Background Papers

Executive, 28 November 2017 (Agenda item 9): ICT INFRASTRUCTURE IMPROVEMENTS: APPROVAL TO SPEND CAPITAL FUNDING

<http://www2.guildford.gov.uk/councilmeetings/documents/g608/Public%20reports%20pack%2028th-Nov-2017%2019.00%20Executive.pdf?T=10>

Overview and Scrutiny Committee, 3 March 2020 (Agenda item 5: ICT Refresh Project Review)

<http://www2.guildford.gov.uk/councilmeetings/documents/g901/Public%20reports%20pack%2003rd-Mar-2020%2019.00%20Overview%20and%20Scrutiny%20Committee.pdf?T=10>

15. Appendices

None