Report to Stronger Council Select Committee

Date of meeting: 13 April 2021

Portfolio: Customer & Corporate Support (Cllr Sam Kane)

Subject: ICT Update

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Recommendations/Decisions Required:

For the Select Committee to consider the ICT update report.

Report:

Achievements 2020/2021

1. Over the past year we have focused on completing the ICT restructure and improving the basic ICT service the team delivers. Seventeen colleagues have left the team, and 10 have joined. The team is now at capacity. A business partner model has been implemented with meetings held with each service area (19) every month. This has led to better alignment of ICT services and service area requirements. The session review operational issues, projects, and strategic plans.

2. The team have implemented a service desk management tool that provides better visibility and management for incidents, changes and problems. This is being used across the whole team and by all colleagues across the council to ensure tickets are raised, visible and appropriately prioritised and dealt with. The number of aged tickets has decreased from 102 in Oct 2020 to 13 in March 2021, and the SLA has gone from 89% to 98 % in the same timeframe.

3. The team have facilitated the home and remote working for all colleagues across the council, and provided laptops, Microsoft teams, and BYOD support. This has been essential due to the Covid restrictions and the mandate for all colleagues to work from home if possible.

4. A new project governance process has been implemented. In August 2020 we did not have a list of projects. When the list was collated there was 202 projects on the list and the effort to complete them would have taken 14.76 years. This was leading to failed delivery across the board. The new process has now delivered 113 projects, and 25 are currently live, 12 are being scoped and 66 are on hold. The process is governed by a monthly IT portfolio governance meeting that monitors all the projects and decides on which should take priority when there are resourcing constraints.

5. Other work has been completed to prepare and simplify the environment. This includes removing duplicate or overlapping solutions, such as Aerohive, moving the firewall management to the cloud and migrating colleagues to O365 in the cloud.

6. The accommodation project has required significant ICT resourcing and the team have been involved in aspects covering networking, AV, equipment fitting, resource booking systems and decanting of equipment.

7. Security has remained a key focus with the emphasis on how to safely open things up to provide better user experience. This has included working more closely with the Strategic Information Governance group to assess risks and implement agreed changes.

8. A new Disaster Recovery solution has been implemented which allows services to be run from the cloud in case of total loss of on site solutions.

Infrastructure Review 2021/2022

9. With these basics now in place, it is time to move on the next stages of the ICT journey. This is focusing on improving resilience of services and removing the dependency on the Civic centre infrastructure. It is time to move to the Azure cloud. Initial assessments have been completed which support the business case of moving to a hybrid cloud model initially. This means will move those services best suited to running in Azure and not those that currently wouldn't work that well. We will then change the way we access services, so we access directly via the cloud and only come into the computer suite for services that still run there. This will improve the resilience of the ICT services and mean that things will be able to run independently from the physical computer suite.

10. A report was commissioned from Methods (a specialist ICT consultancy) in Jan 2021 which review the options for progressing moving to the cloud (i.e. our infrastructure strategy) and presented the pros and cons. The findings of this report are included below.

Pros & Cons

Recommission Infrastructure	Cloud	Shared Infrastructure
• No disruption • Knowledge already in house (no staff retraining)	• Ability to scale up or down depending upon need to minimize costs • No need to maintain physical infrastructure • Follows government guidelines of cloud first	• Potentially lowered cost • Potentially shared staff cost
• Is not the most cost-effective approach from an initial evaluation • Lacks the resiliency of a cloud-based solution • Lacks flexibility and always requires the hardware to be over specified to cope with peaks • Limits options with regards to rapidly adapting to new demands (users, software, etc.) • Skill set required is increasingly becoming less common • Physical presence required to troubleshoot hardware failures • Longer lead times for replacements of faulty hardware • Expenditure will be required, so although it can be used to delay a decision there will be a cost to that. • Ongoing upfront costs • Devaluation (in effect lease vs buy)	• Flat clear pricing if required, no hidden costs. Or more flexible varied pricing optimized to occasional bursts, if preferred. • Reduced physical infrastructure • Greatly simplified disaster recovery, backups, improved resiliency • Established frameworks, migration approaches, and wide support • Infrastructure is easily maintained as code, allowing for fast changes • Greatly improved monitoring • Regularly refreshed hardware infrastructure • Advanced security features • Predictable costs • Moves the council to be in a good position using recognised technology stack in the event of Local Government Reform allowing the council to set their own pathway for technology.	• High risk of unexpected large costs if not all partners remain fully committed to this approach • Difficult to calculate how costs should be shared • License limitations often prevent such sharing • Reports of previous attempts failing to gather interest • Carries all the disadvantages of remaining on in-house infrastructure
	• Requires upskilling of staff (though this can also be considered an advantage) • Initial migration costs and during the dual running phase (when both original infrastructure remains operational and cloud infrastructure) will be higher • Reliant on single supplier. Can be mitigated by reserved instances which fix prices for a number of years, and having a correct approach to infrastructure in the cloud (infrastructure as code) to simplify migration to another cloud provider	

Hybrid Public Cloud	Recommended Option

- This is the most flexible approach, allows for a gradual rollout and ensures EFDC will get the benefits of being in the cloud quickly without the issues that can be faced if all infrastructure is migrated at once
- This approach allows early results to be achieved, most likely initial servers could be migrated within months.
- Opens up the route to full cloud adoption in the future at a time and pace, that fits in with other upgrades (e.g. software to SAS offerings).

Recommission Infrastructure

- Whilst not ideal this is a fairly low risk approach, though it results in locking into the current infrastructure for longer than may be desired, and will not help with cost savings (upcoming costs soon).
- The current risks posed by the existing approach are not really resolved, and no improvements are seen.

Full Public Cloud

- This will not be as ideal as a hybrid cloud approach initially as it will result in some infrastructure that for cost, retirement or licencing issues is ill suited to cost effective running in the cloud, and may be better decommissioned over time.
- This delivers all the cloud benefits (resiliency, reliability, adaptability, potential cost savings, latest infrastructure) in one.

Shared Infrastructure

At this time this option is advised against although could be considered at a future point when EFDC has a mature, modern and efficient infrastructure.

Azure vs Amazon Web Services (AWS)

11. In order to complete the analysis on cloud costs the current EFDC infrastructure was analysed using both the Azure and AWS cost calculators to estimate potential future costs

Options Cost Summary

The following table sets out the costs of the top 3 options, in relation to option 4 "shared infrastructure" at this time it has not been possible to determine the cost position. All costs detailed below represent the operational running costs and do not include the potential implementation costs.

Approach	Description	Total Worst Case (24*7, higher spec)	Total Best Case (reduced running time, lower spec)
Hybrid Cloud	Majority of Virtual Servers moved to cloud (Application & SQL Server) (Azure Only)	£239,336 + Remaining in house costs	£131,316 + Remaining in house costs
Full Cloud	All servers & services where possible migrated to cloud (Azure Only)	£315,620 (£281,625 + £33,995)(no virtual desktops, and 1Gbps unlimited express route)	£197,665 (£163,670 + £33995) (no virtual desktops, and 1Gbps unlimited express route)
		Worst Case	Best Case
Recommission Infrastructure	Rolling programme of replacements	£305, 735 Assumes a £80k rolling refresh budget with a £400k total asset value	£275,735 Assumes a £40k rolling refresh budget with a £200k total asset value
Do Nothing	Replacement of servers and related infrastructure only at the point of failure.	£259,596 Assumes a 15% hardware and infrastructure failure rate p.a	£225,736 Assumes that all services will not have failure

12. The next steps for this project are as follows;

   a. Complete the Infrastructure and Applications Strategy documents
   b. Seek strategic agreement to the Strategies and option appraisal recommendations
   c. Outline the business case to produce a cloud readiness assessment and plan for implementation
   d. Commission a Microsoft Gold Partner in Cloud Platform to undertake a cloud readiness assessment
   e. Define an implementation plan, resource profile and requirements to comission external support to implement
   f. Complete full business case for hybrid cloud

13. A cloud readiness assessment has been commenced to gather further data to assist with the planning process.

14. To support this move, the back up service will be moved to the cloud, the network will be revamped to ensure effective access, and the existing physical infrastructure will be strengthened where appropriate.

15.   This change will also facilitate the other application work the council is doing to procure new planning and housing management systems.

16.   As part of an application review, other applications, from our current 145 systems portfolio, will be switched off, upgraded, migrated to the cloud or moved to Software as a Service. An application strategy is being completed, alongside a service management and infrastructure strategy, that will help steer the selection of solutions and changes going forward.

17.   More work will be done on the collaboration set of products as the current working from home and flexible working will continue with the new usage of the Civic building.

18.   This report is seeking support to continue the cloud journey and move key services into the Azure environment.

Reason for decision:

No decision is required by the Committee; however it is asked to consider the achievements in 2020/21 and the current review of the Council's infrastructure and planned work for 2021/2022

Options considered and rejected:

The infrastructure review identified several options of which 2 were discounted;

Do Nothing	
Continue with the existing infrastructure without upgrade	The age of the infrastructure and expiring licences means that even if nothing is done, there will need to be purchases and ongoing replacement of hardware as it reaches end of life or fails. For instance, key servers are due to be out of support by early 2022, and software licences will require renewing in January and April 2021, continuing with the current infrastructure without replacement or migration will lead the council to an increasing risk position in relation to its IT estate.

Convert DR Services to Live	
Convert the existing web based DR provision to become the new cloud environment	This option does not match the products offered by the supplier of the current Disaster Recovery platform as their offerings focus solely on Disaster Recovery and not ongoing hosting as a cloud provider themselves, however it may be worth considering their functionality for use in a cloud migration if suitable.

Consultation undertaken:

Not applicable

Resource implications:

Costs have been included in the budget for 2021/2022

Legal and Governance Implications:

Procurement of applications/systems will be procured in accordance with the Council's Policies and Guidance

Safer, Cleaner, Greener Implications:

Not applicable

Consultation Undertaken:

Not applicable

Background Papers:

Not applicable

Impact Assessments:

Risk Management

Risks are set out in paragraph 10 within the report.

Equality:

Not applicable.