
ICT ARCHITECTURE

**Responsible Cabinet Member - Councillor Chris McEwan
Efficiency and Resources Portfolio**

Responsible Director - Paul Wildsmith, Director of Corporate Services

SUMMARY REPORT

Purpose of the Report

1. The purpose of this report is to seek approval, and release of funding for the detailed design, procurement and implementation of the ICT architecture proposals.

Summary

2. A review of the existing network, telephony and firewall infrastructure was undertaken to assess aspects such as; current performance, resilience, security and future development needs. The proposals contained within this report give an outline of the current issues the Council faces across a number of infrastructure areas.
3. The medium term financial plan approved by Council in February 2010 includes £400,000 of capital expenditure in 2010-11 and £100,000 of annual revenue expenditure

Recommendation

4. It is recommended that :-
 - (a) The £400K corporate capital funding required to deliver the programme be approved and released from the 2010/11 capital MTFP.
 - (b) A delegated power be granted to the Director of Corporate Services, in consultation with the Cabinet Member for Efficiency and Resources Portfolio, to vary the proposals within the existing budget to deliver the desired outcomes.

Reasons

5. The recommendations are supported to progress the Council's ICT Strategy.

**Paul Wildsmith
Director of Corporate Services**

Background Papers

No Background papers were used in the preparation of this report.

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S17 Crime and Disorder	This report has no implications for crime and disorder.
Health and Well Being	This report has no implications for crime and disorder.
Sustainability	This report has no implications for crime and disorder.
Diversity	There are no diversity issues.
Wards Affected	All wards equally
Groups Affected	All groups equally
Budget and Policy Framework	The report does represent a change to the budget or policy framework
Key Decision	This is a key decision.
Urgent Decision	This is not an urgent decision.
One Darlington: Perfectly Placed	There are no issues directly affecting the Community Strategy.
Efficiency	The proposals included in the report will support the efficient delivery of Council services.

MAIN REPORT

Background

6. Xentrall ICT Services is delivering a number of strategic projects for the Council with the aims of increasing service resilience, availability and flexibility, and in several cases realising efficiency savings. These projects cover the building of a new computer room and the implementation of a virtualised server estate. These will be followed by both new backup & recovery and disaster recovery infrastructures and procedures. Other less strategic but important projects also being undertaken include desktop procurement review and a print consolidation project.
7. Together with the comprehensive service improvement programmes being undertaken within the ICT Service, these projects will combine to provide a strong and flexible strategic architecture and services on which the Council can base its future. However, there are a number of key areas that need adding to the improvement programme:
 - (a) The data network on which all the above initiatives rely cannot be trusted to provide a suitable quality of service as a result of aging equipment, capacity limitations and single points of failure.
 - (b) The telephone system is dated, at capacity (no more numbers) and has a number of weaknesses, some relating to the Contact Centre. In most cases it cannot be integrated into the computer systems and doesn't provide services associated with modern telephony systems. The situation is also complicated by having several telephone systems in use across the Council.
 - (c) The firewall infrastructure which is responsible for all outside communications, connections and protection e.g. email, web and remote working, has a number of single points of failure.
8. Events over the last year have shown the vulnerabilities inherent in all three of these areas:
 - (a) Central House and associated sites have been cut off when a BT network connection failed.
 - (b) Areas of networking within the Town Hall have failed and had to be temporarily patched.
 - (c) All Council Internet connectivity was down when a power supply for a single device failed.
 - (d) The Siemens telephone system was unavailable when the power supply failed several times.
9. As virtually all Council services rely on ICT systems, any such Council-wide failures have a dramatic and detrimental impact on the services provided by the Council and its reputation. To not address these strategic areas will only serve to undermine the investments already being made. Ultimately, we need to ensure that there are no significant risks associated with the ICT architecture of the Council.

10. Both a tactical and strategic approach can be taken in relation to funding and improving the corporate network related architecture. In the longer term, opportunities exist to undertake joint procurements with Stockton Council and in some cases the implementation of shared infrastructure as is the case for the computer room and server projects. In this regard, two key opportunities exist;
11. Stockton has extended its current contract with its external network provider. This will take the existing Stockton contract to Aug 2012. Therefore in 2011/12 a review will be undertaken and a procurement take place to consider the future voice and data network provision needs of Stockton Council. This is an opportunity for the Council to join in this process and take a project forward together and achieve benefits that a larger project brings. Such a project would review telephony systems, networks within buildings and networks between buildings.
12. An review of Internet infrastructure is being undertaken for Stockton Council with a view of increasing resilience and flexibility to underpin the increasing reliance made on Internet connectivity e.g. websites, emails and remote connections. This is an area that the Council also needs to review, redesign and renew. Therefore, again a joint approach building on existing joint infrastructure e.g. computer room and virtualised servers, gives the Council an opportunity to review this area with a focus on increasing resilience and performance.
13. As well as the two areas above, in the shorter term a tactical approach is needed to address the more pressing performance and resilience issues, but at the same time, any such work will lay down foundations that will support a future strategic direction.
14. The areas to be addressed are:
 - Local Area Network (LAN) – the networks within buildings
 - Wide Area Network (WAN) – the network between buildings
 - Telephone System(s) – main Siemens switch and other remote systems
 - Internet Connectivity – the firewall infrastructure and external links
15. The following sections outline the proposals for each area.

Local Area Network (Lan)

16. Tactical – A survey has been undertaken of all devices which run the internal networks. This identifies devices which require immediate replacement or upgrade due to age i.e. out of warranty. The survey also identifies future “end of life” dates for the remaining equipment.
17. Strategic – A more complete exercise to the above needs to be undertaken which will refresh ageing network cabling. Pre-1996 Durham County cabling is still in use in Central House. Existing Cisco switches also need upgrading across the main sites as this will allow IP telephony to be rolled-out across existing networks (see telephone system later). The Town Hall has a mixture of cabling, but most rooms are adequately covered.

Wide Area Network (Wan)

18. Tactical – Eliminate single points of failure between the Town Hall, Central House and The Depot. Implementation of additional high speed network links to achieve resilience on the WAN. Implement network management systems within ICT to allow the LAN/WAN to be managed correctly.
19. Strategic – Undertake a full review of external network links in conjunction with Stockton Council in 2011/12. It is anticipated that this WAN element alone will be achieved within the costs of the existing WAN.

Telephone System(S)

20. Tactical – Provide a more resilient link between the existing Siemens and Cisco systems and remove the single point of failure. Adopt a Council-wide approach of moving buildings/floors onto the Cisco system as opportunities arise e.g. Workwise accommodation review. In preparation for this, strengthen the existing central Cisco infrastructure. The specific costs associated with migrating offices and buildings would be calculated as part of any planned moves.
21. Strategic – Through a tactical deployment as part of accommodation moves, a gradual migration to Cisco systems will allow the Siemens (& other) telephony systems to be down-sized. Decommissioning will ultimately be reliant on moving the Contact Centre onto a new platform. This could form part of the overall network/telephony review with Stockton Council in 2011/12. If the LAN upgrades identified above have been undertaken to main sites, then the remaining costs to migrate users across to Cisco telephony mainly revolve around handsets and associated licences. Once finalised, a gap analysis could be performed on the existing accommodation plans to help identify areas which won't have been upgraded as part of the moves themselves i.e. static areas of the Council estate. These could then be costed as the remaining elements to upgrade in terms of IT & telephony, along with the Contact Centre moves.

Internet Connectivity

22. Tactical – Work has recently been undertaken to increase the resilience of the firewall and associated services. Two devices now manage remote access into the Council's systems thereby providing a degree of resilience to this service. Likewise, two firewalls are now in place to strengthen the overall management of external traffic (web, email and remote connections). Another area of remedial work undertaken has been the refresh of the devices which manage the two Internet links. These were both failing and had to be corrected. All these tactical additions combine to provide a more resilient service than that previously. However, there is still some way to go.
23. Strategically - Work is progressing on developing ideally a joint architecture solution which covers both Darlington and Stockton Councils in the areas of:
 - Firewalls & Associated Infrastructure
 - Secure Web Browsing
 - Secure Email Delivery
 - Identity & Access Management

Financial Summary

24. £400K funding has been identified in the 2010/11 capital MTFP, there are also some revenue consequences, namely; £75K in 2010/11 and £100K per year thereafter which are built in to the current MTFP. As described in the report, the strategic investments do not negate the tactical ones. Therefore a move to upgrade the overall architecture will require investment outlined in both tactical and strategic areas. Yet to be defined is the amount of funding to allow final migration from the Siemens telephony system once these other architecture upgrades are implemented. This will be assessed in 2011/12 as part of the wider telephony review with Stockton Council.

	Tactical Solutions (£000's)		Strategic Solutions (£000's)	
	Capital	Revenue	Capital	Revenue
Local Area Network	45	9	160	27
Wide Area Network	35	18	0*	0*
Telephony	11	10	TBA**	TBA**
Internet	0	0	149	36
TOTAL	91	37	309	63

* It is anticipated that a strategic review of the WAN can be completed within existing budgets.

** The cost of a strategic move on telephony is dependant on LAN upgrades and incremental accommodation moves. Any areas of the Council not affected by accommodation/IT upgrades would need sweeping up as part of the overall exercise, as would a replacement system for the Contact Centre.

25. Once capital funds are released, a number of short-term tactical fixes can commence across all four architecture areas. These then pave the way and provide the time needed to plan the more strategic programmes needed to redesign these critical elements of the Council's ICT architecture on which most of the Council's services rely. Due to the overlap of all four areas of technology, there will be a need to remain flexible in implementation, therefore the table showing budget apportionment above is to be used as a guide as this reflects current design thinking. The proposals are in-line with the ICT Strategy. Due to the flexibility required within the scheme, delegation to the Director of Corporate Services is requested in consultation with the Cabinet Member for Efficiency and Resources to vary the proposals within the existing budget to deliver the desired outcomes.