

CABINET

4 JULY 2012

THE OVERVIEW AND SCRUTINY COMMITTEE – 9 JULY 2012

DEVELOPMENT OF A SHARED AND CONSOLIDATED IT INFRASTRUCTURE
WITH TEST VALLEY BOROUGH COUNCIL

REPORT OF HEAD OF INFORMATION MANAGEMENT & TECHNOLOGY

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RECENT REFERENCES:

CAB2070 – Information Management & Technology: Collaborative Working with Test Valley Borough Council, 13 October 2010

CAB2251 - Capital Programme Budget Consultation, 9 November 2011

CAB2345 – WCC Information Management Strategy, 13 June 2012

EXECUTIVE SUMMARY:

The Council and Test Valley Borough Council now have a shared Head of Service for Information Technology (IM&T). They also share an IT Service Desk.

The similarities in operation between the two Councils make sharing of part of the technical infrastructure a viable option, with resultant cost and operational benefits.

The report details the technical environment, and considers the case for shared infrastructure. It also seeks authority for the 'primary' and 'secondary' sites for locating shared hardware as being Test Valley (Andover) and Winchester respectively.

The report recommends that each Council contributes to costs according to its relative share of the assets utilised.

RECOMMENDATIONS:

Cabinet agree that:

- 1) the principle of the City Council sharing IT Infrastructure (software and hardware) with Test Valley Borough Council, as the next step in developing the two Councils' Shared IT Partnership, be supported;
- 2) infrastructure be shared on the basis of each partner meeting a relevant proportion of the costs to be agreed by the Head of Finance at each authority;
- 3) the Head of Finance agree an appropriate basis for cost apportionment for asset use, in consultation with the Head of IM&T and the Portfolio Holder for Finance & Administration.
- 4) the principle of sharing, including sharing of costs, apply to all existing and new assets which are employed by both partners, from a date to be determined by the Head of IM&T in consultation with the Portfolio Holder for Finance & Administration;
- 5) the primary location for the two Councils' shared IT hardware should be TVBC Offices in Andover and the secondary site should be WCC Offices;
- 6) the Head of IM&T be authorised to formulate and implement a plan for consolidating the IT infrastructure between the Council and Test Valley Borough Council, in consultation with the Chief Executive and the Portfolio Holder for Finance & Administration;
- 7) that, in accordance with Financial Procedure Rule 6.4, authority is given to incur capital expenditure of up to £35,000 to allow the procurement of an upgrade to HPSN2 network connection between the two authorities.
- 8) authority be given the Head of Legal Services in consultation with the Head of Finance to extend the shared services agreement to include shared infrastructure as set out in this report.

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DETAIL:

1 Introduction

- 1.1 In examining the requirements of the ICT infrastructure (meaning hardware, software and related items such as operating licences – but not consumables such as terminals or peripherals) for both Winchester City Council (WCC) and Test Valley Borough Council (TVBC) for the next five years, options have been considered to take advantage of the Councils' current shared IT service agreements and where supported by business case expand to realise cost and operational benefits.
- 1.2 The provision of an effective, reliable, sustainable and cost effective ICT infrastructure underpins and enables improved delivery of services to the public. Any provision of information services requires continuous and improving support, resourcing and maintenance of those services. Any future opportunities for the sharing of business systems between authorities are likely to depend heavily on the delivery of shared information across a common ICT infrastructure but not at a cost of degrading the autonomy and sovereignty of either party.

2 Background

- 2.1 The WCC Information Management Strategy seeks to realise efficiencies, both financial and operational. Also it considers different ways of working and technology investment at the right time to enable the realisation of business improvement and savings.
- 2.2 The ICT infrastructures of both Councils require a programme of investment to ensure and maintain 'fit-for-purpose' data processing and application delivery to the business. This is generally in the form of hardware warranties (from the manufacturer or a specialist third-party) and software licences from the vendor or their reseller.
- 2.3 Such investment is subject to financial provision made to support asset management for replacement components at the end of their life-cycles, for example: core infrastructure (example: server, network, data storage) is

refreshed every 5 years. This approach is based on good practice throughout the IT industry.

- 2.4 Economic pressures and budget constraints may lead these life-cycles to be extended to produce a financial savings, but that can add significant business risk through reduced system performance and availability. However, opportunities exist within the shared IT Service to rationalise and therefore optimise use of the Councils' assets. Such opportunities also introduce benefits from reduction in internal support overheads and third-party support contracts, with major savings in power consumption.

3 Infrastructure

- 3.1 Both Councils have mature IT departments structured to provide support and development to the Council's business. This is achieved in different ways, however, with TVBC having a largely 'out-the-box' provision of applications whereas historically WCC opted to develop many in-house applications and provide the ongoing support for them. Underpinning both are separate IT infrastructures which have followed similar technology lines for the network; servers and desktop operating systems. The Council's approach is being developed as part of the IT Technical Strategy.

4 Hardware and Software Refresh

- 4.1 Prospective capital risk has been identified for the next round of refreshment of WCC core infrastructure, of £895,000 over five years.
- 4.2 TVBC has a recognised capital refresh element for its core infrastructure with provisions within the Council's Asset Management Plan (AMP) of £725,000.
- 4.3 Most equipment now comes with a 5-year warranty. After that time it may be possible to purchase extended warranty. Conversely the component's risk is assessed and its use may continue without formal support. The key factor in deciding the level of cover is in the function performed by that component. Some items of infrastructure may safely continue to be used after their original life-cycle term has ended.
- 4.4 However, at some point a refresh must take place due to other factors such as changing technology used by application providers.

5 Data Storage

- 5.1 Both Councils use a corporate storage method, Storage Area Network (SAN). This standard allows for the central holding of data, rather than being held on individual servers. Advantages include the speed of access through fibre technology; centralised backups; ability to duplicate data for Business Continuity purposes; and the management of data into tiers, enabling seldom-used data to be archived (though still readily available).
- 5.2 TVBC has a duplicated SAN which acts as a Disaster Recovery (DR) option protecting the Council's data in the event of disruption to the Andover computer suite, and allows use of Romsey in the event of Beech Hurst office closure.
- 5.3 WCC has different arrangements, although the Council is protected by its daily backups written directly to tape media. Further, most of its current SAN system reached its planned end of life-cycle in February 2012. Extended warranties are available at an indicative cost of £23,350 for a year, but that figure will increase as more elements reach the end of warranty. Even with warranties, the risk of disruption to WCC on this single SAN increases over time. Replacement of this SAN is estimated to cost around £198,000 over three years.

6 The Network

- 6.1 An IP network is the logical result of an assemblage of switches, routers, cabling and software in a complex life-cycle management relationship as items become time-expired, spares become unavailable, and business and application demands on the network change, resulting in a refreshed need.
- 6.2 TVBC recently replaced the core and edge components of its network.
- 6.3 WCC are currently replacing the core and edge components with the same technology and manufacturer as TVBC. This will enable the opportunity of shared support, maintenance and administration.

7 Servers

- 7.1 Both Councils have recently invested in server virtualisation, whereby a small number of very powerful computer servers can accommodate applications and systems instead of a large number of physical servers, each running a number of applications. These servers have redundancy built in, and hold data with more efficiency and sustainability.
- 7.2 However, technology demands continuous refreshment to ensure future proofing, as each Council's virtual server hosts approach their replacement points, further investment is needed, unless assets are sweated through further use in non production environments (example: Replication standby services).

8 Options

8.1 Two options have been considered for future provision of the shared IM&T Service:

8.2 **Option 1** - No change in approach

- Each Council continues to fund and support its own data processes and infrastructure.
- TVBC would continue to replicate SAN to SAN between Andover and Romsey sites.
- TVBC would refresh its hardware holding as part of the Asset Management Plan.
- WCC will need to fund replacements for the SAN, and server holdings.
- Already moving towards standardised on a thin-client to the desktop, there will continue to be an annual funding demand of £60,000.
- The server delivery model in place (VMWare) requires immediate funding as the hardware models in use are now past their warranty dates and too critical to risk failure through ageing.
- WCC VMWare licensing will need further funding as licences are valid for three year terms only.
- The WCC computer suite has no fire suppressant and represents a single point of failure for the IT of the entire Council.
- The Adams Continuity service (Disaster Recovery) for WCC is in place at a cost of c. £11,000 will continue to be funded.

Over 5 years, total Capital requirements are forecast at £895,000 for WCC and £725,000 for TVBC.

8.3 **Option 2** – Shared ownership and usage of infrastructure (with hardware distributed across primary and secondary sites – see below)

- Consolidate the delivered IT services for both Councils onto a single platform located in a single data centre.
- This platform would consist of server hardware and storage (SAN) already in use but suitably augmented to provide capacity to run both Councils' applications.
- Both TVBC and WCC users would continue to access their systems and data in the same way but services would be delivered from the primary data centre and not necessarily the local data centre.
- The primary/secondary model would utilise the virtual servers and SAN (including licensing) already in place at Beech Hurst, Andover, suitably augmented.
- Users would access their application services over the high speed communications provided by the Hampshire Public Services Network (HPSN2) upgraded to 1Gigabits. Most, if not all, applications running on the WCC servers can be migrated to the primary site at Andover.

- The secondary site at Colebrook Street, Winchester, would utilise much of the equipment resident in Duttons Road, Romsey, which is the current replication site for Beech Hurst. As the amount of equipment at a secondary site would be much reduced, opportunity could be taken to utilise a purpose built facility in the Guildhall West Wing at Winchester, currently unused and therefore remove the data centre overhead in the City Offices.

Total Capital requirements are forecast at £487,000 at WCC and £840,000 at TVBC over 5 years.

- 8.4 The second option entails hardware being located at TVBC Offices in Andover (the primary site), with Winchester's City Offices being used as a location of hardware which acts as a back up (the secondary site). Officers have considered the alternative of the City Offices becoming the primary site. However, this would entail significant adaptations to buildings and the transfer of hardware currently located in Andover. It is estimated that this option would entail an additional £447,000 in capital costs and £87,000 in annual revenue costs over and above option 2, and is therefore not recommended.
- 8.5 Option 1 (maintain current separate infrastructure) will limit both Councils' ability to realise value for money through procurement and operation, including through efficient use of IM&T staff:
- Major reinvestment in an asset refresh programme for both Councils. Where this is not already programmed, a bid for funding will be required.. Also both Councils have, over time, developed models for delivery of disaster recovery to facilitate business continuity within Services. TVBC uses its second site to this end whereas WCC contracts with an outside agency (Adams Continuity) to supply functional capability. This is effectively duplicating solutions.
 - Both Councils have support teams to maintain and develop the infrastructure. While the Infrastructure Teams' structures will be subject to another business case, it must be said here that the "no/gradual" change option requires a higher level of resource in its maintenance, in a number of facets, such as: procurement; asset management; monitoring; backup; change testing and maintenance.
- 8.6 The shared IT initiative is intended to facilitate savings in the resources required to provide an information service to the Councils' businesses. Option 2 (consolidating both Councils' infrastructures) facilitates that ambition:
- From a financial viewpoint, assets can be "sweated" in terms of extending the life-cycle from 5 years to 10 years, using new, warranted server and SAN equipment in the Primary data centre.
 - After 5 years in the Primary data centre, infrastructure elements get "retired" to the Secondary data centre on warranty expiry. By exploiting

the improvements in equipment reliability, it therefore takes on a different role, that of standby equipment, kept running in the event of Primary data centre failure, and being used as a replication (at regular intervals throughout a working day) of the Primary. This role will generally be for a further 5 years.

- Equipment failures in this Secondary mode can be addressed as circumstances allow, without the same imperative as the Primary, live equipment.
- That the equipment is used as replication ensures that it is in continuous use and any faults made visible immediately.
- It is effectively available to the business in the event of a Primary data centre failure.

9 Recommendation

- 9.1 Given the differences in environments at TVBC and WCC option 2 is recommended, with the use of Andover as the primary site and Winchester as secondary. This in no way lessens the importance of the Winchester site. The service as supplied to all users would be location-independent and transparently delivered.
- 9.2 The cost savings arising from a shared arrangement offers value for money for both Councils.
- 9.3 It is anticipated there will be ongoing benefits arising from opportunities to minimise spend. These will include the centralisation of the hardware infrastructure, and sharing of annual support costs and support processes. Both Councils will also gain from the resilience of the infrastructure, delivering applications to front-line services with protection in the event of contingency invocation, with an improved and appropriate Service Level Agreement.
- 9.4 Shared infrastructure also allows the IM& T Team to build the two Councils' partnership further:
- Remote access to the hardware provides the ability to support equipment wherever it resides although some physical intervention will always be needed.
 - Centralisation of support functions becomes simpler and more staff-efficient when all the systems are co-located, as systems used by both Councils can be checked virtually simultaneously.
 - Host consolidation and centralisation of assets and systems enable converged support with suppliers allowing shared support and platform costs on a 50/50 basis - yet do not prohibit separation of the service back to two standalone systems should either Council wish to end the partnership.
 - When the life-cycle demanded the transfer of the asset (and its ownership) to its secondary location will allow ongoing use as back up equipment.

- Each site becomes a natural Disaster Recovery (DR) site for each other negating the need to fund specialist suppliers on an annual service basis.

9.5 As regards the location of the primary site, there are good reasons for choosing Andover. The computer suite at Andover has space, full air-conditioning, fire suppressant and sufficient capacity within the uninterruptible power supplies. Rectifying that situation by bringing the Winchester computer suite to a similar level is initially estimated as at least £250,000 (no detailed building assessment has yet been undertaken) on top of the standard asset refresh. There is no operational disadvantage to Winchester from an off-site location.

OTHER CONSIDERATIONS:

10 SUSTAINABLE COMMUNITY STRATEGY AND CHANGE PLANS (RELEVANCE TO):

10.1 The provision of an effective, resilient and adaptable IT infrastructure is a key factor in ensuring improvements in the Access to Services element of the Winchester District Community Strategy 2010-2020. It will also assist us in becoming a more efficient organisation.

11 RESOURCE IMPLICATIONS:

11.1 The Council is able to reduce capital investment requirements.

11.2 It will be necessary to upgrade the existing HPSN2 connection to enable adequate capacity between primary and secondary sites at a capital cost of £35,000.

11.3 These arrangements are based on a shared ownership of the infrastructure in question, with the costs being met by each partner in relevant proportion. This would apply to both existing and new assets, save where they were specific to a service or activity unique to one partner (for example the City Council's housing system).

11.4 The basis for cost sharing should be determined in a simple way which avoids over complex time recording. It is recommended that the Head of Finance agree an appropriate basis for cost apportionment with her opposite number at Test Valley, in consultation with the Head of IM&T and the Portfolio Holder for Finance & Administration.

11.5 Under these arrangements, it would be for the Councils' respective Heads of Finance to agree the basis on which new assets would be acquired, in accordance with the principle of shared costs and shared ownership.

12 RISK MANAGEMENT ISSUES

- 12.1 An initial risk assessment has been completed by the Head of IT and no significant risks (Red or Amber) have been identified. Officers consider the recommended approach provides a cost effective way of minimising the risks to services arising from under investment in IT infrastructure.

BACKGROUND DOCUMENTS:

None

APPENDICES:

None.