

Report title:	Technology Refresh
Report of:	Interim Director of Support Services
Wards affected:	All
1. Purpose	
1.1	To set out the technology refresh for agreement.
2. Recommendations	
2.1	To agree the proposed thin client architecture for the technology refresh, noting the endorsement of the approach by Gartner Group.
2.2	To agree that the Council be assisted in delivering the refresh by Deloitte and Touche, primarily in the design work, and the Council's infrastructure supplier (Northgate), primarily on the implementation.
2.3	To note that the overall budget for the implementation is £6.1m in relation to the capital cost of leased and rented assets and £3.7m in relation to project costs, including £0.7m in relation to data centres to provide additional resilience, as set out in paragraph 9 and to agree the proposed funding of the project costs.
2.4	To agree the waiver of contract standing order 6.4 (requirement to tender) in accordance with 7.3 (d) (Council's overall interest) in relation to the appointment of Deloitte & Touche for the reasons set out in paragraph 11.2.4.
2.5	To note that using Northgate to carry out work of this nature is an ordered service within the scope of the current managed service contract with Northgate.
2.6	To agree to enter into a contract with Deloitte & Touch for a sum not exceeding £1.6m and to secure an ordered service from Northgate for a sum not exceeding £1.0m.
2.7	To delegate to the Interim Director of Support Services, or in his absence the Director of Finance, the finalisation of (1) the contractual arrangements with Deloitte & Touche and (2) the ordered service from Northgate.
2.8	To note the officer management arrangements and to agree the member governance arrangements over this project.
Report authorised by:	Justin Holliday Interim Director of Support Services

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3.1 Executive summary

3.1.1 The Council adopted a three (subsequently revised to four) year technology refresh policy following the NT Roll Out/ Standardisation project. In line with this policy and as part of the Council's IEG2 implementation, IT services, supported by Deloitte and Touche and Northgate, commenced the planning phase of the refresh programme.

3.1.2 The proposed technical infrastructure, which will support mobile working and the Council's overall approach to e-government, is set out in this report. The report recommends that the refresh programme is delivered by a combination of Council officers, Deloitte & Touche and the Council's infrastructure supplier, Northgate.

3.2 Reasons for any change in policy or for new policy development

3.2.1 The policy change set out in this report is a move from a thick (ie PCs) to a thin client architecture. This change emerged from the review of the approach to the refresh and has been validated by Gartner Group as a sound forward strategy. The change will facilitate the overall IS/IT strategy, to be considered at your July meeting, but the policy decision is independent from the wider strategies as a thin client architecture has its own inherent advantages, which are set out in the report.

4. Access to information: Local Government (Access to Information) Act 1985

The following background papers were used in the preparation of this report:

Draft IS/IT strategies

For access to the background papers or any further information please contact Lidia Lewis on 020 8489 3882.

5 Background

- 5.1 In 1999 the Council embarked on a major standardisation programme, known as “NT Roll Out” which resulted in an introduction of new desktop technology throughout the authority and elimination of any Y2K issues. The new desktop infrastructure was underpinned by freshly introduced Wide Area Network (WAN) and Local Area Network (LAN) infrastructure implemented during 1998/99 together with new cabling network deployed throughout all the Council’s major administrative buildings. The technical infrastructure was funded by capital programme and facilitated by operational leasing based on a three (subsequently changed to four) year refresh policy.
- 5.2 On 22 October 2002 the Executive endorsed Haringey’s IEG2 submission (Implementing Electronic Government statement submitted to ODPM) based on early assumptions of technology refresh approach. Subsequently in November 2002 the e-Government Advisory Committee considered the executive summary of IS/IT strategies including the overall approach to the refresh.
- 5.3 The same Executive considered the objectives, strategy outcomes, list of actions completed and logical steps towards finalisation of refresh proposals. On 17 April 2003 the E-government Committee considered the extended validation of the overall approach.
- 5.4 This report sets out:
- the proposed solution to the Council’s infrastructure;
 - a summary of the proposed approach to the implementation;
 - the proposed delivery agents;
 - budget;
 - validation of the proposed approach;
 - the procurement and contractual position; and
 - governance and management.

6.0 Proposed solution

- 6.1 The following section provides a summary of the rationale behind the proposal to implement the ICT infrastructure. This proposal flows from the IEG2 and is consistent with the emerging IS/IT strategies.
- 6.2 In IEG2 Council agreed the goal of making a step change in performance through a series of business improvement activities enabled by the technology.
- “....using Information Technology to facilitate business transformation and deliver improved service” IEG2 October 2002*
- 6.3 Specific objectives and goals articulated in the Council’s:

- Community strategy
- Best Value Plan
- Various service improvement plans

require additional access channels (web access channel), the ability for staff to work in a mobile manner, increased integration of Council IT and data and the flexibility to share information with partners (eg NHS, Police, etc) in order to achieve service initiatives.

6.4 One of the key proposals flowing from IEG2 and IS strategy development was the *development* of a corporate technology framework which enables the Council to “fit” in existing IT investment (eg SAP, Siebel and other business unit IT systems) and define where future IT is required.

6.5 The proposed ICT infrastructure underpins this technology framework and is designed to allow the Council to achieve the following business drivers:

- significant property rationalisation programme being initiated by the Council;
- the need to achieve greater efficiency from IT investment;
- the ability to cost effectively add in future IT (e.g. a new Social Services system) in an integrated manner;
- support for new and existing access channels (the call centre, customer service centres, post, and the internet);
- the ability to integrate IT systems and data to enable streamlined and more customer centric services to be delivered;
- making access to Council IT and data easier for employees, partners and potentially customers (e.g. enabling mobile working, data sharing with the NHS and customer access of information via the Internet).

6.6 The underpinning principles behind the framework and the supporting ICT infrastructure proposal is that IT should be easier to access, more flexible, more cost effective and provide greater support to service delivery.

6.7 ICT Infrastructure Proposed Solution

The proposed ICT infrastructure is different to the one the Council currently operates being a ‘thin client’ architecture, which is now a maturing enabling technology.

6.8 Thin Client technology infrastructure shifts the emphasis of processing and memory requirements from the ‘client’ machine (e.g. PC) to the server. This effectively turns the ‘clients’ into terminals, which display graphics from the server and sends input information (usually mouse

and keyboard strokes) back to the server. All applications are executed on the server, the client simply provides a “window” into this server environment.

- 6.9 This enables the Council to both replace existing PC's with terminals which are far cheaper and consolidate and rationalise the numbers of servers it operates. It also improves the resilience of the Council in the event of a disaster (effective Disaster Recovery) and provides access to IT via a variety of different devices (e.g. laptops or Personal Digital Assistant's (PDA) with no impact on the infrastructure thus cost effectively enabling mobile working.
- 6.10 It allows improved security of Council data meeting the requirements of the Data Protection Act and the data sharing requirements of the NHS and centralise IT support thus minimising the effort and therefore the costs involved in IT support for IT users (see Appendix 1 for illustration).
- 6.11 It is further proposed that the Council's servers should be managed in two physical locations called data centres. Two data centres are recommended to ensure that Council has significant resilience to ensure business continuity in the event of disaster.
- 6.12 The key benefits to be achieved through the implementation of the ICT infrastructure refresh proposal are.

- **Property Management Strategy** – the proposed ICT infrastructure is a key enabler to helping the Council to achieve its property rationalisation strategy. The removal of the geographic barrier of access to data means that, bar an impact on the existing network infrastructure, the proposed ICT infrastructure is largely agnostic to the numbers of properties retained within its property portfolio.

The proposed ICT infrastructure enables full roaming profiles – the ability for a user to log on to any terminal and access all the IT systems and data that they have security access to. This in turn enables ‘hot desking’ to become a reality – a key driver to reducing office space operated by the Council.

- **Reducing the Total Cost of Ownership** - Thin-client technology has been used in other local authorities and the private sector to reduce the cost of ownership of IT infrastructure (IT hardware). The use of this technology enables organisations to minimise future IT hardware requirements, i.e. moving away from ‘thick’ clients (PC's) in favour of terminals. Further, the longevity of the terminals is increased within a thin client environment as – typically terminals can last up to 6 years without need of replacement as opposed to 3 years for PC's. Therefore future technology refreshments cycles could be extended and the majority of hardware costs can be re-focused on the server side

(which greatly reduces the cost of replacing the ICT infrastructure).

IT support of a “thin-client” environment will enable cost savings in the support organisation in the medium term largely due to the removal of the need to support PC's remotely and to refocus activity on supporting the Council's servers and the network infrastructure (which is far more cost effective).

and it enables, subject to the agreement of the IS/IT strategies, further benefits such as:

- **Connection with Partner IT systems** - The proposed ICT infrastructure adopts open standards and uses Virtual Private Network (VPN) and Secure Socket Layers (SSL) security protocols to enable third party organisations access to the Council IT infrastructure. These security protocols are in line with Government Gateway protocols. An example of this is that the requirements to achieve connectivity with the NHS net are fully complied with.
- **The Haringey Portal** – access to Council IT and data can be greatly simplified through the development of the Haringey portal, which is directly enabled by the proposed infrastructure. This provides customers & partners as well as employees to contact the Council through a variety of access channels, but critically have all Council IT and data provided in one place. For the user this dramatically simplifies access to various IT systems, as well as e-mail and other relevant information. It provides a standardised view of information which is independent of types of users, security requirements and PC ownership. The technology refresh is the first step towards the Haringey Portal with the remaining elements delivered under Web Strategy project.
- **Mobile working** - This type of an infrastructure is capable of providing users with access to Council IT and data irrespective of whether users are working in a mobile, remote and office based manner in a cost-effective way. Critically, the current geographic barrier of accessing Council IT and data is removed which enables IT to better support new ways of delivering services.
- **Government standards** – The infrastructure will help us in delivering to the e-GIF guidelines.

7.0 **The proposed approach**

- 7.1 The overall project approach is summarised in Appendix 2 and shows a high level overview of the workpackages (phased order of implementation) and where they fit on the proposed timeline of the project.

7.2 Each workpackage contains a specific set of activities that are related to each other and form a discrete piece of work. In general however, the workpackages cover the following areas of work:

- development of two data centres to store the key components of the new infrastructure;
- development of a secure council authentication system that will enable users to log into the new technology infrastructure;
- refreshing of all the required server, desktop and hardware components;
- design and development of the "Thin Client" solution;
- upgrading of the council's current email system to a new version of Outlook that supports the proposed technology infrastructure and potentially provides added benefits in terms of data security and archiving of emails. (The legislative compliance with full "archiving" will be treated as a separate project);
- project management throughout the lifecycle of the programme; and
- change management activities, which will be managed by the Council staff with some external support.

7.3 Following the development of core infrastructure the thin client terminal rollout can begin as indicated by the star in Appendix 2. Initial estimates show this is possible in the Spring 2004. Clearly these estimates are subject to validation in the early stages of the project. As illustrated in Appendix 3, there are a number of distinct phases involved in deployment of core technical infrastructure. The key stages are:

- detailed requirements analysis (similar to NT roll out gathering of user requirements – however this will be pre-dominantly behind-the-scenes with minimal end user disruption);
- technical planning and design;
- implementation of core infrastructure components;
- testing; prior to
- staged user deployment

8.0 Proposed delivery agents

8.1 A project of this nature requires a mixture of skills, experienced personnel and is very resource intensive. Delivery success will depend upon a high degree of knowledge of the Council and its future aspirations/objectives, detailed understanding of our IEG2 and its underpinning IS strategies plus a high level of technical knowledge and experience in related technologies.

- 8.2 Haringey's IT Services is currently undergoing a fundamental review with the aim to build a portfolio of skills and resources required post ICT procurement programme of managed services and to create the capacity for future design ownership of our technical e-Government frameworks.
- 8.3 Last year's award of the infrastructure contract to Northgate also created an opportunity for long term partnership on delivery and support of evolving technology.
- 8.4 Haringey's IT Services worked closely with Deloitte and Touche during the IEG2 and IS/IT strategies development. This working "partnership" was established by using an initial competitive tendering process through the Office of Government Commerce (OGC) framework contract via S-Cat catalogue (Consultancy Services Government Contracts) subsequently extended to cover the full spectrum of IS/IT Solutions. It is essential that the supplier of the design, the role envisaged for Deloitte & Touche,
- has sufficient expertise;
 - has a good working knowledge of the Council; and
 - is independent from the infrastructure provider, so that the solution is designed with our needs in mind rather than maintenance ease (which would be the risk if we were to use the infrastructure provider).
- 8.5 In light of these factors, the proposed delivery agents are:
- Deloitte & Touche
 - Northgate
 - Council staff.
- 8.6 In light of the use of Deloitte & Touche, beyond that which for which they were originally contracted and in delivering that which they helped to specify and cost, it is essential that the Council is confident both that the proposed approach (in principle, cost and scale) is valid and that there is a robust contractual relationship governing the arrangement.
- 8.7 The validation is discussed in section 10 and the contractual position in section 11.

9 Budget

- 9.1 In budget terms, there are three elements to this project:

- capital costs of assets to be rented and leased
- up front project costs
- on-going revenue costs.

These are discussed in turn.

9.2 Capital costs of assets to be rented and leased

- 9.2.1 The Council approved Capital Programme 2003/04 on 17th February 2003 which included ring fenced resources of £5.3M for IT refresh funded from revenue. The quantum of the commitment will be controlled through the capital programme. Latest estimates of the overall refresh programme are set out in the following table.

£'m	Capital cost	Lease/rental per annum on four year basis
Server software	0.3	0.1
Network hardware	1.3	0.3
Server hardware	1.3	0.3
Desktop hardware	1.1	0.3
	4.0	1.3

9.3 Up front project costs

- 9.3.1 This is a substantial project. The budget, with sources of funding, are shown in the following table:

	£'m
Costs:	
Purchased capital components	0.6
Solution architecture – Deloitte & Touche	1.5
Delivery – Northgate	0.9
Refresh of existing data centre	0.4
Establishment of additional data centre (para. 6.11)	0.3
	3.7
Funding:	
Uncommitted leasing budgets	2.6
Savings on existing budgets	0.4
Other (see para. 9.3.2)	0.7
	3.7

- 9.3.2 The leasing budgets are uncommitted as we are in the fifth year of the current leases. This means that the resource is available for funding the refresh. The savings on existing budgets arise as we wind down our support and run down our spares for the current infrastructure. It is proposed, further to this and in light of the additional resilience provided by the second data centre, that £0.5 of funding is allocated from the £3m set aside in the 2003/04 capital programme for IEG investment and that £0.2m is carried forward into 2003/04 from 2002/03 resources.

9.4 On-going revenue costs

- 9.4.1 The ongoing revenue costs are set out in the following table. These are funded and fundable from base budgets:

Cost element	£'m
Leasing/rental costs (see above)	1.6
Network and data centre costs	0.9
	2.5

10 Validation of the proposed approach

- 10.1 This is a substantial project so we have commissioned external validation of both the proposed solution and the project approach. This was undertaken by Gartner Group a global organisation specialising in research and evaluation of ICT solutions, monitoring of market trends and direct organisational impacts.
- 10.2 Haringey, along with many other Authorities, is a member of the Gartner Research portfolio and frequently relies on this shared knowledge database for validation of new concepts and product/services vendor overview (eg the Member Panel relied on Gartner Group's independent advice throughout 2000/2002 ICT procurement programme).
- 10.3 The detailed Gartner Review Report is attached in Appendix 3. The following points summarise Gartner's feedback:
- Thin client relies on good technical architecture design based on best practice and therefore should be supported by experienced and skilled personnel.
 - Change management is a key aspect of thin client implementation placing enormous demands on the organisation to change "habits" of working.
 - Reduction in overall cost of ownership for technical environment over a three to five year lifecycle is achievable.
 - Thin client solution will provide the ability to facilitate remote working (Council objective under IEG2).
 - Solution should increase efficiencies in infrastructure management and support (IT budget reductions already incorporated this element in future years).
 - Proposed solution will deliver integrated working environment.
 - Business Continuity – with plans to deliver two fully functional data centres – robust environment will be secured.
 - Should Haringey consider future system integration, the proposed solution will aid this objective.
 - High performance users will still require full desktop environment (eg GIS users)

- Bandwidth requirements should be evaluated and incorporated in the overall design.
 - Careful evaluation of thin client enabling software is required for cost-effective deployment dependent on functionality requirements and size of the organisation (already undertaken as part of the IS/IT strategy development phase).
- 10.4 Haringey must ensure that the new technical infrastructure is designed with Gartner's comments in mind, as well as an adequate level of independence should the Council, at any point in the future, decide to deliver IT Services in a different way (eg new partnerships). In addition, the current (pre-ITS review implementation) internal capacity issues are such that external qualified resources are required. Finally, by designing a technical solution in a broader context of e-Government framework Haringey will time-proof its infrastructure.
- 10.5 The key action points and the Haringey response are set out in Appendix 4 . This shows that we are addressing the points raised by Gartner.
- 10.6 In a further piece of work, Gartner have reviewed the broad quantum of effort set out in the previous section and their initial observations indicate that the estimated timescales and effort are realistic but subject to further analysis.

11 **Procurement and contractual issues**

11.1 Basic framework

11.1.1 There are four documents which govern the relationships of the three parties in this proposed arrangement:

- the Project Initiation Document, which is signed off by all parties and sets out the respective responsibilities of each party; this forms part of the
 - contract between the Council and Deloitte & Touche which governs the contribution from them; and
 - the ordered service agreement (derived from the principal agreement with Northgate) between the Council and Northgate which governs the Northgate contribution; and
- the collateral warranty from Deloitte & Touche to Northgate and the Council which underwrites the Deloitte & Touche design work, with an appropriate level of guarantee and liability from Deloitte and Touche for a period of 18 months after the deployment of the last workpackage. Haringey will have clear warranty transferability clauses should any future events lead to termination of infrastructure contract and/or transfer of service to another provider.

11.1.2 The rest of the section considers the procurement and contractual issues arising from this frame work.

11.2 Procurement issues

- 11.2.1 There are three areas of procurement to consider: the contract with Northgate, the contract with Deloitte & Touche and the purchase of hardware and software components.
- 11.2.2 The principal agreement with **Northgate**, which was entered into in April 2002 following a full procurement has within its scope the periodic refresh of the Council's infrastructure. This contract was let in the normal manner and the refresh activities are an ordered service within the agreement.
- 11.2.3 The agreement with **Deloitte & Touche** is further to and larger than existing agreements and is, therefore, best treated as a new contract. Seven pieces of work have been awarded to Deloitte & Touche in relation to IS/IT work in the last 12 months, totalling £760k. Three of these were following a competitive process and four by way of an extension.
- 11.2.4 Under the Council's contract standing orders there is a general requirement for competition and a specific requirement, for a contract of this size, to comply with EU procurement rules. EU rules are complied with as it is proposed to use the government's framework contract through S-CAT which is pre tendered for EU purposes. The report requests that the Council's contract standing order 6.4 (requirement to tender) is waived in accordance with standing order 7.3 (d) as the current relationship with Deloitte & Touche, their expertise in this area, their independence from the infrastructure provider and their knowledge and understanding of the Council are sufficient such that it is in the Council's overall interest so to waive.
- 11.2.5 All **hardware and software** components will be procured via the OGC G-Cat or S-Cat route (government goods and services framework contracts catalogues), with regular competitive quotations. This is a well-established protocol applied since 1999 technology refresh.

11.3 Contract issues

- 11.3.1 During all the managed service procurements legal advice was obtained via Bird and Bird (ICT contract legal specialists firm also used by OGC) and it is intended to continue this arrangement for the purpose of these agreements.
- 11.3.2 The established practice during ICT procurement programme between IT Services and the Head of Legal Services was to obtain Bird and Bird's legal appraisal upon which the Head of IT Services and the Head of Legal Services finalised commercial arrangements. It is proposed that a similar procedure will apply in respect of the infrastructure refresh project. It is proposed that the finalisation of the arrangements is delegated to the Interim Director of Support Services or, in his absence, the Director of Finance.

12 Governance and management

- 12.1 The project will be managed by a **project board** of officers and suppliers following the Council's project management framework. The project will be overseen by a programme management function and supported by the to be strengthened change management function within OD&L. The refresh project will be part of the work programme of the infrastructure stream of the Council's change programme.
- 12.2 The overall programme will be managed by the newly created Haringey Programme Board at an officer level and an appropriate Member body.

13 Comments of the Director of Finance

- 13.1 These proposals will constitute a major project for the Council, both in terms of the project itself and also the associated provision of office space and the logistics of the relocation. There will be important linkages between the IEG, and accommodation strategy and the overall opportunities for improved efficiency will need to be explored. The Council's financial plans assume savings of £1m per annum for the three years from 2004/05 in respect of these activities.

14 Comments of the Head of Procurement

- 14.1 This report covers 3 elements of the procurement strategy for the technology refresh. The proposed agreement with Northgate is appropriate within the terms of the existing contract with Northgate.
- 14.2 The proposed contract with Deloitte and Touche requires Members to waive the requirement to tender in the best interests of the Council; the argument for such a waiver is detailed in paragraph 11.2.3, and is dealt with appropriately.
- 14.3 The proposals for procurement of hardware and software via competitive quotations from G-Cat and S-Cat are acceptable.

15 Comments of the Head of Legal Services

- 15.1 Legal advice in relation to the contracts between the Council and Northgate, and the Council and Deloitte & Touche, has been provided by Bird & Bird. Corporate Legal Services has not been involved except as far as necessary to action the execution of the contract documents. Accordingly no specific comment can be made as to the use of an ordered service agreement under the Northgate contract for the subject matter proposed. In principle it is agreed as an appropriate way to have those requirements met.
- 15.2 As regards the work proposed to be undertaken by Deloitte & Touche, it is agreed that this should be dealt with by way of a new contract. The value of this contract is over £250,000 and accordingly the decision to award the contract would fall to the Executive under Contract Standing Order 11.4, and approval to a waiver of the requirement to tender is also the Executive's responsibility, under CSO 7.2 (a).

- 15.3 A waiver of the requirement to tender for the contract proposed to be awarded to Deloitte & Touche is sought on the basis that it is in the Council's overall interest (CSO 7.3(d)), for the reasons set out at paragraph 11.2.3 of the report. This is an appropriate basis for a waiver. It should be noted that the value of the contract is expected to exceed the level at which the Public Services Contracts Regulations apply and accordingly advertising in the EU would usually be required. A waiver of CSO requirements would not override that. However in this case as the OGC's S-Cat is used as the basis for the contract, the requirements of the Regulations are considered met.
- 15.4 The Executive is able to delegate any of its functions to a Director (Constitution, Part 4, Executive Procedure Rules, 1.2(a), page 128). Accordingly delegation of the finalisation of the contractual arrangements to the Interim Director of Support Services (recommendation 2.7) may be agreed.

16 Environmental Comments

- 16.1 Resulting from the NT roll out the vast majority of schools benefited from a donation of our redundant equipment. This enabled many schools to create whole computer suites with a one child to one PC ratio, a situation not possible without our donation.
- 16.2 Having satisfied schools' requirements, we extended the offer to charities and local neighbourhood groups, here again affording them opportunities that they would never have envisaged due to limited funding. With the up and coming refresh it is our intention to repeat the exercise, this time offering equipment that is more up-to-date.

17 Equalities Comments

- 17.1 The proposed refresh approach will provide a flexible infrastructure that will underpin the future development of web access for all customer services helping to address customer mobility limitations as well as offering limited translations for our multi-national community.
- 17.2 The future development of Haringey Portal will further aid development of equal standards in respect of information and service provision, a key benefit of earlier investment in the Access to Services strategy.

18 Links with Accommodation Strategy

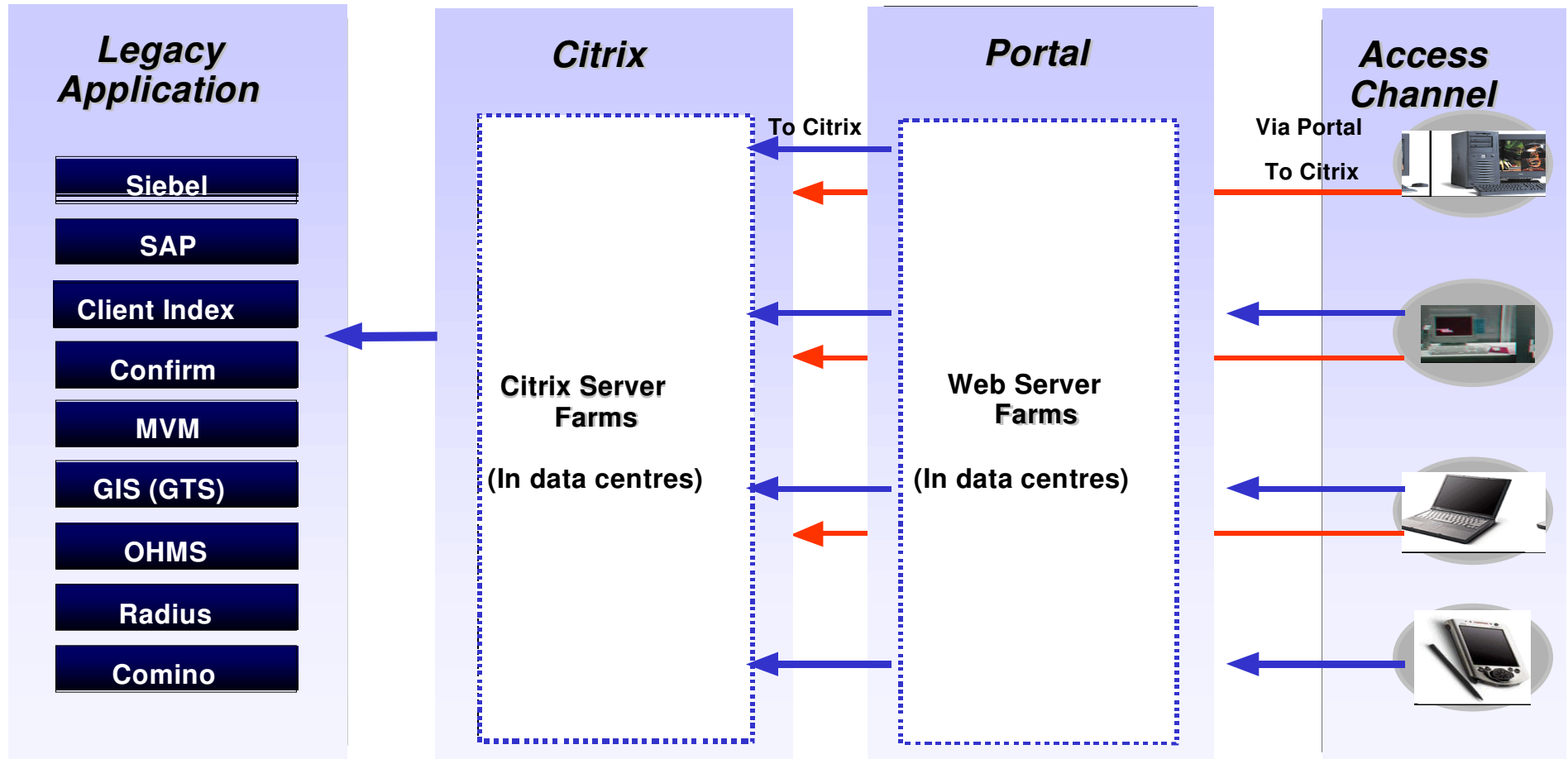
- 18.1 As the Council has recently agreed the adoption of a wide ranging accommodation strategy the opportunity exists for a fundamental review and co-ordination of how the Council's services are delivered and accessed by both staff and members of the public.
- 18.2 In order to maximise the opportunities arising from this IT strategy officers from IT, HR and Property Services will need to work together in producing a programme which will incorporate relevant aspects of these three areas of work. For example, the property strategy will likely see the Council withdrawing from certain premises which will, as a result, not require upgrading via this IT refresh programme; likewise any

space savings and the introduction by HR of a policy on alternative methods of working (hot-desking, remote working) will need to be reflected in the analysis of future physical space requirements.

- 18.3 Clear accommodation strategy is imperative to the successful roll out of the refresh programme as the life span of each property could determine the level of cost-effective deployment of thin client technology.

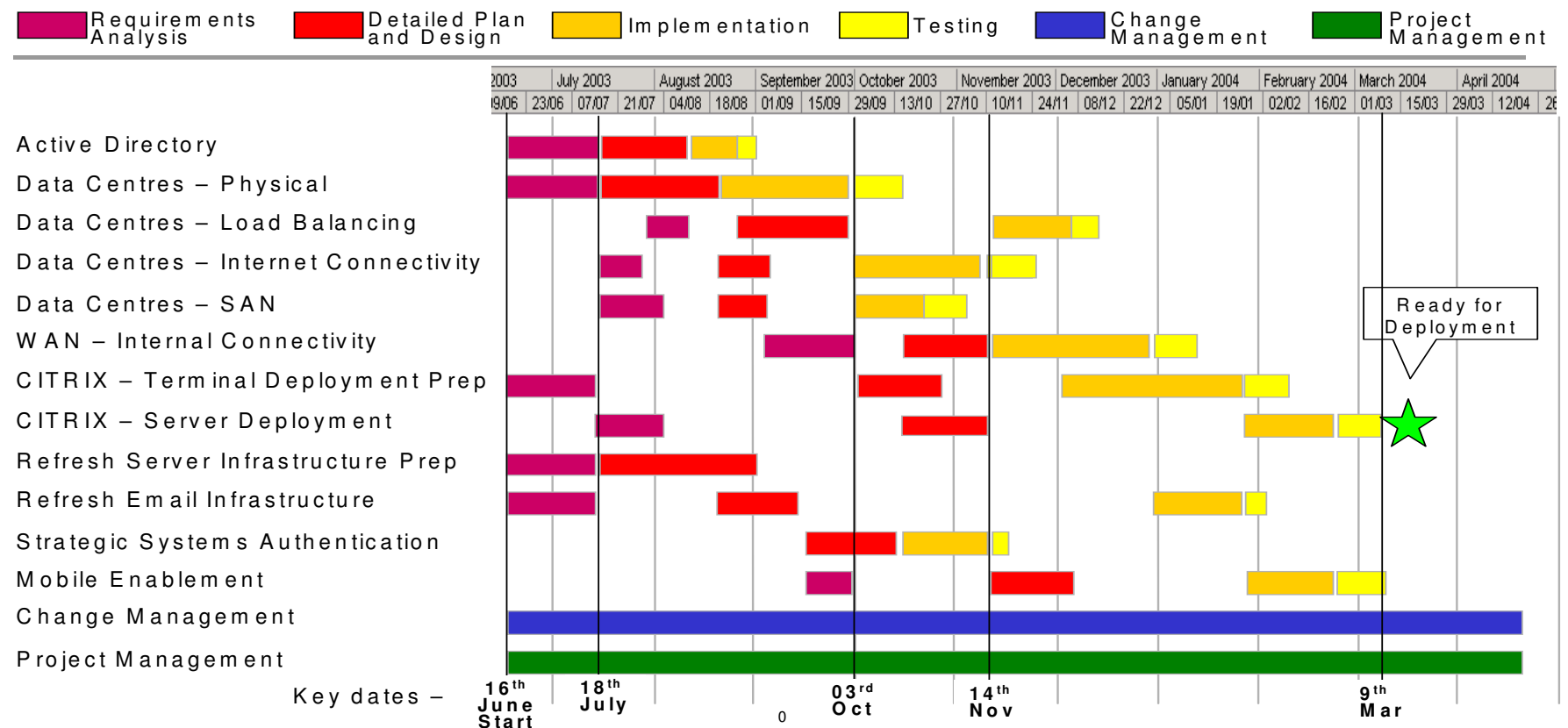
APPENDIX 1 - "Thin Client" Technology Infrastructure

Business



APPENDIX 2 - Proposed Approach

Predicted Project Timeline



Appendix 4

Gartner comments and our response

GARTNER COMMENT	HARINGEY RESPONSE
Enterprises should determine the total cost of ownership before deciding whether to employ thin clients for task-orientated users. decisions to deploy thin or fat clients should not be based on acquisition costs alone.	We have been mindful of the total cost of ownership and, as the report sets out, we believe that there will be costs savings over the life of the infrastructure. Most of these are being used to build a more resilient network with improved disaster recovery capability.
Haringey will need to apply the appropriate skills with the necessary experience to design and implement a robust and resilient Thin Client environment.	Haringey recognise this and are proposing to commission Deloitte and Northgate to undertake this work. The combination of skills from these two companies and their understanding of our requirements and current network architecture, will be vital to ensuring that a technology infrastructure is delivered that can support a thin client infrastructure that meets our requirements. In addition, we have ensured that the design is appropriately ratified by Deloitte, Northgate and the Council, and have put procedures for its support in place after the infrastructure has been rolled out.
Enterprises using best practices when deploying Thin Clients will achieve at least twice the return on investment (ROI).	Gartner have been more aggressive than our original estimates for reduction in support costs, but it shows that the benefits outlined in the IS Strategies are justified. We do expect a like for like reduction in support costs, but this could ultimately translate into us being able to support a much more robust and resilient infrastructure for the similar support costs to the ones we currently incur. It should also be noted that pre-agreed budget reduction already take to account substantial reduction in ICT budget as a direct result of this proposal.
Enterprises deploying thin clients should ensure adequate bandwidth exists on WAN links to support the desired number of active users, and use policy and traffic prioritisation techniques in the network to ensure that	This comes down to identifying and understanding the user requirements and ensuring that the network can support the bandwidth that will be covered. In addition, by understanding what the users do, user policy and traffic prioritisation techniques can be developed. The implementation plan for the technology refresh projects puts

response time requirements are met.	considerable emphasis on understanding and capturing the requirements. The current estimated costs for bandwidth and network components assume a resilient high bandwidth network.
Gartner recommend that Haringey conduct a vendor assessment that analyses the authority's requirements against the functionality offerings of vendors other than Citrix. This exercise may present a more cost effective Thin Client solution to Haringey.	As part of the Tech refresh strategy, we considered several thin client enabling technologies, including using Terminal Services without MetaFrame, Blue Moon systems and Novell products. These were all eliminated. The subsequent Gartner comments support the conclusion of this exercise.
Enterprises with new deployments of Windows 2000 Terminal Services with over 200 active users should use MF Xpa or Xpe, or Novell OnDemand Services.	As stated above, the IS Strategies recommended Citrix Xpe for the reasons restated by the Gartner review. Novell OnDemand services were also not chosen for reasons stated above. In addition, Gartner state that through 2006 only up to 10% of thin client installations will use Novell OnDemand Services, which is a clear indication that this technology is not widespread.
Enterprises with small Thin Client Deployments of under 200 active users should consider using Windows 2000 Terminal Services with Microsoft's RDP protocol.	Haringey's deployment will have over 3000 users and therefore Terminal services is not recommended, as clearly stated by Gartner.