

Appendix B**Option Appraisal for Harrow SSD****1. Management Summary**

Social Services (the SSD) has carried out substantial groundwork on its IT Strategy over the last 2-3 years and is now ready to move ahead with implementing the preferred approach. The IT Steering Group has requested this Option Appraisal.

The SSD needs to replace the aging in-house system (CARES) with a flexible product which will meet present needs and cope with expected changes, particularly the increasing emphasis on joint working. Current trends in the IT marketplace favour a “layered architecture” for maximum flexibility and ability to connect to other systems.

In essence, the issue for the SSD is whether to :

- buy a SSD package and wait for the Council’s e-government plans to provide the means to link it into the corporate Enterprise Application Integration (EAI) - the components of which are not yet known

or

- continue its preferred approach. This would mean adopting a layered architecture within its immediate sphere, (enabling integration with the PCT for SAP,) and working towards fitting this configuration into whatever the Council adopts as its own approach to EAI

The latter solution would appear to give the best degree of flexibility for both the SSD and the Council. The SSD would therefore like to implement the pilot for PDSS and Older People services (incorporating support for Delayed Discharge and SAP) and extend the functionality of the current pilot to cover the remainder of the care management process, including costed care packages and commitment accounting. Discussions about joint funding with the PCT are underway.

The proposed architecture may involve extending the Oracle database currently used by CARES rather than using the JADE system purchased under the ISB, due to risks identified in the technical evaluation. It will involve investing in in-house expertise with the chosen Business Process Management (BPM) toolset and this will be achieved through recruiting 2-3 dedicated staff and using the product supplier (Metastorm) to provide initial support and an ongoing role for design advice and QA. There are examples of LA and health sites where this arrangement has resulted in cost efficient and sustainable results (see appendix C).

2. Introduction

In the course of developing its IT Strategy, Harrow SSD has:

- Evaluated the current system (CARES),
- Checked options for modernising CARES (including a successful pilot to test a “layered architecture” using a BPM product)
- Reviewed package solutions

The SSD is now ready to move ahead with the preferred approach. There is an urgent need to do so, since CARES (without the proposed BPM addition) is

deteriorating and the SSD needs to meet targets for implementation of support for Delayed Discharge and the Single Assessment Process (SAP).

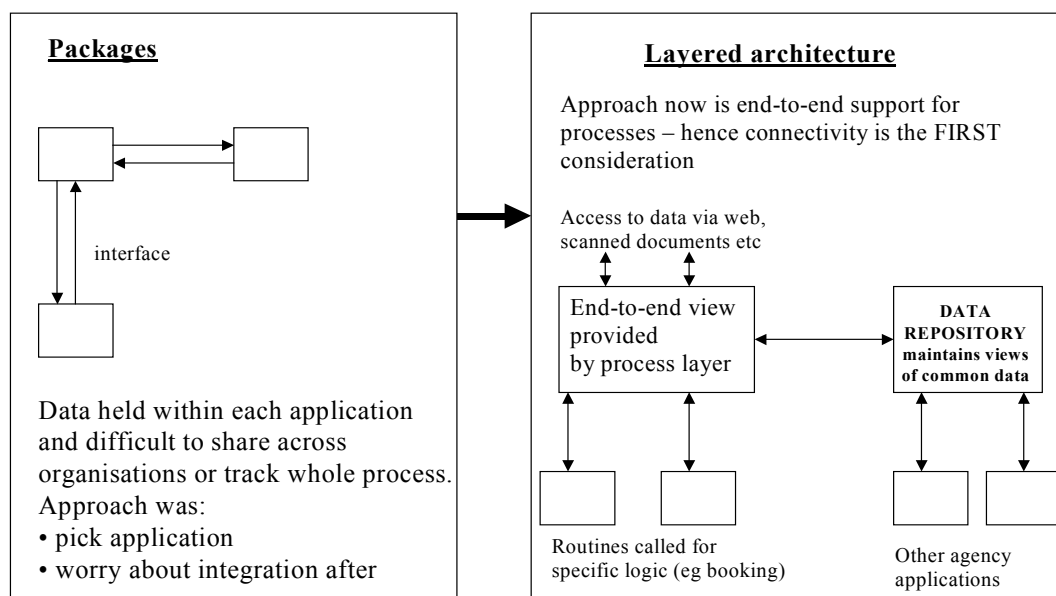
However, the IT Strategy Group would like an option appraisal before endorsing this strategy. Particular issues the Group would like reassurance on are:

- Viability of the layered architecture approach (with particular reference to future-proofing)
- Match to corporate IT standards for “openness”
- Ratification of e-works and JADE as the components of the layered architecture
- Costs of this option versus others (mainly the “buy package” option, with appropriate additions to support joint working)

3. Risk

The key issue in the current debate is risk. In the past, risk analysis has focused on the ability of organisations to acquire and maintain applications and it has been attractive to offset this risk by buying in packages. However, the nature of risk has changed. Package solutions can now be a problem if they present a barrier to joint working between organisations or block end-to-end processes which cross application areas. Figure 1 shows the change in emphasis brought about by e-government.

Fig 1: System architectures



In order to implement the layered architecture shown in figure 1, Harrow SSD will need:

- A process management tool
- A repository

JADE has been suggested as a candidate for both requirements. In doing this, it would be acting as a single Enterprise Application Integration (EAI), but its capacity for this is largely untried and untested. The only site where JADE is acting as more

than a Mental Health system is the Northern Territories. Moreover, the technical evaluation (see appendix A) has raised some issues about the risks attached to over-dependence on JADE and material supplied by JADE suggests that Harrow would be entering a very open-ended agreement if it chose to partner JADE in development of a social care system.

The SSD is also aware (given the importance placed on integration) that its decision must complement the future strategies adopted by the Council and PCT.

4. Options and Findings

4.1 Package solution for SSD

A number of other SSDs who bought packages recently were approached. The findings are:

- The market leaders are SWIFT (from Anite) and careFirst (from OLM). In England and Wales, Anite has 43 sites, OLM has 49. There are a few sites (less than 10) for each of Care Works, In4tek and Core Logic). Care Works currently covers only Children's services but a full product (developed through a partnership with Bury SSD) was due for release in October 2002. However, the website shows no news items after September 2002. Core Logic is also incomplete
- Package evaluation can take up to a year and does not result in 100% consensus on the choice – there will always be some who like it and some who do not. OLM has won in a number of instances because it is cheaper and is developing a middleware product (careXchange) to support SAP
- Total project costs for acquiring a package range from £750K (small SSD) to £1.5m. However, there are additional costs for providing an in-house team to perform process-mapping, training, data cut-over, implementation and management of future releases (not included in costs above). One London SSD has apparently spent over £1m on contractors to support the implementation alone
- In all cases, the SSDs are finding they will need an additional component (middleware) to allow the connectivity to other systems required for SAP. It appears that the package vendors are not up-to-speed on the new priority to support joint working (additional middleware costs are not included in costs above)

4.2 Layered architecture solution for SSD, as a joint project with PCT

This is based on the successful completion of a pilot in PDSS and the results of a technical evaluation (see appendix A). The pilot uses a BPM tool (e-works from Metastorm) to provide a process-driven interface to CARES. Evaluation of the pilot indicates that customer support staff find the system a great improvement on CARES and significant productivity gains have been achieved.

The IT Strategy envisaged using e-works for the process layer and JADE as the repository (see figure 1). However, the technical evaluation has raised some issues about connecting to JADE. The better option appears to be to re-design the CARES

database as the repository, extending it to mirror the shared records currently held in JADE, or provide a new Oracle database on these lines.

The PDSS pilot has shown that e-works can support the layered architecture and should be able to integrate with:

- Any configuration Harrow chooses for its eventual e-government solution
- Any configuration that results from the current national health procurement program (LSPs)

E-works is not the only possibility for this role – other BPM software could be considered. For this purpose, a brief survey of a number of other candidates was conducted (see appendix C). However, e-works emerges as a good candidate due to:

- Proven use in other LA/health sites
- Cost effectiveness

5. Analysis of Findings

The key questions considered were:

- a) Package or in-house development?
- b) If package, should JADE be (part of) the answer?
- c) If not package, is Business Process Management a viable part of the solution?
- d) If Yes, how should we proceed?

Packages are superficially attractive – single system, single supplier, minimal internal maintenance. But they are likely to be expensive; almost guaranteed to not fully meet identified requirements; will need considerable enhancement to cope with cross-agency data integration (almost certainly needing some kind of additional ‘middleware’ package); are problematic in terms of ‘fit’ with corporate IT strategy / standards and in terms of creating interfaces to corporate financial systems; and leave the SSD ‘hostage to fortune’ in terms of future development, lack of control over options and time-frames for further development, and their associated costs.

JADE looks less and less likely as a contender, either as a ‘package solution’ or as a data repository within a ‘layered architecture’ solution. The information provided by JADE indicates that significant redesign will be needed to create a suitable social care system for UK use and, (in spite of requests for this information), no real detail has been supplied as to which modules are already built, which are still to be built, and what the overall costs might be.

The ISB experience suggests it is likely to be very expensive and its one major asset – ability to integrate data from legacy health and social care systems – is in question following the technical evaluation. There are also concerns that it does not meet corporate IT standards.

In addition, the current future of JADE in UK is subject to the results of the LSP selection. It may not be selected, and if it is, then the consortium leader (IBM) may require that it is ported to IBM’s own technology platform.

Rejecting JADE does forgo the option of a development partnership, but the bargaining position which such an arrangement might provide will be of limited use if the company is not securely placed in the UK market.

Use of BPM (workflow) within PDSS has shown proven benefits, although not without development / implementation problems (useful lessons learned). It is very popular with customer support staff, though penetration with care management staff is much lower (partly a consequence of a long-standing 'organisational-culture' problem which would impact on the introduction of any new system requiring direct input from front-line professional staff). Flexibility / adaptability of the toolset has been well demonstrated.

The best option appears to be to continue to use a BPM toolset to provide front-end and application integration, using an Oracle database as the repository (since this fits well with corporate standards and emerging corporate strategy).

The options for the repository are to redesign the CARES database or re-build (incorporating CARES structures and replicating shared data currently held in JADE). A detailed technical appraisal is needed as to which route is most cost-effective and offers best 'time to solution'.

The PDSS pilot has been shown to be a sound solution. It needs to be refined (since it was built as a pilot), rolled-out to other adult care groups (and possibly C&F), and extended to incorporate delayed discharge and SAP developments (in partnership with the PCT). This will provide integration with relevant health systems.

In order to develop in-house capability and capitalise on the BPM toolset, the SSD should buy in fixed-term business analyst and programming expertise (using this to train in-house programming skills) or tender for development partners.

A detailed implementation plan should be developed with the PCT, with attention to resourcing (particularly for user involvement and project management). At this stage, indicative development effort for completion of a system for Adults, including health and finance links (see appendix B) is 102 weeks. This has been costed at £413,600, using a mix of in-house resources with decreasing involvement of consultants, for skills transfer. The overall 5 year costs for this option (including implementation effort) compare favourably with cost for the package solution (see section 5).

6. Summary Costs

Detailed calculations (including costs for in-house staff) are shown in Appendix B. Summary figures are:

E-works option

Year	Cost
2003/4	£221,400
2004/5	£336,450
2005/6	£294,450
2006/7	£153,450
2007/8	£153,450
Total	£1,159,200

Package Option

Year	Cost
2003/4	£113,300
2004/5	£935,000
2005/6	£565,000

2006/7	£327,000
2007/8	£327,000
Total	£2,267,000

Separate Costing of C&F (using Access with separate Oracle database)
£761,200

Adjusted e-works cost (without C&F)
£1,097,190

Adjusted package cost (without C&F)
£1,753,000

7. Recommendations

If the Council accepts that the key decision is to provide an architecture that will support integration and joint working, then the SSD's preferred solution becomes the best option. Buying in a package would leave the SSD open to further costs for the immediate tasks of achieving an integrated solution for SAP and delayed discharge with the PCT. Expenditure on custom-interfaces would be likely to increase with each new joint working initiative.

The PDSS pilot has demonstrated that an e-works solution can match the perceived benefits of a packaged solution. It can be implemented as quickly (since there is no need to reconfigure business processes to match the way a package works). It can provide as much functionality (and more, if the process-support features are taken into account). For instance, statistics on the number of transactions, time-to-target and outcomes (vital for satisfying the ongoing need for Performance Data) are collected automatically.

E-works is a tried and tested technology, used widely in industry, and runs on an Oracle database. Sufficient companies exist who can be contracted in to provide development and maintenance support (though the SSD would do well to develop some expertise of its own, and use Metastorm or associated installation companies to provide design advice and QA).

An e-works solution has some advantages over a packaged solution. In addition to its integration and process-support capabilities, it can be quickly deployed for a variety of simple support functions (eg routine work in finance and HR, provision of web-based forms for citizen access or mobile computing). It is cost-effective (particularly if the SSD decides to standardise on an e-work platform and buys the Enterprise License). This will then allow an increase in users at no additional cost (including citizens over the internet, or staff in the LA or PCT, accessing SSD applications).

The SSD's IT Strategy has introduced a different view of risk and there are not (yet) many SSDs taking the 'layered architecture' approach. However, Metastorm has over 60 councils using the product and there are relevant experiences:

- Stirling and Bracknell are using e-works for process support in e-government functions
- Cumbria and Hampshire are using it for local government functions
- Cornwall are using it across primary and secondary care, to book and track patient appointments

The SSD has needed to move as fast as possible to address deficits in its systems and to meet government targets for joint working. For this reason, it chose not to tender for the initial PDSS pilot, but to negotiate competitive terms with the supplier whom Metastorm recommended as having the best knowledge of health and social care. For further developments, the SSD proposes to adopt a phased approach and determine whether some sort of procurement exercise is needed to select an installation company. However, other councils have found that it is cost-effective to support e-works developments in-house and the SSD may want to recruit dedicated business analysis and programming expertise for this purpose. (Planned steps are shown in appendix D).

The recommendation of this report is that the SSD continue with its IT Strategy, as planned. Work should begin immediately on a joint e-works solution with the PCT, (sharing costs), for Older People, SAP and Delayed Discharge.

- **Appendix A – summary of technical evaluation**

The areas investigated by an independent technology company, Unilog, were:

1. A role for JADE
2. Using JADE and e-works
3. Using e-works without JADE
4. Future scenarios (integration with e-government solutions)

The following are excerpts from the report (key points in red).

1. There are of course many advantages to using JADE in isolation (lower licensing costs, single technology, no integration required, simpler management and support, etc), however there are also some disadvantages which should be considered, including being heavily reliant on one supplier, the availability of JADE resources for ongoing support and development and the **problems of integration being shifted back to when the Single Assessment Process is implemented or Harrow Corporate IT implement an 'enterprise-wide' ERP/CRM solution.** (Also concerns about):
 - The ongoing stability of Jade Software Corp., both globally and in the UK. For example, recently **re-capitalised and re-developing its business.**
 - The stability of the JADE product. For example, **partnership with IBM in NHS LSP bid may lead to realignment of JADE solutions on to IBM software platform (WebSphere)**
2. Should the decision be made that the **investment in e-Work is justified by the increased, richer, more mature functionality provided,** there are a number of options available for integrating e-Work and JADE, the choice of which is highly dependant on the responsibilities assigned to the respective components. (However there are concerns)
 - Solution is unlikely to satisfy Harrow Corporate IT standards, which are likely to state that all applications must have an ODBC interface. **As not all of JADEs functionality/data can be accessed through ODBC, it will fail this requirement**
3. From a technical perspective, and with the limited time available for this study, **the preferred approach would appear to be the final option***, using each application for it's core strength and providing an open, standard solution which is likely to satisfy corporate level standards.

* Note: this option is to use e-works for supporting the SSD, with a separate Oracle database as the repository. JADE would simply be the MH system, providing data to the repository

4. Consideration needs to be taken to allow for as open, standard, flexible and manageable interfaces as possible, with the ability to expose new functionality with as little effort as possible. One of the most suitable ways to achieve this is to ensure that products used have the ability to offer functionality through the use of Web Services. **Once again, any decision on the above will hinge on the suitability of JADE to act as a middleware solution, however it is more likely that the complex business processes (along with the requirement to integrate with multiple external applications) is likely to be more suited to e-Work or another BPM-centric product**

Harrow SSD Development Plan

1. Tasks

ID	Milestone	Start	Finish	Duration	2003	2004												2005							
					Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun		
1	A: extend PDSS pilot for SAP/delayed discharge	01/12/2003	01/04/2004	17.8w																					
2	B: pilot and implement across health/SSD	01/04/2004	02/02/2005	44w																					
3	C: develop and pilot extended care packages	01/07/2004	01/03/2005	34.8w																					
4	D: develop and pilot commitment accounting	01/12/2004	01/06/2005	26.2w																					
5	E: extra functions for specialisms	01/03/2005	01/07/2005	17.8w																					

Assumptions relating to development sequence

- There is a logical sequence (eg care packages must be designed before commitment accounting can be addressed), but the developments can be overlapped as long as key design decisions are taken in sequence
- It is important to roll-out the system as soon as possible so that the benefits begin to accrue and timely feedback on “what works” is obtained. This argues for a “wide, thin” implementation rather than a “narrow, deep” one, with additional functionality added later. However, each implementation should provide benefits (both strategic and operational). Hence milestone A is defined as current PDSS functionality (“tidied” and rendered robust enough for a production system) with the minimal addition of SAP and delayed discharge. Extending PDSS functionality to cover more complex cases (multiple sources for a single service; multiple items in a care package) and adding a service directory and client diary function is currently proposed for milestone C. However, if any of these are considered “must haves” for OP, then the content of the phases needs to be adjusted

Table 1

Milestone / time-scale	Tasks	Comment	Effort
Phase 3, milestone A: PDSS ready for wider use and client/patient records loaded to repository. Includes design of SAP and Delayed Discharge	Agree protocols between agencies for sharing information, accessing services. Ensure PCT and OP seen and accept PDSS pilot	Data sharing agreement exists between 3 Caldicott guardians. Demos done to PCT/OP	Complete

Will take: 4 months Elapsed			
	Adapt PDSS pilot to use chosen (shared) assessment form instead of current form (this may be by interfacing to Easycare). Write results to repository. Also need to support review process	Modularise PDSS pilot and design which bits will be used by which agency (route mapping). Agree use of Easycare (depends on price?) or other assessment screens/paper versions	4 weeks devt. 4 wks devt 4 wks support
	Extend PDSS pilot to support tracking of delayed discharge	Agree data to be shared (eg planned discharge date/destination, actual discharge date/destination, reasons for delay).	8 weeks devt
	Prepare repository (Redesign of CARES or new Oracle database)	Design decisions needed: <ul style="list-style-type: none"> • Whether to re-work CARES database or start again • Principles of using the toolset (what is done in e-works, where routines are called, where data is held) Design updates to repository	8 weeks devt
	Clean data for OP/PD/LD clients in repository (and load any relevant patient records where receiving community health services?)	Would we want to hold medical data on clients known to the SSD?	16 weeks support
Milestone A total		Development – 24 weeks Support – 20 weeks	44 weeks

Milestone / time-scale	Tasks	Comment	Effort
Phase 3, milestone B: SAP and Delayed Discharge available to health/SSD Will take: 6 months elapsed	Upgrade PDSS to work in the health environment (check how messages will be sent/received, assign security-IDs). Make system available through browser interface to GPs, community health and hospital. PDSS pilot already shown to work through standard web browser so no development work needed	Ensure equipment in health can receive browser interface (assume some terminal/ network upgrades will be needed). EMIS has an interface for accessing e-work forms – need to check Torex. Decide what system community health will use and how they will connect to adapted PDSS Pilot adapted PDSS pilot + SAP and delayed discharge in one GP surgery, SSD office and clinic. Review results	8 weeks devt 8 weeks support 20 wks support.

	Ensure updates to Oracle repository are working.	Review and make any necessary changes. Implement and roll out to all	4 weeks devt, 8 weeks support
Milestone B total		Development – 12 weeks Support – 36 weeks	48 weeks

Milestone / time-scale	Tasks	Comment	Effort
Phase 4, milestone C: Care packages available to health/SSD Will take: 8 months elapsed	Extend care packages in PDSS pilot to cover full range of services provided through GP, community health and SSD: will probably involve creating a service directory. Provide diary of client services.	Includes design for updating repository (service directory/ care packages). The SSD is intending for social care staff to enter required services and contracts staff to allocate to contracts (requires workflow to route transactions and reflect decisions back).	12 weeks devt, 4 weeks support
	Care package software available to GPs, community health and SSD. Enable client views from hospital	Pilot extension of care packages with one GP surgery, SSD office and clinic. Review results Review and make any necessary changes. Roll out to all. Provide views of care package to hospital	20 weeks support 4 weeks devt, 8 weeks support 4 weeks devt, 2 weeks support
Milestone C total		Development – 20 weeks Support – 34 weeks	54 weeks

Milestone / time-scale	Tasks	Comment	Effort
Phase 4, milestone D: Extend finance functionality Will take: 6 months elapsed	Design commitment accounting (will need access to contracts, prices and GL codes)	There are a number of options. Principles need to be agreed at the point when the care packages are designed (see above). Also need to decide required reporting (e.g. by service type, provider). Will need input from finance and operational managers	6 weeks devt, 2 weeks support

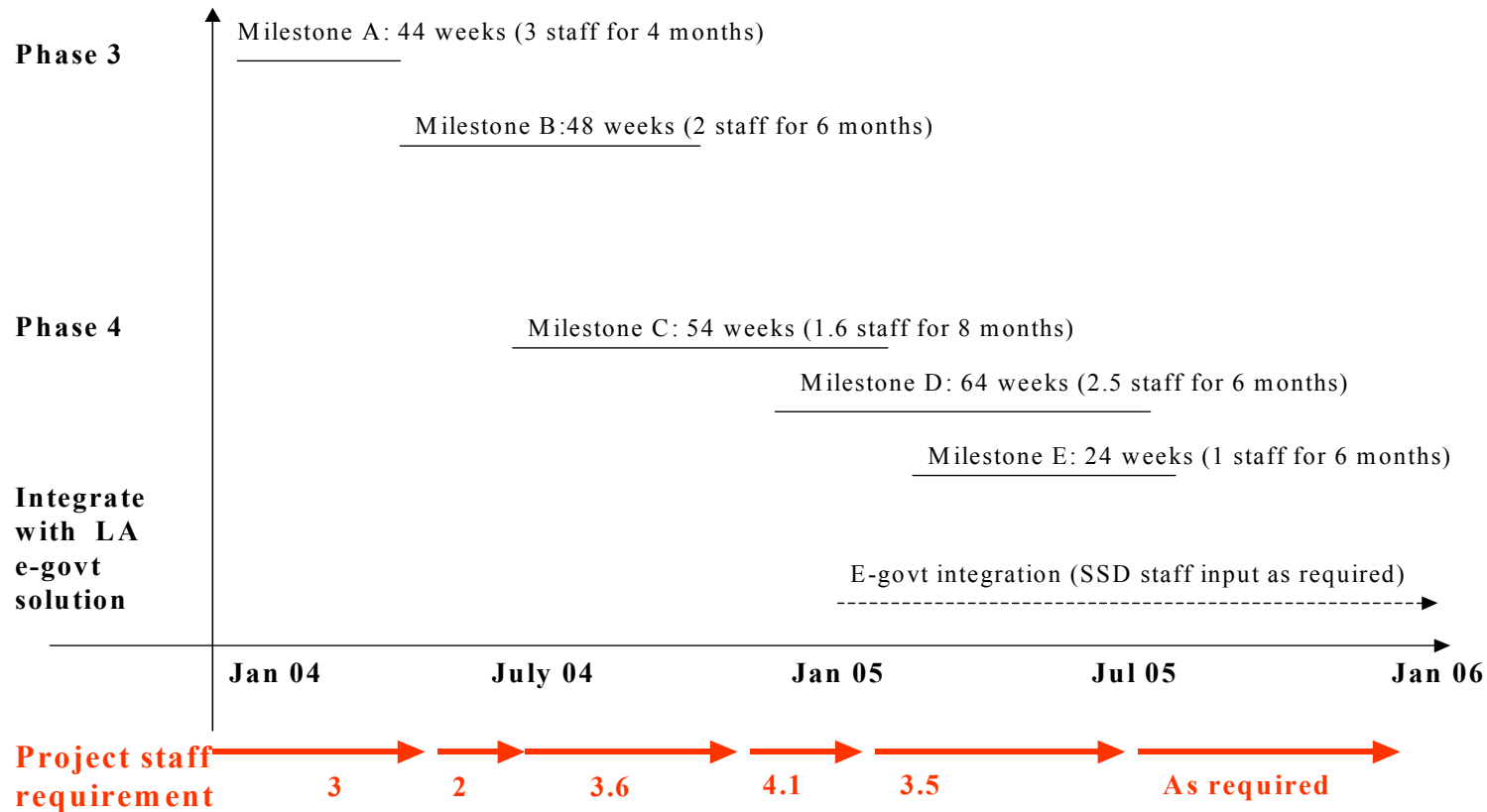
	Build the commitment accounting module to accumulate planned costs. Show this as raw data (e.g. we have spent £x on respite care and £y with supplier A) and also accumulated by budget head (e.g. we have spent £z on children with disabilities, 10% of the packages for OP use SP funding etc)	Needs to be as flexible as possible to accommodate future changes in services, funding streams, GL codes, contract types etc with minimum effort. What financial reporting will the PCT want now/in the future?	16 weeks devt, 8 weeks support
	Pilot electronic ordering: capture transactions in a file to be a) authorised at appropriate level and b) passed to corporate purchasing system. Initially, this could involve purchase of services to prevent hospital admission / facilitate discharge Ensure updates to Oracle repository and corporate finance are working.	Take transactions from care package and decide how to get them to providers (e.g. through corporate purchasing system). Also need confirmation of order acceptance and of start of service. Also ways to process amendments to service and reporting of actual service provided. Pilot one provider/service type	2 weeks devt, 6 weeks support
	Decide on extent of electronic ordering to be implemented: <ul style="list-style-type: none"> Major contracts for SSD only (e.g. domiciliary care) Use by PCT/Trust under pooled budgets (e.g. to facilitate discharge) Work towards electronic ordering of ALL services to support e-govt targets. Design agreed extent of electronic ordering (and linkages)	To be discussed further once feasibility has been demonstrated. Also needs to take account of pressure to introduce B2B under e-government.	10 weeks devt, 6 weeks support
	Implement full commitment accounting and B2B finance system	Will involve view of finance data to practitioner when setting up care package, and to manager when authorising it. Also views of aggregate data under various cost centres to managers, as appropriate.	2 weeks devt, 6 weeks support
Milestone D total		Development – 36 weeks Support –28 weeks	64 weeks

Milestone / time-scale	Tasks	Comment	Effort
Phase 4, milestone E: address specialist needs Will take: 4 months elapsed	Review implementation for all specialist teams and add any missing functionality.	Ensure only necessary additions made (likely to include LD register, MOW, integrated equipment stores and incontinence service)	10 weeks devt, 2 weeks support
	Implement and roll out		12 weeks support
Milestone E total		Development - 10 weeks Support - 14 weeks	24 weeks

GRAND TOTAL (adults)		Development – 102 weeks Support - 132 weeks	234 weeks
-----------------------------	--	--	------------------

2. Cost Calculations for e-works option

Harrow SSD : Staffing plan



Development Cost Assumptions

This section deals with alternative ways to manage the development (contract out or build in-house expertise, supported by contractors on a reducing basis). Other costs associated with the implementation are shown in section 3.

- Figures used:
 - Contractors - £800/d
 - In-house staff - £39,000/yr (including on-costs), £750/week
 - Allowance made for significant project effort on:
 - Pilots (46 weeks support)
 - Data cleaning/loading client/patient records (62 weeks support)
 - Implementation and roll-out (54 weeks technical and support input)

Method A: contract out the development

102 weeks development at £800/d = £408,000

132 weeks support for various in-house tasks (eg cleaning data, agreeing protocols, supporting pilots, roll out of system, project management) which will not be contracted out = £99,000

Total method A = £507,000

Method B: develop with toolset, in-house

In-house staff shown involved in all work (shadowing the development initially, taking progressive role in development over time)

Allowance is made for (decreasing) use of consultancy over the 2 year development period, as in-house skills are built up.

Total method B = £339,500

Costs are apportioned as follows:

Milestone	Effort	Staff cost	Bought in devt consultancy	Total
Phase 3 Milestone A	24 weeks devt 20 weeks support	£33,000	24 weeks - £96,000 (full use of consultancy)	£129,000
Milestone B	12 weeks devt 36 weeks support	£36,000	6 weeks – £24,000 (50% use of consultancy)	£60,000
Phase 4 Milestone C	20 weeks devt 34 weeks support	£40,500	5 weeks - £20,000 (25% use of consultancy)	£60,500
Milestone D	36 weeks devt 28 weeks support	£48,000	20d for advice/QA - £16,000	£64,000
Milestone E	10 weeks devt 14 weeks support	£18,000	10d for advice/QA - £8,000	£26,000
Total cost	102 weeks devt 132 weeks support (234 total)	Staff £175,500	Consultancy £164,000	Total £339,500

NOTE: all figures subject to specification of requirements and contract prices

3. Comparison costs e-works/package solution

Table 2 itemises costs for the e-works solution (as recommended in Harrow SSD IT Strategy). Table 3 provides a comparison set of costs for the option of buying in packages.

3.1 E-works option

Assumptions in table 2 are:

- Items of work are based on a development sequence carried out over 2 years
- These include provision of system for only Adults (C&F system is currently assumed to be addressed separately).
- Costs are based on Harrow SSD staff carrying out all work, with decreasing use of consultants
- Does not envisage block secondments of operational staff to project, but does allow for back-filling of posts during training and for involvement of “experts” from each of the 4 adult teams (4 FTE in 04/05, 3 in 05/06, 2 thereafter). The “expert” role will involve help with training and implementation, but the role has an ongoing element of supporting the operational teams in Performance Management (eg extracting data for monitoring trends in demand, reviewing time-to-assess targets)
- No costs have been included for items which will be required whichever option is adopted:
 - project management
 - current software licenses (eg Oracle, Discoverer)
 - current SSD IT section (training, help-desk)
 - managing the network (performance, new users etc)
 - upgrades/maintenance of network, server etc
 - infrastructure (PCs, printers, PDAs etc)
 - DBA tasks for ongoing maintenance of Oracle database
- No allowance has been made for **reduced** costs for maintenance of current systems and ongoing work under this solution

Table 2: e-works toolset**Year: 2003/4****Government Targets:**

April 03 – plans for integrated continence service.

Oct 03 – start of shadow reimbursement

April 04 – SAP, joint equipment service, integrated continence service. Start of live reimbursement

Note: support for joint equipment/incontinence service not scheduled for development until Milestone E (Feb 05). However, target for SAP (and support for delayed discharge) will be met if work starts Dec 03.

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software	Licenses for PDSS	£35,000	
Development	PDSS pilot	£30,000	Interworking have said that true cost of pilot was £30,000 (although extra days were supplied, to compensate for lack of initial specification and changes “on the fly”)
	Phase 3 Milestone A (to start Dec 2003)	£129,000	Scoping/specification for extension of PDSS for SAP/delayed discharge; reviews; design of repository; decision on in-house development versus installation contract; agreement on costs and partnership principles with PCT, extension of PDSS
Implementation	4 FTE to provide user input and assist developers (3 months to end of year)	£39,000	Additional implementation cost allowed for training, back-filling of posts and to have “local experts” to assist with implementation and provide support for Performance Management
Support	N/A	-	
2003/4 total		£233,000	

Year: 2004/5**Government Targets:**

Children IRT system required by 2004.

Drive for intermediate care (prevent admission; facilitate discharge). Improved utilisation of drug treatment (55% improvement). Targets for education/employment of children/CLA

Note: the C&F system is being progressed separately and is not covered in this document

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software	Licenses to extend PDSS system to OP	£40,000	Cost of additional licenses would be £36K plus £30K server license, but option adopted is to buy Enterprise License for £75K (less previous license costs).
Development	Phase 3 Milestone B	£60,000	Implementing extended PDSS
	Phase 4 milestone C	£60,500	Developing and implementing care packages
	Phase 4 (50% Milestone D)	£32,000	Start of developing finance system
Implementation	4 FTE to provide user input and assist developers	£156,000	Additional implementation cost allowed for training, back-filling of posts and to have "local experts" to assist with implementation and provide support for Performance Management
Support	20% of Metastorm license cost (£15,000). 20% of consultant costs to date (£148K) allowed for ongoing maintenance (£29,600)	£44,600	Maintenance cost based on consultant costs to date
2004/5 total		£393,100	

Year: 2005/6**Government Targets:**

Dec 2005 – ESCR for adults and children

Completion of development by Jan 2006 will allow this target to be met for adults.

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software	None	-	No further license costs incurred, however many users (only Metastorm maintenance).
Development	Phase 4 (50% Milestone D)	£32,000	Completion and implementation of finance module
	Phase 4 milestone E	£26,000	Additional specialist needs (eg MOW, LD register, joint equipment/incontinence)
Implementation	3 FTE to provide user input and assist developers	£117,000	Additional implementation cost allowed for training, back-filling of posts and to have "local experts" to assist with implementation and provide support for Performance Management
Support	20% of e-work license cost (£15,000). 20% of total in-house devt costs (£175,500) allowed for ongoing maintenance (£35,100)	£50,100	Maintenance cost based on in-house development costs to date
2005/6 total		£225,100	

Year: 2006/7**Government Targets:**

None at present

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software	None		
Development	2 analyst-programmers	£78,000	No major planned development, but costs for 2 e-works analyst-programmers allowed. E-works will support addition of continuous small changes/new features, as required
Implementation	2 FTE to provide local system expertise and support Performance Management	£78,000	"Local experts" have continuing role in promoting teams' use of the system and providing support for Performance Management
Support	20% of e-work license cost (£15,000). 20% of total in-house devt costs allowed for ongoing maintenance (£35,100)	50,100	Maintenance cost based on in-house development costs to date
2006/7 total		£206,100	

Year: 2007/8**Government Targets:**

None at present, but pressure to achieve e-government will be strong. SSD should be in a good position to "fit" the LA's plans for e-government

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software	None	-	
Development	2 analyst-programmers	£78,000	No major planned development, but costs for 2 e-works analyst-programmers allowed. E-works will support addition of continuous small changes/new features, as required
Implementation	2 FTE to provide local system expertise and support Performance Management	£78,000	"Local experts" have continuing role in promoting teams' use of the system and providing support for Performance Management
Support	20% of e-work license cost (£15,000). 20% of total in-house devt costs allowed for ongoing maintenance (£35,100)	£50,100	Maintenance cost based on in-house development costs to date
2007/8 total		£206,100	

5-year total e-works solution: £1,263,400

3.2 Package option

Assumptions in table 3 are:

- Items of work are based on an implementation carried out over 2.5 years
- These include provision of system for Adults only (C&F assumed handled under different plan)
- Costs are based on split of work between package supplier (shown as implementation services) and in-house staff (allowance for project team of 5)
- Does not envisage block secondments of operational staff to project, but does allow for back-filling of posts during training and for involvement of “experts” from each of the 4 adult teams (4 FTE in 04/05, 3 in 05/06, 2 thereafter). The “expert” role will involve help with training and implementation, but the role has an ongoing element of supporting the operational teams in Performance Management (eg extracting data for monitoring trends in demand, reviewing time-to-assess targets)
- No costs have been included for items which will be required whichever option is adopted:
 - project management
 - current software licenses (eg Oracle, Discoverer)
 - current SSD IT section (training, help-desk)
 - managing the network (performance, new users etc)
 - upgrades/maintenance of network, server etc
 - infrastructure (PCs, printers, PDAs etc)
 - DBA tasks for ongoing maintenance of Oracle database
- No allowance has been made for **reduced** costs for maintenance of current systems and ongoing work under this solution

Table 3: package option**Year: 2003/4****Government Targets:**

April 03 – plans for integrated continence service.

Oct 03 – start of shadow reimbursement

April 04 – SAP, joint equipment service, integrated continence service. Start of live reimbursement

Note: support for joint equipment/incontinence service not scheduled for development until Milestone E (Feb 05). However, target for SAP (and support for delayed discharge) will be met if work starts Dec 03.

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software	Licenses for PDSS	£35,000	
Development	PDSS pilot	£30,000	Under this scenario, expenditure on PDSS pilot is written off. PDSS will experience difficulties when the pilot is withdrawn, as it has enabled them to sustain higher volumes of work, so the pilot will be maintained until the package is available. No additional cost has been included for supporting PDSS in this way
	Procurement exercise for package	£50,000	Procurement via OJEC likely to take 6-9 months. Package will not be available until June 04
Implementation	-	-	
Support	-	-	
2003/4 Total		£115,000	

Year: 2004/5**Government Targets:**

Children IRT system required by 2004.

Drive for intermediate care (prevent admission; facilitate discharge). Improved utilisation of drug treatment (55% improvement). Targets for education/employment of children/CLA

Note: the C&F system is being progressed separately and is not covered in this document

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software	Assumed to be Oracle product	-	
Package cost (Adults only)		£300,000	

Implementation	Services from package supplier for cut-over, mapping, training, modifications	£150,000	Implementation likely to be phased: <ul style="list-style-type: none"> • Adults (6 months) • Finance (6 months) • Other modules (6 months) • Joint working (using middleware) – 6 months
Support	5 project staff from Apr 2004 (initially to help with procurement)	£195,000	In addition to purchasing implementation services, the SSD will need a team of 5 to carry out: <ul style="list-style-type: none"> • Project mgmt • Mapping of processes to package, any adjustments • Testing of package • Assisting with data cutover (eg data cleaning), training The 4 FTE additional staff are “local experts” to assist with implementation and provide support for Performance Management
	4 FTE to provide user input and assist project team (from June 04 - 9 months)	£117,000	
	20% software cost	£60,000	
2004/5 total		£822,000	

Year: 2005/6**Government Targets:**

Dec 2005 – ESCR for adults and children

Completion of development by Jan 2006 will allow this target to be met for adults.

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software	None	-	
Package cost	May have to pay for upgrades	£80,000	If choosing the package route, must allow for charges for new modules (eg for legislative requirements). For instance, OLM is charging £85,000 for middleware to support SAP (but may charge extra for each joint working requirement, eg IRT). With e-works, this is assumed covered by use of integration tools in the product and maintaining 2 dedicated analyst-programmers.
Implementation	Ongoing services from package supplier for cut-over, mapping, training, modifications	£150,000	The 4 FTE additional staff are “local experts” to assist with implementation and provide support for Performance Management
	3 FTE to provide user input and assist project team	£117,000	
Support	5 project staff	£195,000	
	20% software cost	£60,000	
2005/6 total		£602,000	

Year: 2006/7

Government Targets:

None at present

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
System Software		None-	
Package cost	May have to pay for upgrades	£80,000	
Implementation	Services from package supplier for any changes (eg help with data for performance mgmt)	£40,000	
	2 FTE to provide ongoing support for Performance Management	£78,000	
Support	5 project staff (for 3 months)	£48,750	20% support cost to package supplier has been calculated on purchase price (excluding new modules or upgrades for required changes). Additional work is required after initial implementation is complete: <ul style="list-style-type: none"> ○ for dealing with package releases (average 2/year) ○ agree what to implement and carry out; agree workarounds if not implementing ○ for deciding on purchase of new modules (and implementation) ○ for ongoing training
	20% software cost	£60,000	
2006/7 total		£306,750	This is assumed covered by SSD IT section

Year: 2007/8**Government Targets:**

None at present, but pressure to achieve e-government will be strong. SSD should be in a good position to "fit" the LA's plans for e-government

Investment Category	Item	Costs	Comment
Infrastructure	None	-	
Software		None-	
Development	May have to pay for upgrades	£80,000	
Implementation	Services from package supplier for any changes (eg help with data for performance mgmt)	£40,000	
	2 FTE to provide ongoing support for Performance Management	£78,000	
Support	20% software cost	£60,000	<p>20% support cost to package supplier has been calculated on purchase price (excluding new modules or upgrades for required changes).</p> <p>Additional work is required after initial implementation is complete:</p> <ul style="list-style-type: none"> ○ for dealing with package releases (average 2/year) ○ agree what to implement and carry out; agree workarounds if not implementing ○ for deciding on purchase of new modules (and implementation) ○ for ongoing training <p>This is assumed covered by IT section</p>
2007/8 total		£258,000	

5 year total: £2,103,750

3.3 Discussion of 5 year plans

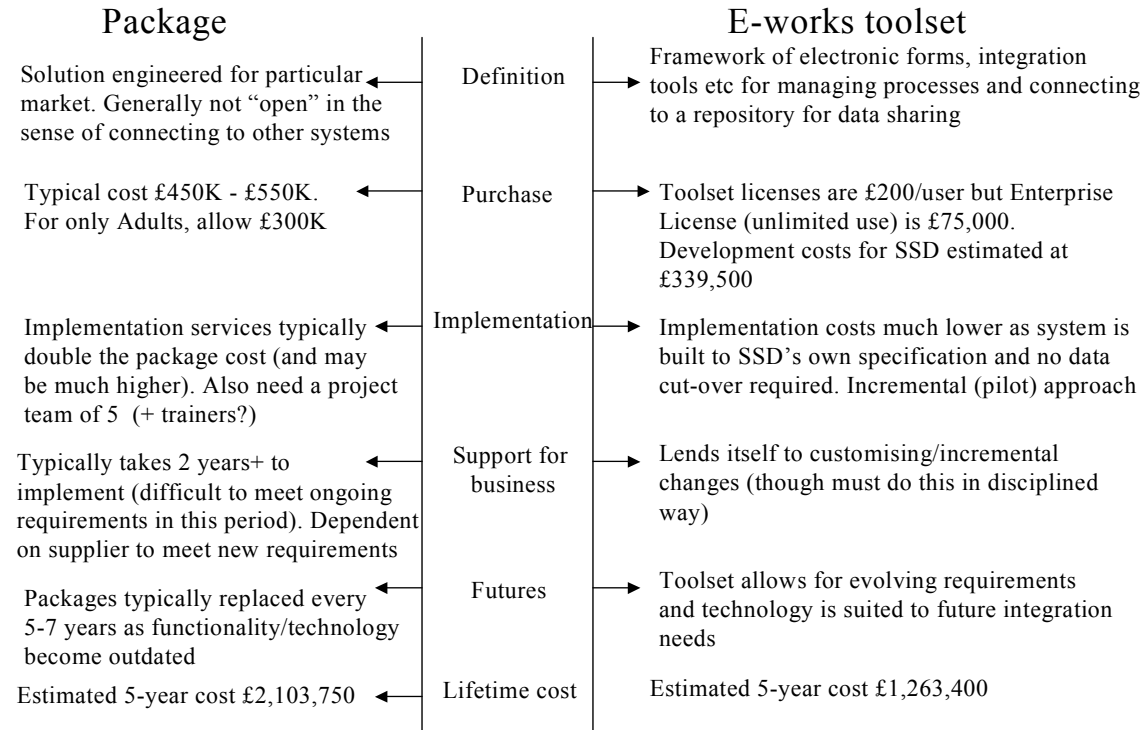
The price of the software is similar, whether it is a package (£300,000) or developed with the e-works toolset (price based on in-house development, supported by consultancy skills-transfer, is estimated at £339,500).

However, the lifetime cost of the package solution is more expensive due to:

- Services needed to implement the package. These have been costed at £300,00 (over 2 years), but it should be noted that at least one London SSD has had to buy in additional integration/implementation support at a cost of over £1m.
- Cost of an in-house team to support implementation, including data cut-over, mapping and adjusting of business processes to fit package, training etc. For the e-works option, there is no data cutover, no mapping and adjusting of business processes. The style of development will involve users (including pilots of each new piece of development), and costs for implementation tasks have therefore been included in the development costs
- Reliance on the package supplier for upgrades/additional modules to support legislative and other emerging requirements. The example quoted is OLM (cost of SAP middleware is £85,000). The cost of ongoing acquisition for the package solution is estimated at £80,000 for each of the final 2 years (which may be understated) with £40,000 implementation services, whereas for the e-works option, provision has been made for 2 analyst-programmers to do ongoing development during the final 2 years (cost £78,000)
- Support costs: these have been calculated at 20% initial software price, but may be understated due to expected need for further modules/upgrades promoted by the supplier over the 5 years. Maintenance of the e-works solution has also been costed at 20% (of the development cost), but this (unlike the package option) is not all incurred at the outset

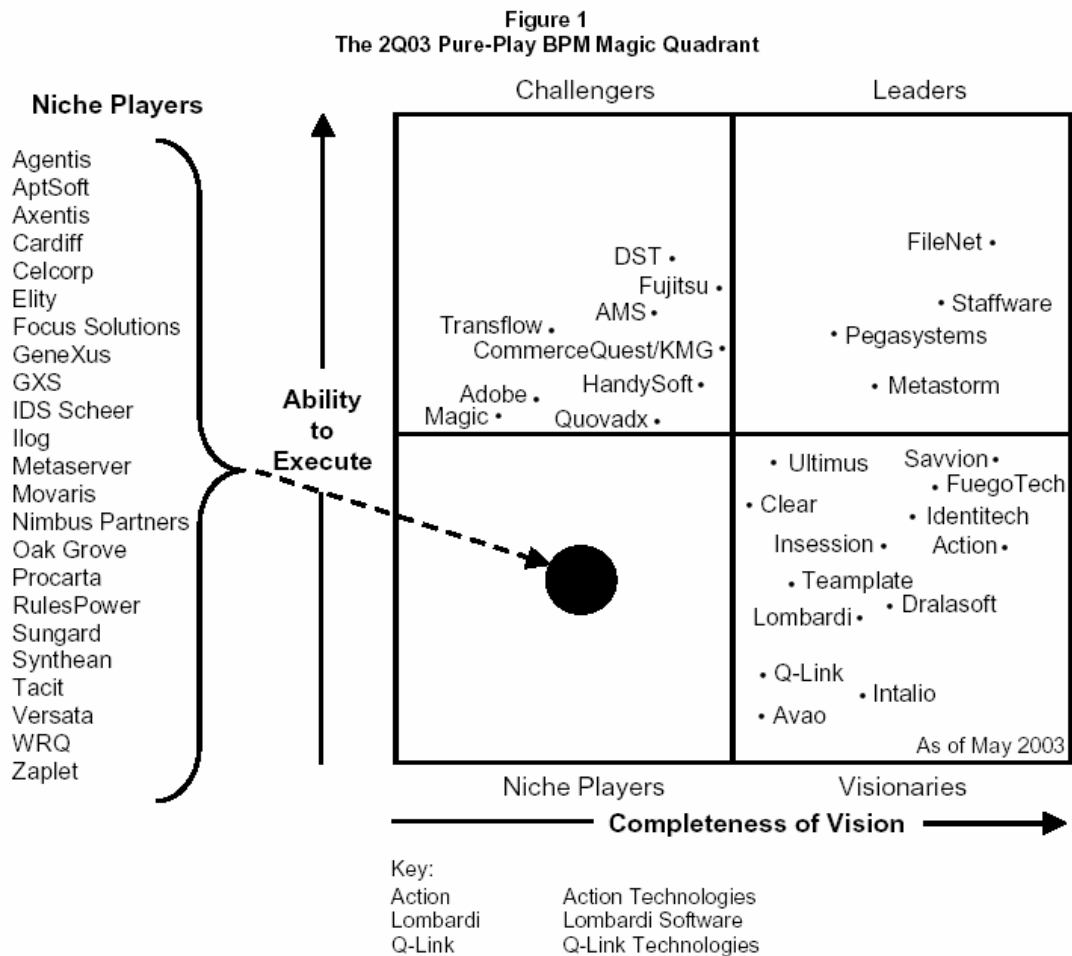
Figure 1 describes the difference between packages and the e-work approach. Note that the e-work approach uses a toolset which provides intrinsic functionality, allows end-user control of simple maintenance (eg new users, change in sequence of steps, change to forms design) and reduces development time. This is NOT the same as a traditional 'bespoke development'.

Fig 1: Packages versus e-works



Appendix C – Survey of BPM products

A recent Gartner report ranked BPM products by vision/richness of features and ability to execute their vision (see figure).



Source: Gartner Research (May 2003)

Those in the top quadrant are as follows:

E-works (Metastorm) – set up in early 1990s as a BPM company (not from document/imaging origins). Customers include Carlisle Council, Dumfries and Galloway, Hants County Council, Mid-Devon, Newport, Sefton, Stirling, Tynedale, Tayside, Waltham Forest, Bath & North East Somerset Council and Orkney Islands

Filenet – set up in 1982 and describes its business as Enterprise Content Management (ECM). Products include support for business processes, managing web content, storing images, providing electronic forms and offering APIs to SAP and Siebel. Origin of company is in document management; strength is in web content management. Expensive. BPM capability less flexible than e-works?

Pegasystems – talks of 20 years of experience of rules-based process management. Appears to be used mainly in finance (eg health examples were for US health insurance companies and major point was document imaging – process management was secondary). Expensive

Staffware – set up in 1984 and has e-government collateral (mentions of ONS, Scottish Sports Council, DVLNI, Immigration, MOD and 2 councils – Enfield and Birmingham). Expensive

The Gartner report endorses all 4 products. However, Metastorm appears to have advantages for the purposes of Harrow SSD:

- Relatively new company (others may be re-badging old software)
- Increasing use in UK public sector (now the most-used BPM software in this sector)
- Not solely selling at CRM/enterprise level - much lower entry price and £75K license covers unlimited users

References for e-works were obtained from:

1. Bracknell – Rachel Saunders (project manager)

- We believe that eWork is going to form an integral part of eGovernment strategy (in some areas it already does). Business Process Management is something that the organisation requires in order for it to improve. It can help us allow people to self-serve through the web but can also ensure that action is taken.
- We do believe it is cost-effective. We have purchased a site licence which allows us to roll it out across the organisation.
- We would consider using it to support a whole business area and in fact use it as such for our Members section. However it can only be used in areas where there is a defined process
- We have staff who can develop in eWork and also we have staff using eWork. The use is easy, but training from Metastorm is required for development.

2. Stirling – Alan MacDonald (Network Services Manager)

- Initially looked at CRMs but a) too expensive and b) don't do end-to-end process (hand-off at request stage – only 15% of what wanted)
- Developed master person/property databases (from council tax, rates, electoral register)
- Ework drives front and back end (supports contact centre, puts task on service "to do" list, tracks result, escalates if going late, integrates with finance and cash receipts systems). It doesn't just put forms on web and email them – it triggers the process (eg send info on future road work to customer if they express interest/meet criteria)
- Latest e-work works with SOAP to optimise web services
- Beware package suppliers who claim they do workflow
- Always bought packages in past but now disillusioned with suppliers and found had to have multiple packages to cover all required functionality

3. Cornwall Health – Richard Johnson (development Manager, Royal Cornwall Hospital)

- Wanted a way to demonstrate the usefulness of workflow to GPs and consultants, so picked "referrals to consultant-led clinics"

- The pilot is seen as a first step in wider use of e-works to support care pathways. Next step is to make pilot available to all surgeries and extend it to include all GP referrals (eg physio, community health, SSD)
- Development took about 3 person months – the technical bit was easy; the change management was much more difficult! Would advise any site to develop expertise in **managing** a workflow development (even if not doing it themselves), but any programmer who understands access, database and web services can pick it up
- E-works is a very good and flexible tool for supporting processes, messaging, tracking etc.. The choice of repository is about openness – e-works can cope with any system that is open. Cornwall use a Sybase system as the repository in their “integration architecture” to support care pathways

All were willing to confirm that the product was:

- **Easy to learn/use**
- **Popular with end users**
- **Cost-effective**
- **A significant contribution to e-government and/or joint working**

Other suppliers in the SSD marketplace are offering middleware to accompany their products (see inserts). However, e-works **supports processes as well as integrating applications**, in one product.

TELE-SCOPE (Vision Ware) is a powerful CRM enabling software product used by companies in a variety of industries to improve business processes and workflow management in their Customer Interaction Centers.

Current CRM solutions are composed of fragmented pieces that are forced together to form an expensive, complicated solution. This incomplete approach results in huge consulting and implementation fees because it is extremely difficult to make all of these different pieces fit together and run smoothly for numerous companies with such diverse needs. **TELE-SCOPE** is a complete, yet simple CRM solution because it is a single product.

Protocol

Background

Liquidlogic was established in June 2000, with the specific objective of creating software to develop applications that operate across linked functions and organisations. Protocol, has been developed by Liquidlogic as a rapid application development environment for building workflow applications that underpin shared service delivery and multi client environments. It provides the platform for a flexible business model where underlying third party database applications can be mapped appropriately onto business services, and shared processes with third parties can be easily accommodated.

Appendix D: Steps in Enacting the IT Strategy

Step	Involves	Risks	Approach	Decision
1. Review start point for IT Strategy	Critique of current systems and option appraisal	Bias towards in-house system; risk of expecting a new system will “solve problems”; cost of a procurement exercise	Interviews and analysis of issues in use of IT.	Report March 2000. Agreed CARES to be replaced; recommended layered architecture
2. Review phase 1 of IT Strategy	Exploring BPR and technology options	SSD could wait for decisions by LA and PCT but problems with CARES are building up (eg RAP)	Discussion of business plans and need to show progress on new systems.	Mgmt review Nov 2000. Phase 2 of IT Strategy to carry out PDSS pilot
3. Preparation for phase 2 of IT Strategy	Review of platform and toolset (integration, and flexibility issues)	Need to validate others’ experience of layered architecture; ensure Harrow has capabilities to support chosen route	Testing of various workflow products (including Lotus Notes); consultation with OLAs; visits to suppliers; meeting with ISB.	June 2001 meeting agreed changes for PDSS to be done with workflow. Recommended use of Metastorm e-works
4. Agree phase 2 pilot	PDSS development of new models of working; commissioning of PDSS pilot software	Must be sufficient to test workflow approach; must provide a module with potential to implement in PDSS and roll-out (with minimum adjustment) to other adult groups (particularly OP)	Specification and discussion with Interworking	Interworking contract agreed Dec 2001
5. Validate concepts of layered architecture	PDSS pilot ready June 2003; supplier “proof of concept” provided	Systems architecture may not be proven; may not be compatible with direction partners are taking.	Ongoing discussion with LA and PCT. Technical QA by Metastorm	Awaiting evaluation of PDSS pilot Sep 2003 (preliminary results satisfactory)
6. Submit proposals to Members	Ratify approach: review market trends in IT;	LSP process may preclude JADE and/or e-works; layered	Carry out option appraisal; consult with	Members decision awaited Sep 2003

Step	Involves	Risks	Approach	Decision
	government guidelines; LSP developments; arguments on risk and cost effectiveness	architecture may not be best option; integration with JADE may have issues	JADE and Metastorm; commission technical evaluation of architecture	
<u>ASSUMING PROPOSAL TO MEMBERS IS ACCEPTED</u>				
7. Plan phase 3	Refinement of pilot; addition of fieldwork requirements; extension to support joint working for OP (SSD and PCT)	Urgency to provide support for SAP and delayed discharge; key decisions needed on data repository; LSP decisions to be announced	Scoping, specification; decision on in-house development versus contract; agree costs and partnership principles with PCT	Resourcing for phase 3 (required Dec 2003)
8. Deliver phase 3	Development of additions/ extensions to PDSS pilot	Significant effort required for project management and ensuring user participation from SSD and PCT	Develop with installation company OR in-house	Acceptance of (nearly complete) care management system
9. Plan phase 4	Support for other Adult groups (including OT and equipment); finance	Integration (eg creation of links with housing, SP, health, police etc); ensure continued compatibility with LA/PCT plans	Scoping, specification; decision on in-house development versus contract	Resourcing for completion of system
10. Deliver phase 4	Completion of care management system	Significant effort required for project management and user participation	Develop with installation company OR in-house	Acceptance of care management system
11. Plan phase 5	Support for C&F	Links between children and adults may be lost unless workflow toolset used consistently (current plans in C&F are for a separate system)	Scoping, specification; decision on in-house development versus contract; agree costs and partnership principles with IRT partners	Resourcing for C&F system
12. Deliver phase 5	Further development to support C&F (additions not expected to be extensive)	Significant effort required for project management and user participation	Develop with installation company OR in-house	Acceptance of C&F system
13. Integrate SSD	Mapping citizen-centred processes	Decisions on how to partition functions and	BPR and systems	Decision will be made by

Step	Involves	Risks	Approach	Decision
solution with LA e-government solution	across LA/SSD	integrate processes may not be easy (but SSD's use of e-works should help)	integration	Harrow's e-government project

NOTE:

- **Decision on e-works made after evaluating other workflow tools (Lotus Notes exercise; contact with several local authorities on use of tools)**
- **Contract with Interworking placed after decision on use of e-works (they are a Metastorm preferred installer for health/social care)**
- **Further installation work with e-works to be:**
 - **Managed in-house through recruitment of 2-3 dedicated staff OR**
 - **Subject to tender OR**
 - **Managed with in-house staff, using consultants initially for skills transfer (this is the option costed in appendix B)**
- **Content of phases to be decided as part of phase 3 planning. Phasing depends on logical development sequence versus priorities. May be overlapped (depending on resources)**