Procurement of electronic content across the UK National Health Service and Higher Education sectors

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Report to

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Executive summary

The **aim of the study** was to analyse stakeholders' perceptions of the benefits and risks of joint NHS/HE procurement activities in the area of e-content and on this basis identify potential strategies and quick wins.

The **objectives** were to:

1. Assess the organizational and technical structures for joint activities
2. Identify common interests in terms of content, functionality and licensing terms
3. Identify areas of duplication of licensing of e-content
4. Map stakeholders' needs, priorities, current activity and timetables

The **key messages** are:
NHS and HE both spend large and growing sums of money on e-content. Although aligning activity across complex and changing sets of institutions such as these is difficult, there are some examples of successful collaborative initiatives (such as the London Medical Schools group, and the NHS Scotland e-Library). There are common interests in functionality/interfaces, promoting open access, and working on better metrics for estimating usage that might contribute to discussions with publishers over the licence terms. There are differences in the type of resource each might deem core. There is a concern among NHS librarians about loss or lack of access to core content for them, resulting in unwillingness to abandon print resources.

In this context, three possible paths for cooperative activity were identified:

- sharing information and joint advocacy
- building the technical infrastructure
- joint procurement.

The first, low risk strategy could focus on sharing market intelligence and information about suppliers, on campaigning for improved licence conditions and usage statistics and /or advocacy of open archiving. Another area of collaborative activity could be around the technical infrastructure given that this is more directly under the parties' control and there has been success in the past, such as convergence around Athens. An inherently more risky but potentially fruitful direction would be towards cooperative procurement activities,. Procurement activities could take place at national, regional or local level and would be likely to focus on certain specific types of content e.g. around e-books.
Considering these options produced a set of 12 possible paths of action, for each of which a use case is developed clarifying the goal, the parties to be involved, choices to be made, risks to be managed, criteria of success for the process.

Recommendations
Recommended actions provide specific examples of activity to support these paths 1) immediate 'task and finish' activities aimed at informing current procurement; 2) developing infrastructures to inform open access initiatives across the NHS and HE; and 3) strategic support initiatives to ensure that e-resources are exploited cost-effectively

Immediate activities include:

- Sharing information and joint advocacy on resources to support health services research, clinical medical research (particularly in clinical genetics, health engineering, cancer, tissue engineering), public health and some of the smaller health specialist disciplines.

Some mapping of resources required by the NLH Specialist Libraries to resources that are, or could be offered through Core Content has been done, and this work could be extended to other areas.

NHS Scotland may be able to co-operate in the evaluation of the use of specialist e-resources, such as some of the psychology and human behaviour resources, the ESDS longitudinal data sets.

In particular, the recommendations for particular databases are:

- British Education Index (and/or ERIC) (coverage meets needs of clinical academics, practice supervisors/mentors and some professional groups such as speech therapists)

- Pharmacy databases (in collaboration with National electronic Library for Medicines)

- ESDS value added products (for public health and health service planners)

Other possibilities are likely to be of more interest throughout the NHS to smaller staff groups, and to some universities:

- RECAL (prosthetics etc)

- Barbour Index (estates, architecture)

- Planex (local government, social work)

Infrastructure initiatives to improve decision making in the medium and long-term on open access include:

- Sharing information on open access initiatives, particularly institutional repositories, could help to support 'getting evidence into practice' in the NHS. The experience of HE library and information services in setting up and maintaining institutional repositories could benefit NHS information service structures at a local level. Managers cite problems in finding in-house NHS reports on changes made to health service delivery structures – the 'how', rather than the 'what' of service delivery. The NLH Specialist Library structure works at a national level, but there are lessons in process improvement that may be better shared locally.

Strategic support initiatives that should inform cost-effective exploitation of e-resources include:

- Collaborative activities on costing, and analysis of usage statistics to ensure that the subscription and non-subscription costs of print and electronic resources can be identified clearly for both sectors, on a life cycle basis.

Such work is complicated by the different and changing nature of library and information services in both higher education and the NHS. However, there are sufficient shared interests in supporting e-learning and information literacy, and there are some similarities in the work of liaison librarians/subject specialists and clinical librarians. In both sectors the skill sets are changing, and such changes will affect the costing of library service support for e-resources, and how the impact will be assessed. Analysis of usage statistics needs to move to a more sophisticated level, to examine profiles of usage, usage by particular specialist or multidisciplinary groups and the impact of particular collections of titles.

It is hoped that the National Service Framework for health libraries will support such initiatives.

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List of abbreviations

BMC BioMed Central

FE Further Education

HE Higher Education

JISC Joint Information Systems Committee (of the Funding Councils)

LISU Library and Information Statistics Unit (based at Loughborough University)

LKDN Libraries and Knowledge Development Network

PfL Procurement for Libraries

RSC Regional Support Centre (JISC, for FE college support)

NLH National Library for Health

PCT Primary Care Trust

SHA Strategic Health Authority

SUPC Southern Universities Purchasing Consortium

1 Introduction

1.1 Aims and scope

The aim of the project was to inform potential joint activity by the NHS-HE Procurement Group in the area of licensing health related electronic resources. Identification of existing duplication of licensing and identification of common interests should help to harmonise existing processes and make procurement more efficient and effective across the NHS and the tertiary education sector. Various options were to be identified, with associated risk assessment.

At present JISC (Joint Information Systems Committee) is a joint body of the Further and Higher Education Funding Councils for the UK, that is aimed at exploiting the opportunities in use of ICT in further and higher education institutions. The JISC Collection Teams' mission is 'to negotiate for, and where appropriate, to license, quality assure electronic materials that will provide the JISC community with a range of resources to support education and research'[1]. The NHS Library and Knowledge Development (LKDN) leads the strategic development of healthcare library and knowledge service in England.[2]. The Core Content Group is part of LKDN, although the Group works closely with National Library for Health.

At present the NHS-HE Content Procurement Group is a sub-group of the NHS-HE Forum[3]. It is made up of representatives of JISC, HE and the NHS in the UK.

1.2 Objectives

The objectives were to:

1. Assess the organizational and technical structures for joint activities
2. Identify common interests in terms of content, functionality and licensing terms
3. Identify areas of duplication of licensing of e-content
4. Map stakeholders' needs, priorities, current activity and timetables

The final report was intended to map stakeholders, analysing their requirements, current practices and future expectations. The plan was to summarise existing licensing deals, with indications of supplier, coverage, terms, user support/training provided, and user groups. The report was to identify quick wins for practical collaboration, and thus a timetable of action at local, regional and national levels to achieve these benefits, together with the stakeholders who need to act together to realise those benefits.

2 Background

2.1 Current status of e-content procurement

The collective spend on e-content across HE, FE and the NHS is very large, and requires close scrutiny to ensure that the public are getting value for money from the licences negotiated with publishers and aggregators. A study[4] (2003-2004 figures) indicates that £44.27 million is spent on NHS libraries (staff and resources) and £2.1 million on Core Content. The HE spend on e-resources 2004-5, according to the Sconul statistics[5], was

[1] JISC. JISC collections strategy. http://www.jisc.ac.uk/index.cfm?name=coll_strat
[2] NHS Library and Knowledge Network: Role, Purpose and accountability, January 2005. http://www.lkdn.nhs.uk
[3] NHS-HE Forum http://www.nhs-he.org.uk/forum.html
[4] Robert Huggins Associates with LISU. Financing NHS libraries and information resources. Final report to NHSIA. Pontypridd: Robert Huggins Associates, 2005. Retrieved August 3, 2006 from http://nlhcms.library.nhs.uk/nlhdocs/FinancingNHSLibrariesFINALREPORT20thMay2005.
[5] Annual library statistics. http://www.sconul.ac.uk

composed e-resource (non serial) content such as databases (£20.2 million), e-books (1 million), archives and manuscripts (0.4 million). Serial spending is complicated by the bundling of print and electronic content but amounted to £14.5million on electronic only and £15.5 million on print and electronic (bundled), with print only spend of £22.7million on periodicals. Only around 40% of the periodicals expenditure in old and new universities is spent on print only serials subscriptions and even in the HE colleges where the shift to electronic provision is less marked, the colleges with larger budgets have patterns similar to the universities. Despite a growing proportion of the HE resources expenditure being devoted to serials (54% of information provision in 2004-2005), this is not keeping pace with the price rises of serials (composite periodicals price index). There are opportunities by the force of collective negotiating power to make significant savings through de-duplication and to improve services through better licence terms. This is not to underestimate the differences of purpose, culture and practice between NHS and UK HE/FE which create a barrier to straightforward co-operation, and have done for many years[6]. The sheer size and complexity of the NHS, especially across the home nations is matched by the diversity of HE and FE, and their different perspectives on value. What suits a world class biomedical research centre, requiring access to research resources, may be irrelevant to the needs of an FE college offering a range of access courses, where the emphasis is more on getting the learning resources fit for purpose. But across the sectors there is a wide range of initiatives in e-procurement; the need is to leverage best practice more widely, building on a track record of successful past collaborations. At the most fundamental level everyone (publishers, authors, practitioners, students, lecturers, knowledgeable patients…librarians) wants increased usage of content. Users' IT access and IT skill, and the IT infrastructure are all improving. So the conditions for successful cooperation between all parties seem to be present.

2.2 Policy drivers

There are several policy drivers that affect the procurement of e-content and related services.

First, the Gershon review[7] has set target efficiency savings for the Department of Health, to be met through improved use of staff time using IT, collective purchasing power and shared service centres. Efficiency pressures are shared by higher education, which education has accommodated increased student numbers efficiently, or without matching funding increases, depending on one's perspective. The Chief Executive of the Higher Education Funding Council for England cites the settlement for 2006-2007 as one that should make inroads on the cumulative underfunding: "Although universities and colleges still face significant pressures, the grants we have accounted and the additional income from variable fees provide them with a solid platform." [8] Universities, particularly European universities have faced more constraints on state funding than some of their competitor institutions in North America, and universities everywhere are facing the 'massification' of higher education, globalisation and competition, with significant demands on them to support the growing knowledge economy.[9] But efficiency and changed ways of working are inevitable.

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[6] Thornhill, John. Users first: removing barriers to knowledge access across HE and the NHS. Final report to NHS/HE Forum, 2003. http://www.ucl.ac.uk/Library/nhsforum.htm

[7] Sir Peter Gershon. Releasing Resources to the Front Line: Independent Review of Public Sector Efficiency. London: HM Treasury, 2004, http://www.hm-treasury.gov.uk/spending_review/spend_sr04/associated_documents/spending_sr04_efficiency.cfm

[8] McLeod D, Taylor M. Funding deal 'not enough to pay for extra student places. Education Guardian 2 March 2006. Retrieved 10 August 2006 from http://http://education.guardian.co.uk/universityfunding/story/0,,1721537,00.html

[9] Wooldridge A. The brains business: a survey of higher education. The Economist, 8 September 2005, 3-4.

Second, government policies aim to transform relations with citizens, with greater participation, more use of e-services, to provide better quality services at a lower cost. Although the guidelines[10] are aimed at frontline public services, rather than the professionals providing those services, the health service reforms and future investment programme are predicated on patient empowerment, so that citizens make wise decisions about their lifestyle to avoid increasing the burden on health service costs. The service delivery guide in fact provides frameworks that could be adapted to the shift from purely print resource provision to e-content delivered over networks. The guide suggests five steps: 1) know your customers (segment for motivation and usage); 2) know your services (define services, business processes and transaction type); 3) know key delivery mechanisms; 4) analyse channels (for usage by customers, suitability for transaction type and cost of implementation; 5) map to decide channels. These five steps are equally applicable to consideration of 'getting resources to customers', whether through print, e-content, or inter-library loan channels. The principles are the same although the channels are not the same as the usual telephone, fax, email, face to face considered in the guide itself.

Third, the Government approved in principle the recommendations of the House of Commons Science and Technology Committee that 'the Joint Information Systems Committee and the NHS work together to implement joint procurement procedures that reflect the close working patterns of the NHS and the higher education sector and represent value for money'. The responses to the report[11] (para 9) note that JISC should explore the establishment of a Content Procurement company to provide more effective national co-ordination of purchasing, on behalf of all higher and further education institutions through the JISC as well as on behalf of other organisations such as the Research Libraries Network, NHS, or the MLA.

As the Library Funding review[12] notes (para 4.30) electronic licences are bought separately for the same material by the NHS and HE, but some of the reasons may be structural. NHS library structures and funding levels are different – para 3.72 cites LISU figures that note that expenditure per user in academic libraries is £281 per FTE student, whereas NHS libraries spend £71.94 (per registered user). There is considerable variation in expenditure in both sectors, as well as some debate about the meaning of registered user. The review notes that in 2003-2004 the annual expenditure on electronic journals and databases accounted for 0.7% of total recurrent expenditure, much lower than in 1999-2000, a drop attributed the introduction of KA24 (London e-content network) and the National Core Content. The proportion of non-recurrent expenditure (2003-2004) was electronic databases (0.4%) and electronic journals (2.6%). Staff costs account for 57% of recurrent expenditure and 34% of non-recurrent expenditure. The average conceals considerable variation across England. There are many Service Level Agreements in place, often to cover services to higher education students on placement or services to other NHS Trusts or the public, but even these agreements vary considerably in the scope and level of provision[13]. The SCONUL report recommends that more research is required to substantiate decision making on a cost per user basis. The Core Content agreements ostensibly save NHS library staff time and costs in lengthy procurements but at the same time, the content needs to be promoted to new users, by

[10] Cabinet Office, e-Government Unit. Service design and delivery guide. London: The Cabinet Office, 2004. Retrieved August 3, 2006 from http://www.ogc.gov.uk

[11] House of Commons Science and Technology Committee. Responses to the Committee's tenth report, Session 2003-04, Scientific publications: free for all?'.Report. together with formal minutes. HC 1200. London: Stationery Office, 2004.

[12] Robert Huggins Associates with LISU. Financing NHS libraries and information resources. Final report to NHSIA. Pontypridd: Robert Huggins Associates, 2005. Retrieved August 3, 2006 from http://nlhcms.library.nhs.uk/nlhdocs/FinancingNHSLibrariesFINALREPORT20thMay2005

[13] Sconul Advisory Committee on Health Services. Funding of HE library services to support the NHS. Report of a survey 2003. London: SCONUL, 2003.

library staff, and usage of new e-resources is often low to start with, particularly if the resource requires some training to use effectively. The need for extensive promotion may reduce slightly with the introduction of Dialog e-links (link resolvers), that allow seamless linking from reference to full text. In summary, the staff costs for supporting electronic resources are not easy to attribute accurately, particularly in situations where there are HE students on placement in the NHS, and some shared responsibilities for their support.

2.3 NHS restructuring

During the period this research was conducted, the NHS in England was undergoing restructuring resulting from the consultation on *Commissioning – a patient led NHS*[14]. In May 2006 the acting Chief Executive of the NHS introduced documents on the future roles of Strategic Health Authorities (SHAs) and Primary Care Trusts (PCTs). In April 2006, the Secretary of State for Health announced that the number of SHAs would be reduced from 28 to 10[15], and the Chief Executives of the new SHAs (including three acting chief executives) took up their posts on 1 July 2006[16]. Chief executives of the new style PCTs were being recruited in July and August 2006. Although organisational and workforce development is one of the functions of an SHA, it may be some time before appointments are made for those in charge of workforce development, and it is clear where the various postgraduate deaneries will be located. Joint working between health and local government agencies is one of the aims of the new architecture that is intended to eliminate unnecessary bureaucracy. Changes in the structure and functions of the SHAs have implications for the future funding and governance associated with Core Content procurement.

3 Methods

3.1 Approach

The primary method of obtaining information was through telephone interviews with the range of stakeholders (national contacts, stakeholder groups by type of library and community served).

A workshop held about mid-way through the research helped to identify the priorities for progress in joint procurement, as well as checking that the range of issues already identified was correct.

A series of web-based surveys, organised by the Higher Education Academy Subject Centre for the Information and Computer Sciences, targeted user views from clinical academic sectors, health librarians and health informatics professionals. These examined existing licence terms as well as experience and views on collaborative procurement. Further clarification was sought from selected respondents in interviews.

3.2 Sampling

The list of stakeholders (and proposed number of interviews with each stakeholder group) included:

- National institutions such as JISC, and the NHS national contacts in the home countries, NLH, LKDN, National electronic Library for Social Care (9-10 interviews)

[14] Department of Health (2005). *Commissioning a patient-led NHS.* London: Department of Health http://www.dh.gov.uk/PolicyAndGuidance/

[15] Department of Health. Health secretary announces new architecture of the local NHS. Press release 2006/0142, 12 April 2006.

[16] Donnelly L. What makes the new SHA Chief Executives tick. Health Service Journal, 29 June 2006, 16-21.

- Representatives of Academic and health libraries (through UMSLG, and other groupings), regional purchasing consortia, FE representatives (e.g. RSCs) plus groups engaged in e-metrics (lib-stats email discussion group) (7-10 interviews)
- Collective agencies such as CHILL, Health Libraries Group, with an emphasis on obtaining the views of the voluntary sector, the BMA, M25 and the Royal Colleges (7-10 interviews)
- Commercial stakeholders in the licensing arena, e.g. subscription agents, scholarly publishers, ALPSP (5-7 interviews)

Stakeholder group	Target number of interviews	Interviews obtained	Target success	Notes
National institutions (JISC, NeLSC) National home country contacts	9-10	12	>100%	
Education sector (HE and FE)	7-10	10	100%	One HE interviewee classified under national
Collective agencies (HLG, CHILL etc.)	7-10	10	100%	Includes one joint interview with two people from one organisation
Commercial stakeholders	5-7	7	100%	
TOTALS (number interviewees)		39		

Table 1 Stakeholder groups interviewed

3.3 Web-based surveys

See Appendices 1, and 2) for questions used. No responses were obtained from the survey sent out to target clinical academic staff. Questions about usage statistics were posted to the lib-stats mailing list (Appendix 3), with one response with comments, but no answers were obtained to the questions set. Information was collated from responses from 9 responses to an online survey of health librarians, who were identified as having some experience of collaboration, plus responses obtained from a survey sent out by Richard Marriott on our behalf to LKDN members.

3.4 Workshop

The workshop on 3 July 2006 (at Aston Business School Lakeside conference centre) examined the main themes from the interim findings and discussed ways forward. There were 11 registered delegates and 7 organisers/speakers at the event.

The agenda (Appendix 4) allowed for two sets of group discussions to debate current experience and ways forward for e-content procurement. Appendix 5 summarises the workshop outcomes.

4 Findings

4.1 Structural issues for joint procurement activities

This section summarizes interviewees' representation of the existing organizational structures within which joint work between NHS and HE would take place.

4.1.1 Organisational structures within the smaller home countries

In Wales an e-library advisory group was formed in early July 2006. This includes representatives of health libraries (NHS), higher education, and the group is chaired by Jackie Barker in a health informatics education role for Informing Healthcare. E-content needs were researched, and an emphasis put on assessing the needs of groups of health staff whose requirements have traditionally not been met from the existing health libraries. Most health libraries based in hospitals came under the umbrella of postgraduate medical libraries, with strong links to Cardiff University (and the Dean). The scope of content through the NHS Wales e-Library offered is less than that provided through NHS Scotland. For some resources (e.g. resources for pharmacists) access is restricted to that staff group.

The NHS in Scotland delivers an impressive array of content through NHS Scotland e-Library (www.elib.scot.nhs.uk). This contains a very extensive collection, larger than is available any where else in the NHS:

- 5000 + fulltext electronic journals
- 5000+ electronic books
- 100 + databases of journal articles
- 1000's of evaluated health and social care Websites"

The content is also available on a very inclusive licence, which covers both students and also those teaching them.
Key priorities are seen to be further widening access to partners and the public, as well as integrating access. The preferred route to authentication is by IP.

The breadth, stability and coherence of NHS Scotland's e-provision make it the odd one out among the home countries. In the other home countries, the perception is that the NHS is more fragmented, less organized than HE, for NHS Scotland a major obstacle to collaboration is its perception of HE as fragmented. In the context of increasing collaboration, NHS Scotland is a model. The problem may be that the whole UK can never follow the Scottish model, because publishers will never risk their extensive existing subscriptions by signing very broad deals such as NHS Scotland has achieved. This only works in "small" countries. The rest of the NHS also simply lacks the organizational stability to mirror the Scottish example. It may be difficult to integrate Scotland into initiatives because it is already too far "ahead".

Scotland has had structures in place for longer, and has had discussions with HE, but the difficulty (even in Scotland where university co-operation is common) is that the institutions operate independently for procurement. There has been work with Napier University, allowing the University population access to some of the NHS resources. By proceeding with a pilot project involving Ebsco collections, for free access across the entire university, not just the NHS affiliated staff and students, usage statistics were generated which made it possible to assess the extent of additional usage, over and above what was covered by the NHS licence. At sub-national level, pilot projects seem easier to arrange with suppliers, as the risk is less:

'but when you tried to gear it up to national, it's much more complicated.'

In Northern Ireland, health and social services have been integrated for many years. Health library provision has been contracted out to Queens University Belfast – the NHS in Northern Ireland pays for library services delivered by higher education. This is a different model to that of Wales or Scotland, although in Wales Cardiff University, through the Medical School, has in effect led the hospital library services (under the auspices of postgraduate medical education).

4.1.2 Organisational issues within the NHS (England)

As indicated in Section 2.3, the effect of NHS restructuring may affect the balance of relationships between the National Library for Health, the guidance for health libraries emanating from the Strategic Health Authority level, and the influence of the postgraduate deaneries. Although organisational hierarchies may appear similar, history and politics mean that the way policies are interpreted and implemented seem to vary from one area of England to another. The LKDN is the group that has gathered together the librarians from the Strategic Health Authorities, and has its basis in the Regional Librarians' Group that existed when there were Regional Health Authorities. The Core Content group operates as a sub-committee of LKDN.

The National Library for Health originated from 1998 Information Strategy[17] and the development of the National electronic Library for Health, which would provide 'accredited clinical reference material on NHSnet'. The strategy envisaged that the National electronic Library for Health would be accessible through local intranets in all NHS organisations by March 2002. This strategy was amended to take account of the vision of a redesigned health service in the NHS Plan[18] The investment in IT made available for modernisation demanded updates to the original information strategy published in 1998. The updated strategy, *Building the Information Core*[19] envisaged an information system to support seamless care of the individual, from preventive care through self care, primary care, secondary care, hospital care and intermediate care. The quality framework set out in A First Class Service[20] required clear standards (as set out in National Service Frameworks. NICE guidance), dependable local delivery (through professional self regulation, clinical governance and lifelong learning) and monitored standards through standards set by regulatory bodies established by the government. The plans for information services set out in *Building the Information Core* focused heavily on information services to patients and the public with plans for NHS Direct Online, information points, NHS digital TV services with NeLH providing the research evidence behind news stories as well as the core evidence-based resources and specialist web sites.

In 2004, the Directors of the National electronic Library for Health were asked (by the Deputy Chief Medical Officer of the Department of Health, England) to lead a project to develop a National Library for Health. A consultation process was conducted in 2004 (by TFPL) [21] to guide the process of change for NHS libraries. During 2005 the National Library for Health became part of Connecting for Health, formerly the National Programme for Information Technology (NPfIT), as the functions of the NHS Information Authority were transferred or wound up. The proposed organisation of the National

[17] NHS Executive (Frank Burns).Information for health: an information strategy for the modern NHS 1998-2005. London: NHS Executive, 1998.
[18] Department of Health. National plan for the NHS in England. London: Department of Health, 2000
[19] Department of Health. Building the information core - implementing the NHS Plan. London: Department of Health, 2001.
[20] Department of Health. A first class service: quality in the new NHS. London: Department of Health, 1998
[21] NHS library policy review Final report. London: TFPL for National Library for Health, April 2004,
http://www.library.nhs.uk/NHS_Library_Policy_Review_final_rpert_April_04.doc.

Knowledge Service (late 2006) envisages two components – the clinical systems such Map of Medicine, and the National Library for Health.

Stephen Singleton, Chair of the Board of the National Library for Health discusses the *Best Current Evidence Strategy* (consultation document) in the November issue of Update.[22] In this the vision of the National Knowledge Service is set out as a non-traditional library service, with (possibly) Chief Knowledge Officers for all of the 10 Strategic Health Authorities in England. However, these Chief Knowledge Officers may not necessarily be librarians. From the NLH perspective: *The NHS has long parked the LIS service with education and research…very much part of the education and training debate, rather then the mainstream service delivery debate.'* The NLH sees the need to change towards a focus on mainstream service delivery, ensuring that e-content (synopses, guidelines) is delivered for the immediate decision making needs of health professionals, and integrated into the Care Records Service, the electronic patient records under Connecting for Health. The '*Library and Knowledge Development Network…are a major stakeholder group, influencing and supporting the development of the NLH…(the real challenge for them)…is to get the hardworking frontline member of library staff to get a feel for the project objectives, while they carry on delivering the service.'* In a response to this article[23] some tensions are apparent between the top down vision for improving patient care through more informed decision making, and the reality of ensuring that all NHS staff, not just the frontline clinical staff obtain the library and information services they need for their continuing professional development, and lifelong learning.

Other tensions are apparent in the methods to be used in ensuring that clinical practitioners have access to the best evidence – but only the best evidence. Section 8 of the Best Current Evidence Base – Development Plan 2006-7[24] cites the MORE service in McMaster that provides a filtered subset of the scientific literature, from 120 important medical journals, the advantages of procuring journals of secondary publication (and these exist in nursing, medicine, dentistry and mental health).

Funding for the Core Content has been obtained from top-slicing budgets at Strategic Health Authority level. Within the NHS, there is a perception that there is a lack of a feedback mechanism between the group negotiating the core content and NHS Trust libraries. If there was more involvement, current frustrations might be alleviated.

> *Certainly when they were doing the procurement the negotiation of the national core content a lot of documentation came out I think in reports, all sorts of things, and I remember meeting where they would actually go through each of the suppliers and things like that. But I'm not entirely sure how much of that information got fed down to be honest. And certainly when they renewed the licence there was very little information.'*
>
> *'When everyone feels they are involved and their thoughts are being taken into account they then take ownership of the project, and then the project itself then has more momentum which I think would quite an interesting side effect this time.'*

In fact, mechanisms in place include: a dedicated mailing list; a national Technical Reference Group; a series of annual roadshows that visit all areas of the country; a website with contact details. Perhaps for some librarians this still seems too remote, and they feel they have no t influence.

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[22] New roles for information professionals in the NHS (interview by Elspeth Hyams) . Update 2006; 5(11): 16-18.

[23] Skinner J. NLH should focus on providing central e-resources, not on how local health libraries are run (letter). Update 2006: 5(12): 19

[24] Gray, JAM. Best Current Evidence Strategy. Consultation Paper March 2006. Leeds: NHS Connecting for Health. http://www.library.nhs.uk/nlhdocs/Bestcurrentevidence.doc

NHS librarians expressed concern that the skills required for arranging deals, and the time required, were diminishing particularly now with the purchase of the core content nationally (in England).

> *'I don't have the skills in arranging deals, evaluating options and things like that…I guess because a lot of the content is now procured nationally there are fewer things that need to be procured locally. So you end up spending your time doing different things.'*

However, to arrange and co-ordinate deals:

> *'There is this element of ownership, whether it's a co-ordination role, it may be somebody who's just got an interest in the electronics side of things, it could be somebody who has been given the job. Either way it does seem to need either an informal or formal co-ordination role at a local level. '*

For the NHS, current restructuring is likely to affect some local purchasing consortia. Criteria for value for money are difficult to assess if the metric of usage is unclear, and depends partly on the level at which authentication is managed. For library services, the question might be whether the funds should concentrate on the known 'must-have' material for local needs, and the desirable, but not essential, material can then be purchased through aggregated funds. Centralised budgets at appropriate organisational levels alleviate many of the problems encountered in ensuring that individual libraries in a consortium pay fair shares. In one area e-journal content was purchased on top of a print deal. In contrast, within HE, although JISC offers frameworks of several types, individual HE institutions generally need to come together as purchasing consortia. The pool is made up of individual contributions, not from any top slicing at a regional level.

4.1.3 Across HE and FE (UK)

Across HE and FE the links are generally more tentative. There may be strategic moves towards regional universities with links between higher education institutions and local FE colleges but there was little evidence that joint purchasing of e-content (or print content) had started to any substantial extent. In Scotland there is a programme of cross-sectoral development to organise some regional events, with some visits to FE and public library sites to help raise awareness of developments and the services on offer. In Wales there is little evidence of any collaboration on e-content procurement across the NHS, HE and FE.

4.1.4 Working with the independent health libraries

Individual specialist libraries are not interested in buying into e-journal bundles unless they can pick and choose what is required.

> *'Bundles aren't of any interest we want cherry picking of individual titles'*

For some Royal Colleges the problems of dealing with members who work outside the NHS (or HE) need to be considered. Ideally, the members accessing the College website could be directed to 'core content' resources if they were NHS staff, and to access through the College if they were working in the independent sector. There may be technical solutions to some of the problems of ensuring that only those entitled to view resources gain access but it is possible that the Royal Colleges may have different membership structures and privileges. A solution that would suit the majority of Royal Colleges may be one way of ensuring that those staff working for the NHS, but in the private or independent sector gain access to resources that they need. There is little incentive for their employing organisations to participate, and few umbrella organisations that would be equipped to join e-content purchasing consortia, but the needs of the staff in the independent sector could be met through their professional organisations, and this support would stay with them if they moved job or location.

4.1.5 Support and discussion groups

The UK Serials Group allows stakeholders such as libraries, publishers, and intermediaries to discuss areas of common concern.

'I think it's still extremely hard work because publishers…you can't blame them…they don't of course have the same understanding of the structure on our side as we do…And I do think UK Serials Group is particularly useful in that because at least you have the three elements of the serial cycle…equal members.'

This type of discussion forum offers a neutral ground for discussing future developments and future needs.

Dialogue over licensing conditions is also necessary, particularly as the electronic format means that the concept of the journal (or book) is under review. Would it be cheaper, and as effective, to rely on document supply of single papers requested, and what is the added value of the journal as a journal issue? There may be more agreement about e-journal content than e-books, where initial suggestions are that differences in requirements are marked. There are other benefits beyond the immediate consortial purchasing and value for money considerations, as CHILL have found. The general exchange of experience provided support, and a means of tapping tacit knowledge.

'It's a support network in general…so there's a training element, getting together and hearing what the NHS and HE are doing.'

The implications of open access need to be debated – preferably by all parties concerned. While open access seems unlikely to have the revolutionary impact hoped for by some, it may have positive outcomes, and there is strong support (e.g. from the Wellcome Trust) in ensuring that research findings are made available publicly.

Discussion groups are also helpful in alerting managers to implications of new technologies. Newer developments such as the Technical Protection Mechanisms embedded in e-content may require expertise in data protection to ensure that the publishers' view of usage logs, and the use made of that, does not adversely affect the user if transferred to other bodies. For example, if the licensing terms are subject to US law does that mean that third parties such as the US Government can require access to individual usage logs?

4.1.6 Uncertainties and changes in NHS England structures

For the NHS there may be gaps in structures for negotiation and discussion of procurement, and considerable uncertainty was voiced by some interviewees about the practicalities, such as the difficulty of getting local NHS supplies departments to co-operate with local universities (for example), or even with the NHS libraries themselves.

'Well, talking to each other for a start would be quite useful, better communication…You've got SCONUL really for HE, then you've got whatever for the NHS, the LKDN, I suppose…I don't know how many other university librarians would sort of think...oh yes we much go and purchase with the NHS sort of thing.''

'A significant part of the relationship we have with our NHS customer is influenced by the relationship the library has with their local suppliers department.'

There are considerable resource requirements in terms of time for NHS library and IT staff to work on defining the stewardship requirements for perpetuity, archiving, institutional repository requirements, licensing and enterprise architecture requirements. Roles need to be agreed by members of a consortium. Individual libraries may, essentially, be outsourcing procurement to agents who may be appointed by the consortium or other members of the consortium. This degree of outsourcing requires trust, on both sides, although there are possible time savings for some individual librarians.

Some people are quite happy that a small group of people will be negotiating all of their needs. Others don't like that at all and would feel a lack of control if there is a centralised content procurement…If you have a small group, being able to devote a lot of time to it, that in itself is an efficiency gain, because otherwise

you've got individual libraries all trying to negotiate separately…people are inexperienced in negotiating.'

At the SHA level there has been a pool of staff who could devote some time to this, but this pool may be reduced in the next restructuring. Another concern is the size of pooled budgets when SHAs are reduced in number. Larger budgets may be more noticeable when cost reductions have to be made.

Another change in NHS structures in England was the emergence of NHS Foundation Trusts in 2004, with the government intending all NHS Trusts to be ready for Foundation Trust status by 2008. Foundation Trusts[25] have a different governance structure with more local accountability through their board of members, thus distancing the Department of Health from decisions made at hospital level. Service agreements with Primary Care Trusts will be legally binding (and there are various commissioning contracts for multi-commissioning situations suggested by the Department of Health as framework contracts). Foundation Trusts are accountable to Monitor, a body that wields considerable power if the Foundation Trust runs into financial difficulties. Local accountability means that some Foundation Trusts may put pressure on Connecting for Health, the National Programme for Information Technology, to ensure that the systems procured suit their local needs as far as possible, and as quickly as possible.

Getting things right at the local level is important, but that means not just geographically but also the linking of centres of excellence in oncology or neurology, to work together to form a critical mass to discuss common needs. Even so, political rivalries might prevent some specialist associations (or colleges) from working too closely together.

4.1.7 Working with publishers and suppliers

It must be recognised that one tactic publishers and aggregators use is to create complex deals to make it difficult for them to be directly compared with other suppliers' offerings. They do not simply offer certain content for a particular price. Deals are complex with special discounts or time limited special offers. Publishers may produce different versions of the same database. This is presumably a deliberate marketing ploy, one cannot simply argue for "more communication" as a common good. However, exerting its collective power and by pooling knowledge, more clarity in this area might be one thing that more national level NHS/HE collaborative activity could achieve. Publishers claim to be very flexible in what they are prepared to negotiate and licence terms - even if this is not the perception of many librarians. The publishers argue that for consortia to be effective they must also offer publishers benefits, e.g. simpler licensing processes, bigger scales of deal. NeSLI deals, for example, may involve about 90 institutions for the largest deals, and around 70-75 in the next group. However, HEFCE funds 132 higher education institutions in England, and that means that many institutions are not taking up NeSLI deals. This may be a problem with the procurement timetable or the terms of the model licence. Content Complete, JISC's negotiating agent for NeSLI2 usually negotiate a two year deal.

An assessment of user needs is important if the later success of the project is to be assessed. HE and NHS partners may be on stronger ground in negotiations with publishers if there has been a robust user needs consultation or assessment beforehand. This is only sometimes apparent to the provider.

'I always wonder what kind of consultation there is …that happens beforehand. I'm sure there is but it's just not a very transparent process to me…My experiences with [name] - which I have to say seemed to be very well organised…quite methodically done…and there was some kind of consultation before the project began to assess the users' needs.'

[25] Department of Health. A short guide to Foundation Trusts. London: DoH, 2005. http://www.dh.gov.uk/nhsfoundationtrusts

Across a local area of several NHS Trusts provision may be 'patchy' – pooling resources through collaborative procurement may make sense if more can be supplied for little extra investment. That may help serve the needs of smaller disciplinary groups whose needs have been rather neglected – as one HE librarian commented:

> *'I do feel that it's unfair on the little disciplines sometimes because we can't cater to their specialist needs.'*

However, from the supplier perspective, providing (A+B+C+D) to all instead of permutations and combinations of A, B, C, D to individual purchasers only makes sense if profit levels are maintained. If the user base is broadened, and there is evidence for that, then discussions about pricing are easier.

> *'Generally we've found they've been quite open to that as long as we can provide reasonably clear indications to them of how much additional usage it is actually going to mean in practice or we agree to a pilot phase so that they can actually measure'…*

One respondent also stressed that in his opinion the most likely area for collaboration is traditional print media, where the business model was clearer, and the benefits for both sides easier to define. Other interviewees noted that collaboration on print resources often cemented working relationships, as well as providing a type of procurement that suppliers found easier, to start with, rather than starting with e-content at the outset.

Benchmarking of usage statistics might help individual institutions assess whether training and promotion was working well, as well as helping to make informed collection development decisions. That requires cooperation from publishers to provide statistics that can be compared (as in the JISC collections database assessment tool).[26]

> *'A general national approach across both sectors, NHS and HE about pooling usage statistics, if you can get publishers to agree, I think would be helpful in…giving us more information with which to make decisions.'*

Suppliers need to work with a consortium group to prioritise wish lists of improvements, and such joint working and information sharing helps to build good working relationships, particularly as the situation will change, and there must be some allowance for the changes that may need to be worked in.

> *'That kind of product improvement side of things is really, really important. Also interoperability is increasingly key.'*

> *'A formal change control procedures, that all parties agree to before they start*

4.1.8 Working with IT

Because of differences in IT infrastructure between NHS and HE - especially security concerns on NHS side - arriving at a working solution that supports uniform access to e-resources involves a large number of parties. Sometimes, through close working at a regional level, as in some Welsh trusts this can be achieved. For example, problems encountered by health students on placement in NHS Trusts in Wales are being tackled by a Citrix-based service, based in NHS libraries. This has required the co-operation of the University's Information Services IT department, Health Solutions Wales, NHS Trust IT departments and the company supplying the IT solution, Centralis.

But achieving this at an English national level would be very complex, as far more organisations are involved. Merely providing access may not be sufficient, unless access paths are simple. Consideration of the precise computer set up users have is key to successful use, as subtle differences in the placement of library resource web pages

[26] JISC. JISC Collections Academic Database Assessment Tool. [Web page] http://www.andrews-consultancy.com/jisc_database_assessment/ , retrieved October 13, 2006.

within Trust intranets can make navigation much easier or more difficult. Even the difficulty of finding the Athens password page can block some usage.

There is a problem for many HE institutions in providing for their students at NHS sites, and structures for negotiating requirements would be useful.

> *'I've spent so long with so many NHS technical people trying to facilitate this, Obviously the NHS should have an enormous firewall but it does make it different if you can collaborate on something.'*

There are responsibilities that need to be taken on by the library services to provide added value for their users, but which are not the responsibility of the main provider. These include providing access to full text from the open access journals, or databases, journals purchased locally. Some of this work may be viewed as the responsibility of the local library working with the IT department, sometimes the work can be delegated to someone else working on behalf of a group of libraries (e.g. linking to open access journals, such as the work undertaken at Christie's Hospital for Core Content links.).

4.2 Technical infrastructure

Making resources more accessible preoccupies many library services in higher education. It takes time to get arrangements made locally, on aspects such as IP versus Athens access

> *'A lot of the usage of these things depends on how they are set up on the computers people are using and that's something that we've spent a lot of time worrying ourselves about.'*
>
> *'If it's IP only we have problems because we can't link our machines…you come through the firewall, then you can't identify it down to individual machines.''*

One of the most positive features of the landscape over the last few years has been Athens. One publisher described the UK as one of the simplest country he works with because of Athens. It is also a common infrastructure between NHS and HE, though there may be grey areas about which account to use when on placement. Changes here, such as HE's move to Shibboleth are highly significant therefore.

In Wales the Citrix service based in NHS Trust libraries allows students to log onto 'wise' terminals to access the Cardiff University network, using their University user name and password. In England some NHS librarians interviewed refrained from complicating students' searching unnecessarily.

> *'We tend not to push NHS Athens because it's seen as too complicated and too confusing for students to get to grips with what the university is telling them…And we show them where to log on, we give them information about that but it isn't really pushed.'*

For the independent libraries IP authentication is not an attractive solution when they serve a membership that is located in a variety of types of institution. For such libraries to join in purchasing consortia, there needs to be an appropriate access management solution. For RCN members, access is via a private area of the RCN website, there is no Athens password, just the membership number and surname. Access is simple, and that appears to be very attractive to members. HE librarians mentioned that one benefit of Athens DA (Devolved Authentication) was the ability to use the campus user name as the password, saving staff resource on registering Athens users.

UKERNA's access management federation will be launched officially in January 2007[27], but available during the last quarter of 2006. The federation, which takes over from the

[27] UK access management federation for education and research. Retrieved from URL http://www.ukfederation.org.uk ,on 26 July 2006.

SDSS Federation, provides UK schools, research, further and higher education sectors with a secure mechanism for accessing online learning materials and services. Access management typically requires[28]:

- Authentication (process of verifying who is requesting access to a resource)
- Authorisation (process of determining whether access should be granted to that individual based on information about that individual)
- Attributes (information about an individual in defined formats – member of organisation x, department y, role – faculty or student)
- Accounting (required to describe the statistics function, showing usage, as well as an audit trail).

The exchange of authentication and authorisation information across systems may be provided by a framework such as the SAML (Security Assertion Mark-up Language) framework[29] which is ratified by OASIS. Shibboleth is an extension to SAML, a profile, that includes the concept of anonymity, federations, and a common set of attributes as defined by the eduPerson attribute schema. Authentication and authorisation are of obvious importance to the work of Connecting for Health and the Single Record, to ensure that only those authorised to view a patient record do so, and that there is an audit trail to check the usage.

Access and authorisation solutions that ensure that only those permitted to see particular resources actually get access, at a location agreed (on/off campus, home/work) require more attributes to describe users, and that is likely to mean that universities and other institutions have to take on additional work and create units to deal with this work.

> *'They've simply got to create someone to manage this attribute information and the control of identity across the entire campus and do it properly…the problem is really can universities or can any institution create this Identity Management Organisation?'*
>
> *'I think that kind of thing [Shibboleth] is fine if you've got the technical expertise in house to be able to do that.'*

As noted in the MATU help sheets on Shibboleth[30]

> *'As with any substantial IT integration or enterprise IT project, installing Shibboleth requires careful planning, thought and a level of technical and management expertise beyond 'point and click' or running an install script. It can involved compiling from source code, installing dependencies, modifying XML files by hand, installing and configuring Web servers, generating digital certificates, debugging SSL connections and much more.'*

Eduserv have worked on a pilot with UCL, and other pilot sites, to allow a user logged on with one of their Athens passwords to also see the resources they are permitted to access through their other Athens password (Athens Account Linking Project).

The technical infrastructure affects the success (or otherwise) of linking tools, the link resolvers that make the access to resources truly seamless for the user. If full text is not available, then messages that are context sensitive may be presented to indicate whether the item is held in print in the local library, or enquire whether the user wishes to request an inter-library loan for the item. NLH is piloting embedded links with Dialog at present.

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[28] Eduserv (MATU – Middleware Assisted Take-up Service). Introduction to access management. Retrieved from URL http://ww.matu.ac.uk/access_mgt_intro.html on 26July 2006.

[29] Eduserv (MATU – Middleware Assisted Take-up Service). What is SAML? Retrieved from URL http://ww.matu.ac.uk/saml.html on 26July 2006.

[30] MATU – Middleware Assisted Take-up Service. What Shibboleth is not. Retrieved from URL http://www.matu.ac.uk/shib_myths.html on 26 July 2006

Obviously the choices for the user need to take into consideration the current copyright licence conditions.

4.3 Common interests in content

Looking across the two sectors there is a wide variation in e-collection strategy, but also some specific areas of parallel need, for particular formats and subject areas of content. The subject areas collected may be the same, user needs and usage of the content may differ. However, the widening agenda for the NHS library and information services, and the emphasis on patient-centred care and patient empowerment, mean that the NHS sector needs more access to the broader range of resources found in HE, and possibly FE.

4.3.1 Traditional collection policy differences

In general, universities look for broad subject coverage in e-content to cover all the disciplines served in the institution. A typical resource might be a general database such as SCOPUS, which while strong in scientific, technology and medicine content, includes much material of interest to other subject disciplines – but at a cost. Often bundled collections are bought because they meet a range of subject area needs, the specific needs of health cannot predominate. The difference in perspective between NHS and HE is highlighted in the knowledge and awareness of Dialog and its relationship with Thompson. The NHS associates Dialog and Thomson with the core content databases for England, HE associates Thomson with the Web of Knowledge (WoK). The research-based universities are looking for the high impact journals on the WoK databases.

In contrast, the NHS has some generally agreed core content but also has a demand for very specialised publications for specific expert groups, or pockets of specialist provision reflecting the specialist research needs of an eminent department within one Trust, for example. There may be key journals that are vital to a small group of staff and that makes deciding on priority content, for a deal across an NHS grouping, very difficult.

Similarly, the special libraries within CHILL have narrow, but highly specialist needs.

> *'So with deals it really is a case of what's on the table, as to who would buy into that particular deal. But specialist libraries, all of the CHILL members will have narrow by deep information requirements…different deals will be wanted by different NHS institutions…not every hospital will do everything…Acute medicine will be wanted by a specific number of NHS institutions but not all and not by those in at the academic sector probably.'*

In addition, within the NHS, because the NLH has focused collected development on evidence-based, aggregated sources of information such as the Cochrane Library and Clinical Evidence, NHS libraries have concentrated on procuring different sources of information.

Most fundamentally, the content priorities between research and practice/teaching are different and the pattern of use (e.g. frequency, location, time of day and of year) of research and practice are different. For example, researchers use material much more intensively, though ranging broadly. Practitioner use is likely to be sporadic. This is often not understood by publishers. A risk of cooperative licensing is that the different patterns fail to be recognised in pricing.

4.3.2 Areas of common need on content

Nevertheless, there are some important areas of common need. There does seem to be a core of content that is fundamental for practitioners, but is also essential for HE such as the databases that provide research and practitioner content (e.g. Medline, Cinahl) that students have to learn to use in their undergraduate studies. Many respondents (though not all) thought needed access to the same content whether studying at the educational institution or on placement. Students on placement are a key group provision for whom is

problematic. From the HE perspective a concern has been to ensure that students on placement have equitable access to resources on site. Emphasis may therefore be placed on enabling students to access e-content purchased by the higher education institution. The Service Level Agreements with the NHS Trust libraries may focus more on loans, inter-library loan services and shipment of books between sites. Negotiation of that type of agreement with local NHS Trusts may be relatively straightforward. Some higher education institution prefer more direct control of the e-content for placement students – although NHS Trust libraries are expected to support placement students (HSG (97)47.- .

> *'And obviously we spend a lot of our time going back to the Internet e-resources, we would encourage students to use electronic resources if they're on placements. So they can log into our catalogue, they can do all their renewals and all the rest of it electronically if they need to. So we would place emphasis on that.'*

Within one home country it made sense for a University to opt for the same database supplier as the NHS to make the service appear seamless for the users

> *'if they're used to using the databases at the university it will be exactly the same when they move into accessing them on [NHS system]*

But in another case other factors weighed against this:

> *'when the NHS started buying Medline from Dialog I did toy with the idea of going over to Dialog as well but my punters love the Ovid platform, it's much more sensitive, it's a much better tool. I also have my researchers here who know it and use it as a tool and they don't care what the NHS are doing frankly, they're doing their own research. And of course I have about 10 other different databases on the Ovid platform plus most of my ebooks. So I only have to teach one platform instead of loads of different ones.'*

There is debate about the practical and educational value of a common interface across the NHS and HE (Section 4.4).

4.3.3 Emerging areas of common interest on content

The NHS is widening its user base to social care and various distributed populations of practitioners, and an excellent check of equity of coverage is the mapping of journals in the Core Content to the needs of Specialist Libraries. Another concern is providing more material to non-clinical staff, e.g. managers. There is therefore a good fit between NHS interests in supporting a wider constituency and HE's concern to serve a wide range of students, across health and social care, as well as serving some specialist needs of the new health professional groups:

> *''…social care is now included in health. We do social work and social policy courses. So the material we purchase also has to cater for those students as well. Other groups we have are operating department practitioners.'*

It is difficult to speculate about the needs of the new PCTs in England, and new organisational structures but there is an emphasis throughout the NHS on 'new ways of working' and it is possible that material on health services research, education, management, and operational research, case studies, would be of common interest across the NHS and HE. The usage data (2005/2006) on the BMC open access journals suggest that titles concerned with public health, health service quality, psychiatry, medical research methods, health services research, musculoskeletal disorders, respiratory disease, infectious diseases, general practice, cancer, and cardiovascular medicine are popular. Usage profiles can, of course, change dramatically from year to year, as more NHS staff become aware of the journals available.

A mapping study[31] of electronic journal titles desired by staff in Stockport NHS trust and Stockport PCT, against the Core Content collection of e-journal titles, and four other bundles (BMJ, OVID, Science Direct and Blackwells) identified 217 unique titles that were requested. Of these, 35 (16.1%) were available from Core Content, 14.7% from Science Direct (e-journal bundle) and 84.3% were available in print format within a North West healthcare library. Assessing value for money for journal bundles is difficult. Although Science Direct provided 14.7% of the requested titles, in fact this represented only 6% of the entire bundle (533 titles). In contrast, the much smaller BMJ bundle (22 titles) provided 6% of the requested titles, but the BMJ bundle was more effective overall as nearly 60% of the BMJ bundle was in fact required. The limitations of the study included a low response from certain specialties, with lack of confirmation of the importance of some titles as 70% of titles were only mentioned once. This suggests that more work will be required to ascertain the status of some departmental purchasing.

Journal impact factors may be used as a guide, but citation ranking does not necessarily equate to use or usefulness to practitioners and students, as the measure relates more to importance to research and researchers. Other measures are developing as different ways of assessing level of use of individual articles emerge.[32]

Comparison of the current Core Content for England with the resources offered by NHS Scotland e-library, and taking into consideration the comparative costs of some collections suggests that collaborative procurement across the NHS and HE should be considered for:

- Psychology/Behavioural Sciences (for general access)
- Specialist resources e.g. for speech and language therapists, pharmacists, biomedical engineering and rehabilitation engineering (access could be limited to particular user groups)
- Education resources e.g. resources that would support practice supervisors as well as clinical academics.
- Resources of interest to public health, health service planning, such as ESDS Longitudinal, ESDS International (Economic and Social Data Service), with emphasis on the value-added enhancements for some of the longitudinal data collections (access for some of the value added elements could be limited to particular user groups)
- Specialised estates and social work, local government resources that may be of interest to NHS staff groups and to some universities (e.g. Barbour Index, Planex)

Another perspective on future needs is to examine future trends in health care, to help spot where the important new journals and resources might appear. Obviously publishers have a keen interest in supporting new journals, and there are many new journals that appear and then die, and that makes decisions about supporting new and expensive journals difficult. The reports of the Foresight panel on health care[33] are useful in indicating the emerging multidisciplinary areas. The healthcare challenges identified by the Panel included:

- Different ways of preventing ill-health
- Informatics developments (health information held by individuals, genetic information, new strategies for clinical trials)

[31] Crudge SE, Hill ML. E-journal provision in a health-care library. Health Information and Libraries Journal 2006; 23(2):87-94.
[32] Darmoni SJ, Roussel F, Benichou J, Thirion B, Pinhas N. Reading factor: a new bibliometric criterion for managing digital libraries. Journal of the Medical Library Association 2002; 90(3):323-327.
[33] Foresight Healthcare Panel. Health Care 2020. London: Department of Trade and Industry, 2000.

- Innovation (public participation, technology transfer)

The subject areas where more knowledge is required include:

- Genetic risk, clinical genetics,
- Diagnostics
- Health and the natural environment
- Regeneration medicine (stem cell research, transplantation, tissue engineering)
- Health engineering (integrating mathematics, biology and engineering)
- Neuropsychiatry.

Some of these areas are covered in the work of the Specialist Libraries in the NLH (e.g. Clinical Genetics, Screening) but others are tangential or the fringe interests of several (e.g. Mental Health and Learning Disabilities may have some shared, but minor interests in neuropsychiatry). It is possible that liaison or subject specialist librarians working in HE would be able to identify some of the emerging specialist areas and the resources required not just by the researchers but by those wishing to transfer the research to NHS practice or to examine the policy implications of such research.

Emergent formats such as visual images, e-books, e-learning material, free content probably also offer fruitful areas for collaboration, because the market is emergent and the shape of publisher practice is open to influence. For example, e-book business models vary, and some suppliers may be more willing to put together bespoke collections than would be the case with e-journal publishers. E-books may be purchased in perpetuity or on a subscription basis. Trials have included the Greater Manchester NHS e-books procurement covered around 16 libraries, and allows for five concurrent users ('seats) from Coutts MyiILibrary. E-books are purchased 'in perpetuity'. Another project in the North East purchased e-books from Ebsco (Biomedical Reference collection). PfL (Procurement for Libraries) has had success in seeking suppliers of new, previously not digitally available content as a collaborative project. At the same time, there is strong publisher resistance to experimenting with uncontrolled access to electronic versions of best selling text books. There was some evidence that free resources could provide for visual imaging needs, thus reducing the need for cooperation here, although there will be more emphasis on learning materials with images, and students coming through from HE to the NHS will expect to have image formats available for a wide variety of purposes.

Collection management and related staff costs should offer scope for collaboration. Interim work on the development of the National Service Framework for Libraries[34] has identified issues concerning resources such as the digital space versus physical space, working for an appropriate blend of print and electronic, and capacity issues such as staff levels, and partnership with FE and HE. Given the different type of organisation of library services in the NHS and HE, there are probably limits to the transferability of non-subscription costs from one sector to the another, but this type of work is important if the NHS libraries are to develop clinical librarian and outreach services, and HE services are to work more closely with academic staff and learning technologists on the development of virtual learning environments. Publishers must be aware of research done in the USA that concludes that the non-subscription costs of the electronic format are consistently and substantially lower than those of the print format, when a life cycle analysis is completed.[35] However, realising those cost savings is not straightforward as the skill sets of individual members of staff need to change if the staff time expenditure changes are to be realised. In addition, there was evidence that libraries simply bought more periodicals.

The licensing of content from certain high profile journals is also an area where there may be room for collaboration – though it is unlikely that universal agreement will be found

[34] Davies C. National Library for Health update. Inform: the newsletter of IFM Healthcare 2006; 17(2):20-21.

[35] Schonfeld RC, King DW, Okerson A, Gifford Fenton E. Library periodicals expenses. Comparison of non-subscription costs of print and electronic formats on a life-cycle basis. D-Lib Magazine 2004; 10(1): DOI 10.1045/january2004-schonfeld.

about the value of any particular title. Further, publishers are very protective of such assets and may be very unwilling to unbundle this content and offer it to anything but the most clearly delineated and controlled user populations. On the other hand, the promotion of open access may reduce the dependence of libraries on a couple of publishers. Open access is not free, as it relies on the fees paid by authors or their employing organisations or research funders to an open access publisher such as BioMed Central. The cost per usage has to be calculated a different way, and new metrics need to be established to assess the merits of open access to compare the value added to content by the publication processes, as well as the costs of providing access.[36] NHS and HE libraries could collaborate on ways of promoting open access publishing, and assessing how effective it is among users in the health and social care sector. Content Complete are asking publishers about their policy on open access, including the hybrid model which is part subscription and part open access, where authors (or their employing or sponsoring institutions) have paid to make that article open access. Any licence negotiated with the publisher should ensure that institutions should not be paying twice, through the subscription and the author's fee.

4.3.4 Licensing timescales

Wide variation was found in a short survey through LKDN (financial year, March, 1st of July, "the autumn") but the smaller regional deals in the NHS rarely were made for periods exceeding 12 months. There should be sufficient flexibility to arrange new deals across the NHS and HE, even if there is some period of overlap, and duplication of purchase, particularly as so few examples of collaborative purchasing in the NHS were identified. On the other hand, the survey indicated that decisions were made 'just in time' before the licence started, and that suggests that some organisations need to adjust their thinking to the longer timescale that negotiations for longer term deals may require.

4.4 Common interests in value-added features

Views among the sectors varied on the desirability of easier searching across different platforms, content tailored for mobile computing but a strong theme in NHS responses was the need for quality of service from the supplier.

4.4.1 HE views

HE librarians were often ambivalent about the need for a common interface across NHS and HE for databases, e-journal or e-book collections, although the common interface could simply be at the top level.

> *'I wouldn't necessarily think you had to go very deep with a common interface, just getting people to the content. A single A-Z listing of all items in the NHS HE joint purchasing will be great.'*

Focus groups at one institution reveal that students tend to use Google first, and then use the databases to access the full text.

> *'There are a few people that have got the idea to use Google to find what's available and then they go to our databases to see if they can get the full text. To me it seems to be a cunning and intelligent way of using the system. And we've got various databases of various sorts…we've got hundreds of them…The reason we introduced the Library Log In (Athens DA) was to reduce the number of passwords the students have….The younger generation if you like are probably better at dealing with a range of interfaces.'*

Alternative views were, however, expressed about the advantages of a common platform for the users, and the user support structure. Cross searching is also possible with a federated search engine (e.g. Metalib).

[36] King DW. Should commercial publishers be included in the model for open access through author payment? D-Lib Magazine 2004; 10(6), DOI 10.1045/june2004-king

'So I only have to teach one platform instead of loads of different ones. That is a really big influence for us….Every time we introduce a new database that's different or a new system we have to re-teach the entire student body. So we have to think about value for money in terms of allocating our own teaching time.'

'What we really wanted to do is make everything cross searchable.'

Judging cost per use is only possible with COUNTER compliant statistics, and debate on the lib-stats discussion list is evidence of the need for HE library services to obtain meaningful user statistics.

4.4.2 FE views

For FE, one problem may be finding the relevant resources required, but the scoping of user needs seems to be at the very early stages, in the opinion of some interviewees.

'Only certain parts of the content we have that are likely to be very great use to FE courses. The e-library as a whole with all its thousands of journals is probably a bit overwhelming.'

Funding changes for FE mean that databases purchased need to provide value for money across the curriculum, as the element of subsidy has disappeared for some colleges. For HE students at FE colleges the franchising HE institution usually takes on responsibility for provision, and access to electronic content, on the usual understanding that the FE library purchases print copies of core textbooks. Within Wales, CyMAL has made arrangements for all libraries in Wales to have access to some of the Proquest databases, but the library authorities had to register interest. Similarly in England the MLA is buying databases on behalf of all the public libraries (Reference Online).

FE colleges usually have strong links with local or regional needs. This colours their perspective on database selection as resources that cover legal or policy issues need to have material relevant to their local needs. The NHS is putting more emphasis on upgrading the skills of the non-professional staff. From that user perspective, lifelong learning and workplace learning make more sense if the interface they see that supports that learning is seamless.

However, several NHS librarians acknowledged that they had very little knowledge of what is happening in FE. More awareness of the initiatives in FE might be useful as FE colleges are often heavily involved in initiatives to combat social exclusion, and getting the digitally – and socially excluded – on the learning ladder.

4.4.3 NHS views

Opportunities for increasing the proportion of e-content are increasing as IT is more available in the NHS and

'libraries are increasingly arriving at an understanding that providing stuff in print is just not a good way of delivering stuff to the majority of their users…particularly primary care trust libraries and also mental health libraries...where their user base is very widely dispersed.'

Experimentation and 'pick and mix' of titles seems easier to trial in smaller consortia – libraries may hand pick the journals required in the smaller consortia. With national and larger deals the bundles tend to be pre-defined.

For some NHS interviewees, uncertainty about financing is the major concern – what value - for what money?

'but then you get to a point where you have to try and find the money. And also…I have to bid each year.'

On the question of the same interface as HE – usage statistics (NHS) suggest that when databases are on the platform that is not used for the majority of searching the usage is

comparatively low, [37] despite apparent needs for that type of content. Purchasing a database with similar content, and which could be hosted on the familiar platform boosted usage considerably in one regional consortium. And Google, of course, may be the usual route most NHS staff use[38] – although a high number of staff in NHS England are registered for Athens passwords the majority of staff are not registered, and it must be expected that such staff would use a search engine by default. ,

For the NHS, a major element is providing a resource that can be used easily and quickly,

> *'instant access to what is of particular interest to you, and at a broad enough range of resource so it speaks to your own experience.'*

Much of the emphasis on getting knowledge in an accessible format, the 'knowhow', to the user has been the responsibility of the National Library for Health. For the National Library for Health, a concern is to ensure that clinical staff have access to what they need to know – the current best evidence, and that is not necessarily contained in the journal literature.

> *'We have been too concerned in the last 50 years with the quantity of knowledge, not is quality….the consequence is that we have spent far too much money on journals' (Muir Gray, cited from conference speech)*[39]

Some publishers see a trend towards provision of synthesised content, special products that may also be easier to support on wireless platforms, or PDAs. For the NHS, products that work with electronic health records may provide added value.

> '*An example [name] that would synthesise information taken from books and journals and present in a concise, very usable format for doctors, nurses, students whoever to use at the point of care*

However, these are quite futuristic scenarios. All the evidence seems to be, for example, that PDA use is still in its infancy - even though various experiments, such as Ovid@hand have been tried over the last few years.

Publishers also talk about synthesised content, meaning e-content that has been assembled from a number of original publications into new products aimed at specific user groups. Views varied – some, but not all, interviewees talked positively about the need for tailored content for the PDA or Blackberry. MP3 and audio books may be next.

> *'For our users mobility is absolutely key. And if you can have things like e-books which have, if there are any common interfaces out there for e-books that would be a great help.'*
>
> *'All of our services work wirelessly. To varying degrees of success.'*

Librarians working within clinical teams, the clinical librarians, have trialled PDAs and have immediate knowledge of the type of IT kit the clinical staff are using, and whether that use is developing for clinical purpose or whether the use is largely for fun. Clinical librarians need to be involved in trials of newer products, and the evaluations need to be fed upwards into purchasing discussions.

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[37] Thomas R, Spink S, Durbin J. Urquhart C. NHS Wales User Needs Study including Knowledgebase Tools report. Aberystwyth: Department of Information Studies, University of Wales Aberystwyth, 2005.

[38] Thomas R, Urquhart C. NHS Wales e-library portal evaluation. Aberystwyth: Department of Information Studies, University of Wales Aberystwyth, 2006.

[39] Anon (news item). 'Too much money' spent on health journals, says Muir Gray. *Update* 2006; 5(9): 7.

4.4.4 General views on features that are required

Features of e-journal and database resources that are rated highly include ease of access to the full-text. For example the following were some of the wish-list features mentioned, and some of these apply to e-books as well:

- Linking directly to actual paper in full text, rather than just the contents page for the issue. And, if the subscription does not cover full text, then a pop-up form for inter-library loan might help.
- Personalisation
- Same 'look' for both print and electronic, and good reproduction (for tables, and graphics, colour pdf's) (for e-books, but there is some debate about whether the e-book should in fact look like the print reference book)
- Robust arrangements for archive access to e-journals, so potentially saving space – if print holdings can reduced or long term storage used in a different way
- Interoperability for cross searching of databases
- COUNTER compliant statistics (also need comparable statistics for e-book usage, but this can be complicated by the different e-book models)
- Training and support materials (also for e-books)
- Management of the licensing conditions – suppliers whose conditions are easier to police would be preferred over complicated licence conditions (also for e-books)
- Library branding – and how this is shared with the publisher's branding, or with other members of the consortia, although others believe '*people like clear and simple and give them the links to what they want'*

Publishers and suppliers have been providing their own packages – the container and opening instructions as well as the content. NHS purchasers noted that they were looking for content plus its 'handles', in a usable form for them:

> *'I've seen a change in the nature of our requirements over the past few years not purely content and interface any longer, it's how easily it can be integrated with our system'*
>
> *'We'll have a single search…so we're not necessarily looking for this package where it's all tied together…And I think indexes in usable format, the technology has to be there and to work with open URL link and xml... in that direction.'*

Working with the supplier was important for many purchasers, often as important as cost.

> *'Platform, ease of use, support, compatibility with the existing systems. I think the attitude of the company as well.'*

In summary, the quality of content covers assessment of current and future needs, and ensuring access to the right content at the point of need. Quality of service covers the reliability of the service, training and support.

4.5 Common interests in licence terms

As with content there are divergences but also potential areas of common requirement in licence terms between the NHS and HE.

The main divergence is in terms of licence scope. The Higher Education requirement is generally simply to include all users, staff and students. Publishers do complain that this is often rather inclusive, encompassing as it does international research centres in Asia and creating grey areas in access rights, e.g. for part time lecturers etc. There is also the issue of walk in access – manageable although time consuming for library staff..

Many NHS libraries simply require access for their ATHENS registered NHS staff users. However national deals such as in Scotland have covered other professional partners who are not NHS employees, potentially expanding the coverage to a larger proportion of the population. Similarly, NLH has as its remit to "extend NHS library services to patients and the public for the first time" In fact, cooperative work with the public library sector may be relevant here, and interviewees identified closer working with public libraries as a future requirement. From the perspective of licence scope, then, the requirements of the two sectors seem quite divergent.

It is possible that some published content would be a priority for a very broad population, suggesting the need for licensing following the Icelandic model. In 2001 the Icelandic National Consortium under the Ministry of Education negotiated licences for 2000 e-journals and Web of Science for the entire national population (around 280,000 people). Currently hvar (http://hvar.is/) (in English "where is?") offers access to 800 e-journals and 20 databases. It includes ejournals from Blackwell Publishing, Elsevier Science, Karger, Kluwer and Springer. There is also a specific agreement for Health Consortium agreement with Elsevier(2003). The country also has one national library system (Aleph). The subscription is paid for by the government (6%) and research institutions on the basis of subscriptions in 2000 - a model which is increasingly seen as unfair. [40]. It is dfficult to measure the impact of widened access, because one cannot track demographics of usage where, as here, access is managed through IP addresses. However, it does seem to have impacted national publication levels, particularly in the health sector. Inter-library loan requests decreased 45% between 2000 and 2003.[41], and impacts of 'big deals' are noted elsewhere [42] [43]

However, it seems more likely that cooperation would have to be for relatively narrow populations that are clearly defined. One of the web survey findings illustrated the problem. The results indicated no support (0/9) for a major benefit of collaborative procurement being the provision of resources for specialist staff groups – but, in contrast, a major drawback (over half the responses) was the definition of relevant user groups and the number of users in each staff group. The findings are equivocal.

On the other hand, at the level of licensing terms there is a lot more common ground. Indeed the library sector as a whole worldwide has tended to have broadly the same set of complaints about publishers' license terms, so there is scope here for cooperative work.

Five areas, in order of apparent priority are:

- Off site access

  Off site/off campus access is key for providing a 24/7 service. The problem is the residual publisher perception that it introduces an ambiguity about who is being authenticated

- Content stability

  Interviewees had several issues about the nature of e-content, noting the instability of what was included in a deal. There was a tendency for items to be withdrawn from bundles without consultation. Equally, the electronic version was often somewhat different from the print original. One of the

[40] Thorsteinsdottir S. (2005): Does national access to e-publications make a difference: the Icelandic experience. Journal of the European Association for Health Information and Libraries 2005; 1(4): 27-32. http://www.eahil.net/newsletter/journal_2005_vol1_n4.pdf
[41] Hlynsdottir T, Gylfadottir T [= Þórný Hlynsdóttir og Þóra Gylfadóttir] (2004): Remote document supply in Iceland before and after nationwide access to 8000 e-journals: the story so far. Interlending & Document Supply 2004; 32(4): 70
[42] http://consorcio.bn.br/cdnl/2002/RTF/Doc_Supply.RTF
[43] http://www.library.yale.edu/~llicense/ListArchives/0111/msg00000.html

advantages of a common deal would be that there would be collective monitoring of what was actually being delivered.

- Print cancellation and archiving
  Publishers may insist that existing print subscriptions be maintained although e-content subscriptions for the same material may obviate the need for a print subscription. More flexibility on substituting print subscriptions might be desirable. With an e-content subscription only, when a licence lapsed, or content was withdrawn by a publisher, archival access could be lost.

- Concurrent user licensing
  Licences which potentially lock out users if the number of users exceeds the concurrent user licence terms assume that usage is, or can be smooth, and this is unrealistic, particularly for student use.

- Usage statistics and data.
  Statistics need to be comparable across suppliers and platforms, and open access statistics presented in a meaningful way as well. Cost per use is possibly more complicated to calculate for open access journals, as the model is different.

.
. Much of the problem stems from fears of loss of revenue of publishers. There is scope here for the two sectors to work together to educate publishers, e.g. in the inappropriateness of concurrent user licensing models.

4.5.1 Common interests in procurement negotiations.

Common interests need to be worked at and a background of partnership working e.g. for the London Medical Schools Group helps in later work (e.g. the London Health Libraries/M25) to work out the details of a co-operative deal where 'you had to slice and dice it to meet their needs.' Working to different financial years (universities do not work to the NHS financial year of April to March) has to be considered as well. One interviewee stressed the importance of clear decision making responsibilities – for a potential deal to work, each purchaser in the consortium has to have an identifiable decision maker to authorise the deal, and if agreed, the commitment to invoicing must be clear as well.

For smaller groups of NHS trusts buying packages of electronic journals, partners in the consortium need to agree on a fair but efficient method of allocating costs – an equal split or weighted by size of trust or by usage? Finding a valid method for determining a fair basis of payment for access to e-resources is important to both the NHS and HE.

The survey responses indicated that the main benefits of collaborative procurement were perceived to be (in descending order): cost savings on purchasing, negotiating power for dealing with purchasers, greater content coverage (electronic), and reduced duplication of journal titles (electronic).

4.5.2 The provider perspective

For publishers and suppliers, it is easier dealing with library consortia buying print (books or journals) as the deal is transparent – the consortium is committing to buying x copies of book a, and y copies of book b. Discounts are easier to organise. Even so, there may be disagreements over what would be the core books as the curriculum may vary among universities.

> *'There wasn't a high amount of overlap….what we were defining as the key books.'*

However, if the consortium is large enough, these differences should be less significant in determining whether the negotiation and organisation is worth the discount that the supplier can offer.

Typically, changing from print to electronic subscriptions for a group of split-site libraries or a national subscription means that one electronic subscription would cover their needs but represents a potential loss of income for the publisher. The question of fair payment is important for publishers and suppliers, as the deal should be in everybody's interests.

> *'I think often the members in the consortium don't think about what the benefits would be for the publisher.'*

As well as common interest between NHS and HE, there are also areas of common interests with content providers. It is the economies of scale arising from consortial deals that enables publishers and aggregators to offer discounts. However, one problem for providers who are not successful in tendering in one cycle is that the situation appears to preclude any relationship with the NHS for some years and that can be a long time given the speed of technological and product development, unless deals are made at regional or local level.

> *'If you miss one of the procurement cycles, a new cycle may not come round for another three or four years which almost precludes any relationship or conversation it seems to me with the NHS for three or four years…but of course they're not really willing to discuss new products or interesting products if they know that they don't have any extra budgets'*

Large scale procurements, at the national level, seem risky from the viewpoint of the supplier as more time is involved with no guarantee of success. The individual publishers are concerned about who is actually using their products. Smaller scale procurements may allow suppliers to develop and trial technical solutions to some of the licensing problems (such as Roaming Affiliation for different Athens passwords), as well as trial specialised products in a more focused way.

The main problem, from the perspective of the aggregator or the publisher is that the body negotiating a licence may not the person paying. Suppliers may offer a price on the basis that if 20 institutions buy in to the deal the price holds – but if only 19 are interested then the deal does not proceed. This makes sense to the supplier, but the individual library services are dependent on others to buy into the deal. From the purchaser perspective, having framework contracts and model licences avoids the need for separate library consortia to develop their own agreements, or go through the entire procurement process themselves.

It often makes more sense for services with known common interests to get together and negotiate a deal. Shared interests and a shared pot provides them individually with broader access to a wider range of content.

4.5.3 Secondary uses of content

One of the problems for library services was not directly attributable to the procurement of e-content but the adverse outcomes involved were further complicated by licensing conditions often associated with e-content. NHS librarians reported that the NHS copyright licence had not been renewed. The outcome is that staff time is being taken up with checking and monitoring the licensing conditions for each publisher. One solution might be to centralise document supply services, but this would represent a large change in staff roles in individual libraries, and the co-operative structures that have been established over many years.

If publishers could be persuaded to allow libraries to use the e-content for inter-library loan/document supply, in the same way that a library's subscribed print journals may be used for copying for document supply, that would relieve libraries of some of the effort

associated with monitoring of licence conditions. This problem was mentioned by several library services (and is now addressed in the JISC model licence).

> *'things like you can't use the content for interlibrary loan whereas you can with the hard copy, and it's' simply illogical that you can't use e-content for that purpose.'*

> *'If we have e-journals we can't actually run our document supply service because they won't allow us to send pdf of e-articles as it were or articles from electronic journals. So that's a problem for us.'*

4.5.4 Common interests in monitoring the success of procurement, licensing

Monitoring the success of procurement and licensing can be done with the successful providers but this demands that expectations of benefits are set out at the start, and the user constituency has been closely defined. Several of the librarians interviewed mentioned that they looked at the usage statistics at local level, *'to see if I can get some sense of trends',* fewer mentioned using the data for audit of usage, and comparing that with print usage, or online accesses for other journals.

> *'And I'm looking to actually reduce the number of print copies I have of journals…I'm comparing how many times a print journal's been used by the number of times it's been accessed online.'*

There is an informal tariff operated by some HE purchasers, that if the cost per use of a journal (in a selected bundle) exceeds the full cost of an inter-library loan (around £10), then the journal subscription may not be renewed. From the publisher perspective – fewer purchasers imply higher costs per download (if subscription prices rise) and this implies a vicious circle of cancellations, and costs that can only be covered by increased subscriptions. For the Core Content purchases, a much lower cost per use would be expected as the cost per download should reflect the larger number of users within the NHS. The difficulty is comparing like with like – NHS Core Content purchasers may prefer to calculate the average cost per article within a collection to assess whether a collection is good value. SCONUL statistics for 2004-2005, include a new ratio on the use of e-resources: an average (mean) of 35 journal articles were downloaded per FTE user, at a mean cost of 78p (and median of 87 pence) per download (and for e-books the mean cost per e-book access was £1.12, median cost £1.34). However, the average cost may be kept low by a large number of downloads from popular titles within that collection. Gaining an idea of the usefulness of a journal title is more difficult unless comparable usage figures for print titles are available, and the figures for the percentiles (25^{th}, 75^{th}, as in SCONUL statistics) are available)

The usefulness of a journal title for the research community is usually assessed from the impact factor in the Institute for Scientific Information (ISI) rankings. However, this may or may not be a useful guide for a collection aimed at health professionals in clinical practice. Journal impact may be judged in a variety of ways and one study that compared journal impact rankings for selected physics, chemistry and biotechnology journals with download data obtained from a large digital library (Los Alamos National Laboratory Research Library) found that even among the research community the networks of use (reader generated) differed from the networks of use implied by the author generated citation data.[44]

However, there are justifiable uncertainties about the likely take-up of e-content procured for new types of user groups within the NHS family. Community pharmacists may be working to dispense NHS subscriptions but be working in a retail chain that is part of another organisation that a supplier could deal with. There are three stakeholder perspectives. First, the actual end-user who may prefer to access a small number of

[44] Bollen J, Van de Sompel H, Smith JA, Luce R. Toward alternative metrics of journal impact: a comparison of download and citation data. Information Processing & Management 2005; 41(4):1419-1440.

relevant resources for them (the RCN surveys indicate that their members appreciate the RCN's service '*it's easy to use because it's not huge'*). Second, the NHS library wishes to broaden the user base, and to ensure that the resources provided are used cost effectively. Third, the publisher (or supplier) may consider that their service would get more usage, and more revenue by offering a separate deal with the organisation representing the specialist end user, rather than trying to propose a deal that covers all possible NHS users.

There is a lack of information about usage and usage patterns in some organisations, *'We're not very good on finding out at the moment how these things are used',* although other groupings (e.g. KA24) are more advanced in analysing their statistics[45]

> *'We're fairly selective…we use them for future procurement...we use them for accountability for value for money to our funders, the SHA and we are using them for marketing…Our SHA executives love these figures, cost per full text download…Percentage workforce we're looking at as well.''*

Various aspects of the practical management of licences could be discussed if members of a consortium could share experience. For example, the practicalities of what to do about 'walk-in licences', and the implications of establishing a Remote Application Server, were mentioned as areas that could benefit from exchange of experience.

Flexibility is also required in large consortium deals. E-book models are developing and there may be differences for individual institutions in deciding to go for the 'buying outright' or 'subscription' model. Ideally:

> *'the key thing is to offer flexibility for the models so that the individual institutions, individual libraries can sign up on the terms that they find favourable. I'm not sure you should be looking for one size to fit all.'*

4.6 Duplication in procurement

4.6.1 Identification of duplication

There are five senses in which licensing of e-content is being duplicated:

1. NHS licences may cover students on placement and staff members, who are also covered by HE licences. In effect, access is being paid for twice – assuming students use NHS resources while on placement. Such duplication is a long-standing source of complaint. This is most obvious in the provision of databases such as CINAHL, BNI, EMBASE, and some physiotherapy databases.

2. Some publishers also consider different physical locations, even if they are within the same Trust, as multiple sites, therefore the trust has to pay more than once for access.

3. National deals for the whole NHS in England for example, are being duplicated, usually by continued print subscriptions, within the NHS by local NHS library services because of concerns about access to the content in the future (for which purpose hard copy is more trusted).

> *'you wouldn't rely on a national agreement because that's beyond your control. So in a way the core material that a library needs is what they buy themselves, it's not what's provided nationally.'*

It is a long standing problem that departments and units may also be duplicating content held by NHS libraries, again because of a lack of trust in continuing provision. Indeed, individual practitioners may be purchasing content that they could access through some institutional access arrangement. These features of the situation reflect the difficulties of establishing trust between the parties involved due to rapidly changing circumstances and

[45] Cumbers B, Urquhart C. Durbin J. Evaluation of the KA24 (Knowledge Access 24) services for health and social care staff in London and the south-east of England. Part 1 Quantitative. *Health Information and Libraries Journal* 2006; 23(2): 133-139.

the relative invisibility of intentions of different parties. Thus national level strategy may be quite clear, especially to those involved, but a small element of doubt will lead to duplication by local libraries to establish a cast-iron guarantee of long term access. What in the long run will be considered to be core?

From the viewpoint of those responsible for purchasing the Core Content, there needs to be an assessment of what realistically can be achieved nationally, and how topping up locally can be done as efficiently and as effectively as possible. But the term 'Core Content' may raise unrealistic expectations.

4. Because of bundling of content, different aggregators' deals may actually contain the same content. Thus it is common for e-journals to be available from multiple aggregators, and so there may be two access routes. This is probably not really a problem as such, though it makes the comparison and evaluation of different deals more complicated - especially as the content of bundles may be quite unstable. (Survey responses (4/9 responses indicated a major drawback as the provision of more titles, but poorly matched to core needs)

5. The effort of negotiating licences for the same content for NHS and HE is being duplicated, since much of the same content is required in both sectors. This means that the potential negotiating power of working together is not being exploited.

While identification of duplication in content may be relatively easy for two institutions that are merging, or that have to work together (e.g. two universities involved in running a medical school) there may seem to be less incentive for other libraries to cooperate, particularly if there is a perception that the core content is covered nationally.

> *'I think probably because there is quite a lot available nationally there's a reluctance from managers I guess to start saying they can order things on top of that. We're already getting all the national stuff…why do we need any extra…it kind of takes the urgency off.'*

4.6.2 Reducing duplication

Comparing deals

The process of reducing duplication even for two institutions that are merging is complicated for the library services by the apparent difficulty in comparing the deals on offer from suppliers, who seem to be *'reluctant to say, right for 12 months it will cost you x pounds to have access, unlimited access to all these different databases.'* Publishers may be used to deals with a university based on the number of full time equivalent students in the university. Although some of the health students may have access to a particular database through the NHS licence, there is no incentive for the publisher to alter their negotiating position, and business model, for their particular licence.

Local and collaborative working

Specialist NHS trust libraries could form a small consortium to jointly purchase e-content that serves their specialist needs, and by pooling resources they can purchase far more e-content than they could individually. For the publisher and supplier this is a deal that works for them as well.

Stages of collaboration

Buying into existing deals is a start. One interviewee mentioned how an HE institution had bought into the NHS core content database deal, although there was no evaluation data yet.

4.6.3 Advantages in reducing duplication in procurement activities

The primary benefits of reducing duplication would be: to save money, in the cases where duplication implies buying the content twice. Where it means duplication of procurement effort, the primary gain would be to save on licensing negotiations and presumably improve licence terms. Deduplication would also reduce the number of interfaces in use,

and so simplify user training. There are secondary benefits in freeing up resources to purchase desirable, but currently unaffordable resources. Section 5 discusses how some of these benefits may be realised.

Serving niche needs
For specialist libraries such as Royal Colleges assurance that their members' general clinical needs can be met through NHS and/or HE procurement, would allow them to focus on niche needs of their users, such as education resources to support doctors who have a training role, or training the trainers. Royal Colleges may also have responsibilities for maintaining collections, ensuring long term preservation of materials.

> *'We do buy certain textbooks that are classics because you can trace the evolution of all the medical specialties through the collection across the five centuries that we've been around, so we continue to do that.'*

For the NHS, reducing duplication might free up resources to spend on costly, but niche resources (such as some pharmacy resources) that could be procured on a more equitable basis than at present possible for staff groups working in the community, and not for a major acute Trust. Interviewees commented that sudden price rises in e-content forces individual libraries, if negotiating as individual libraries to go back to individual user licences, rather than a site licence. This is a step backward. The step forward would be:

> *'more co-ordinated collection development across NHS and HE.'*

For HE, the main advantage is that a better system should resolve some of the problems about eligibility and access. While technical solutions might be found to the problem of placement access, the problem might not exist, if procurements could be done jointly. For databases, HE could buy into an NHS framework agreement for databases, and this would reduce duplication on database purchase, as long as the needs of HE research users for the databases are met. As some concerns were expressed about preferred suppliers and interfaces, a content-only deal might work better.. Alternatively, the NHS commissions library services from higher education including e-content, and HE is the lead purchaser. E-books is another area where the needs of users could be similar, but more analysis of usage statistics is required..

Meeting unknown needs – the long tail
Providing larger bundles, of e-content, may allow some niche needs that are not known, and which might be difficult to assess, to be met. The 'long tail' of titles that come as part of a big deal may be used far less than at the top, very popular titles, but the content of the long tail may provide content that is useful to small niche groups of users.

Benefits for the supplier
For the supplier, the reduced levels of administration, for both supplier and purchaser means that more time can be devoted to the training and support materials that can be provided.

> *'It's quite difficult just to support one small site on its own.'*

4.6.4 Disadvantages in de-duplication

For higher education the main concern is to provide a similar standard of service to students on placement, and boundaries of placement sites may not be coterminous with NHS organisational structures. For some undergraduate students on placement:

> *'they could also have an NHS Athens password and use NHS resources. The two are not exactly the same so they may get some resources through the NHS that they couldn't get through us and vice versa. If they are that keen, they might get slightly more resources available through one system than the other. I don't think most of them get to that level of enthusiasm.''*

For NHS libraries, the contribution to consortial purchase means contributing money to purchasing consortia, on a fair basis agreed by all – not always an easy task for the person in charge of collecting contributions (See also 4.5.1).

> *'Even if you've got overlap in terms of similar organisations wanting to work together there's still practical issues about dividing the costs and allocating costs…sometimes trying to take off contributions to things it's a nightmare who should pay what.'*

From the publisher perspective, the top journals generate the most income for them, and the barrier to licensing that type of material across the NHS and HE is the risk of losing income. For a publisher with a global market the NHS may still seem small, given the size of the health business.

4.6.5 Stakeholder perspectives on risk

For publishers the major perceived risk is that a national deal on e-journals may mean that a large number of print subscriptions will be cancelled, and the price offered may represent that 'worst case scenario'. The view of one purchaser was:

> *'what experience tells us is that there'll be some cancellations but a lot of people won't cancel their existing subscriptions because they're never sure that these national deals are going to last that long.'*

Similarly, for e-books, there is a perception that some publishers may withdraw from institutional licences as they fear the loss of income from individual and library purchase of the print copies. From the library perspective:

> *'What I want is the electronic access as well, as an enhancement, and they seem to think that the people are going to buy one or the other. If you have a model that works and the pricing isn't unreasonable I think that you'll find that people will want both.'*

Some of the independent libraries which have a large number of members find it difficult to obtain evidence that electronic access to a journal for their members will not result in the loss of income for the publisher as they have no way of proving that individual members subscribe or not, and if they do, that they will cancel subscriptions.

Publishers stress different value-added features of e-book deals. For example, Taylor and Francis focus on the interaction – users can annotate in the same way that they might write notes in the margin of the print version. Wiley Interscience offer swapping of titles, a feature libraries use in the print world in collection development. Other publishers are merging their journal and book offerings into a single interface. At present, these offerings are essentially trials, to test out what the market wants. It would be sensible for the NHS and HE to jointly conduct trials of e-book models, and evaluate user uptake carefully. The SUPC experience might help guide their procurement.

There are stakeholders who currently have little voice in the process. The independent libraries have their forum through CHILL, but there are many staff who may be working for the NHS indirectly in independent treatment centres or in the private sector generally, who have not had access to resources. Reaching this group, and making them aware of what they could demand will require time and energy.[46] Social care workers for example may be local authority employees, and some may have ATHENS access through agreements with their local universities – but this is not universal. Not all social care staff are local authority employees, as there are many agency staff and voluntary staff as well. At present the Social Care Institute for Excellence has funds to commission reviews (for practice guides) and manages the Social Care Online resource, but does not pay for access to full text journal articles (although open access material may be linked).

[46] Yeoman A, Durbin J, Urquhart C. Evaluating SWICE-R. Final report for South West Workforce Development Confederations. Aberystwyth: Department of Information Studies, UWA, 2004.

Licence models may be useful in helping institutions to cater for present and future needs on VLE usage, for example, and to deal with the copyright issues. The framework contract that institutions choose to buy into – or not – is more difficult for suppliers to handle as there is no guarantee about numbers who may actually buy into the agreement.

5 Ways forward on collaborative procurement

There seem to be three main possible types of cooperation:

- Information sharing/advocacy
- Technical infrastructure
- Consortial negotiations for procurement

These are discussed in the following sections

5. 1 Information sharing/ advocacy

Here the objective would be to build up cooperation through sharing information or advocacy for common interests. This would probably lead on to deeper collaboration over time as mutual understanding and networks of cooperation developed. As a focus of activity publishers and aggregators could also be included at some level, so that their understanding of the particular character of the sector is increased.
Information sharing/advocacy could be in the following four areas:

1. Sharing knowledge of existing deals – what content, licence terms etc i.e. continuing the stream of activity within which this project sits.

2. Shared effort and advocacy about licence conditions in general. Section 4.5above identified a number of areas where there is dissatisfaction. Specifically:

off site access

content stability (the way that content of bundles change)

print cancellation and archiving

concurrent user licensing

The survey responses concurred, with major drawbacks in collaborative procurement including lack of flexibility, and the staff time required for negotiations.

Rather than negotiate a specific deal it might be that concerted effort between the sectors could achieve money saving by focussing on key areas of library dissatisfaction with unreasonable licensing terms and service delivery, which seem to arise from publisher ignorance as much as anything. This might be pursued by collaborative projects geared to demonstrating how everyone is losing under current restrictive or unfair licences or investigate the value to users of archived content. Such activity would probably also in accord with international efforts. JISC's work on model licences has already be made a lot of progress here. The survey responses also indicated support for the greater negotiating power that collaborative procurement might bring (four out of nine responses expected this benefit, those who were involved in procurement hoped for this outcome).

3. Sharing knowledge of usage of e-resources and shared advocacy for better usage data (i.e. COUNTER compliance). Our understanding of how health information sources are used is patchy, so collective effort to build up a complete picture would be invaluable. It would also increase understanding of what should be licensing priorities. It would also help publishers understand the specifics of the two marketplaces and have more certainty about the impact of potential deals for their subscriptions, a key area of anxiety for them. Initially activity at this level might be stimulated by organizing a conference with invited papers on the theme of patterns of professional and practitioner use of e-content.

4. Shared effort and advocacy about Open Archiving. NHS in England has already taken a major step in promoting open archiving by paying a subscription to allow its staff to

upload research publications to Biomed Central. There is certainly also a strong momentum behind open archiving across HE. Some sort of alliance to promote use of content from open archives and open deposit of research would receive widespread support across the profession. This again might be a useful area for joint projects.

5.2. Technical infrastructure and development

Some respondents thought that issues with publishers were relatively intractable, but that there was a sense that HE and NHS technical infrastructures were coming into greater alignment, although some respondents cited difficulties (e.g. on USB and other connections). Cooperation might be best focussed on technical areas. An example of such co-operation is the Athens account linking project that is being evaluated at present. Across 23 organisations, 45 individuals were registered. Preliminary indications suggest that to get the necessary changes made at some sites would require a business case, not a minor alteration to the system due to the complexity of the system. Certainly it would be damaging to the prospects of existing collaboration if NHS opted for a different authentication option from HE.

A primary focus of joint infrastructural development might be in the area of open archiving. NLH Specialist Libraries provide very tailored access to the evidence and know-how about best practice in specialist areas, at national level, but more access to local 'grey literature' might be useful for management sharing best practice on modernisation of health service delivery.

One content management arrangement that does work across the NHS is the maintenance of links to free and open access content for NHS staff, to allow access to articles located through the Dialog databases. One member of staff at Christies Hospital, Manchester does this one day a week (Manchester eLinks project).

5.3 Consortial / negotiation

This would involve direct collaboration in procurement processes as a consortium or some looser federation of consortia. It would benefit from being built on advocacy (Section 5.1) and agreements about technical infrastructure (Section 5.2.).

5.3.1 Subsidiary choices about consortial/negotiation level cooperation

It makes sense that if options discussed in 5.1 or 5.2 are pursued that this be a general activity primarily pursued at a national level. In contrast, if collaboration at the level of a consortia or negotiation is the objective there seem to be two major further issues to resolve. Should the collaboration be organized nationally or locally? And should it be for specific content types?

National or local?
The advantage of national level collaboration would be:

- Fewer partners
- Reduction of negotiation effort
- More negotiating power, assuming that there money to bring to the table
- Economies of scale for publishers as well as libraries as customers
- Opportunity to achieve national consistency in provision

Issues to be resolved would be:

- Who is to collaborate? – JISC and LKDN and National organizations in Scotland, Wales and Northern Ireland? We also identified that there was common interest with the public library sector in negotiation of licences for very broad populations

- What organizational mechanisms are there to identify content and gain library/user input and feedback?
- How secure is the funding that can be brought to the negotiating table?
- How can all interested parties be kept informed?
- When is there an opportunity where existing deals/ timetables occur?
- Should this be a framework agreement into which universities or NHS libraries can opt or a license paid for nationally?
- How can all parties be guaranteed continuity – to avoid defensive duplication of content?
- How is success to be evaluated in a way satisfactory to all?

The survey responses indicate support for more, rather than less national collaboration. For those working at a national level (e.g. in NHS Scotland) there is an issue in HE's lack of an umbrella organization (notwithstanding the work of JISC or PfL).

For HE frequent structural changes in NHS are perceived to be an obstacle to collaboration. Further, the internal complexity of NHS is both difficult to understand and creates a plethora of organizations with different needs. There are some quite marked differences of perspective at the national level in NHS; and not the same strength of collaborative network across the sector as in HE.

As there is no uniform model about how Trusts deal with library issues, it is difficult to understand who to talk to. There maybe no single responsible authority. A new driver for NHS libraries to collaborate on e-content may be the planned National Service Framework (for England) that is being devised by the National Library for Health. Implementation of the National Service Framework may result in less procurement at the local level of the individual library. The survey responses also supported more local and more regional collaboration.

The advantage of more local collaboration (SHA/ regional consortia) or local to particular libraries would be:

- Flexibility to respond to local circumstances, and different arrangements for educational funding
- Stimulation of local initiative and building on existing local cooperation
- Ease of consultation of local librarians and users
- Reduced risk and complexity

Activity at this level could be stimulated by some national level resourcing/support, or through LKDN, working (presumably) at Strategic Health Authority level in England, together with the existing regional HE procurement consortia., thus:

- offering services such as negotiation expertise
- support to develop shareable training materials, where an interface or database is widely used.

Issues to be resolved would be lack of geographical fit, as the organization of NHS regionally does not match the HE regional consortia, and the different coverage of higher education institutions providing nursing education and/or medical education.

General or media specific?
Our analysis above (section 4.3.3) has pointed to significant divergences in content need across and within the two sectors. This suggests that cooperation might be most effective if concentrated in activity around particular types of content:

- Databases – there is definitely core content that everyone subscribes to and uses
- E-journals – there does not seem to be much agreement on any title that is core for every party. Publishers of such titles would probably be very cautious about licensing it to a large, possibly amorphous population.
- E-books – the PfL suggest that it may be successful to identify content that has never been easily available but where digitisation enables affordable delivery with added value (just as the Beilstein database is now both essential and affordable). There are more obvious needs for textbooks and reference books that both sectors require. However, some e-book purchasing models concern purchasing slots, not particular titles (e.g. SUPC/Proquest contract).
- Images – there seem to be indications that openly available content already meets many needs
- Printed material – again PfL argue that there are greater potential savings for publishers in this area, so collaboration would benefit all parties.

It might also be that content for specific user groups might be a focus for work.

5.4 Making this happen

One of the difficulties with the current way in which collaborative procurement is being managed is the apparent lack of sufficient feedback and information. Lack of reliable data on user needs or usage patterns means that negotiations between purchaser and provider are more difficult than they need to be. The responsibilities for monitoring the success of any procurement, in different ways, seem unclear. Unless there is an adequate and transparent monitoring process, re-procurement negotiations are jeopardised, and neither provider nor purchase gain from the exercise.

The timescale of previous procurement exercises has often mean that several discrete processes have apparently been rolled together, and this is difficult for the negotiators involved. There are also many stakeholders involved, and it is worth remembering that not all stakeholders have equal responsibilities, and that the choices open to stakeholders vary. In the multiple stakeholder system of organisations, Hirschman[47] notes that participants have three choices available at any time: Exit or withdrawing, ceasing to be a participant; Voice, trying actively to control or influence the system; and Loyalty, a passive participation. Participants also have rights and obligations resulting from their stake in the organisation which may affect if, and how, they attempt to exercise control. Centralised procurement may assume Loyalty, but perhaps there need to be more channels for 'Voice' to work upwards and downwards from the centre to the periphery.

To make collaborative procurement work requires trust and some information sharing among the partners and some of these processes should not, it seems, be skipped. We suggest that the following processes, or sets of tasks, are involved in collaborative procurement exercises. A preliminary diagram (based on use case principles) (Appendix 6) illustrates the complexity of the current situation, but the exercise is useful in raising questions about the extent of involvement and the type of involvement expected of the 'actors' in each set of tasks.

The processes proposed are:

- Exchange information /shared advocacy (Section 5.1)
- Find consortium partners
- Identify common and complementary needs

[47] Hirschman AO. Exit, voice and loyalty: responses to decline in firms, organizations and states. Cambridge, Mass.: Harvard University Press, 1970.

- Identify users to be served by consortium
- Formulate initial statement of requirements
- Devise framework contract
- Provide and negotiate initial price for deals
- Negotiate with individual publishers on licence conditions (aggregator)
- Provide usage statistics
- Monitor and analyse usage statistics
- Identify access management arrangements
- Organise access management
- Plan open access repositories

This list is not complete and several of the processes may need to be subdivided. If an extended use case specification[48], is used to set out the process, then this does help to raise essential questions about ownership of the process, stakeholders who have not got a direct input, but who are involved to some degree, and what the expected outputs of the process are. (Use cases are not, strictly speaking, regarded as processes in some manuals on business process modelling, but the framework is convenient to use, and helps to ask some necessary questions).

For example: the basic framework for the extended use case specification is

Goal (what the use case is about)

Scope (scope of system under discussion)

Level (is use case invoked at a single sitting or not)

Actor (anything/anyone that exhibits behaviour that affects the system)

Primary actor (one initiating interaction with system)

Stakeholder (who has a vested interest in the system)

Preconditions (what must be true before the use case runs)

Trigger/event (real world event that invokes this use case)

Success guarantees: (what must be true after the use case runs)

Main success scenario (happy day)

Extensions (what can happen differently during the use case)

Identification (numbers to link with other use cases)

Cross references (when a use case references another use case.

The following examples have adapted the scheme, by using Level to signify whether this is happening at local, regional or national level. The identification and cross references have been omitted, at this stage. The aim is not to set out the process as it should happen, merely to propose and also question some of the components of the process, such as the trigger – when should the process start, what are the assumptions and preconditions to allow the process to operate. Some of the risks are set out, and dealing with these may require an extension to the use case – another process to deal with the

[48] Cockburn A. Writing effective use cases. Reading, MA: Addison-Wesley, 2001.

things that do not follow the 'happy day' scenario. Occasionally the level of risk may demand a separate use case, or the set of procedures to be followed are common to other use cases.

5.4.1 Exchange information/share advocacy

Goal: To share information about user needs/collection development/ access issues

Scope: Can include a variety of activities, the emphasis may be on informal partnership working and raising awareness of mutual concerns. Groups should aim to interact with national groups such as UK Serials Group (communication upwards and feedback downwards)

Level: At local level (geographically) or at local level defined by shared specialist needs

Actor: Individual librarians responsible for e-content development (may be library managers but the role may be delegated within HE to those responsible for e-content provision and promotion). Other actors include the IS/IT staff dealing with access management issues.

Primary actor: Librarians responsible for e-content development

Stakeholder: UK Serials Group, JISC (and various committees, RSCs), JISC Content Procurement, Publishers' groups (who has a vested interest in the system), and various existing groups JISC NHS-HE Forum, UMSLG, CHILL etc.

Preconditions: Local group must have shared interest in e-content collection development

Trigger/event: resource constraints or opportunities, technology changes

Success guarantees: Information collation of mutual benefit/advocacy campaign plans, increased trust among forum partners.

Main success scenario: Formation of informal forum, meetings arranged and/or exchange of information, discussion of findings, agreed plans to advance the activities of the forum.

Extensions: The main changes are those that affect most ad-hoc groupings – the group disappears, or becomes part of another group. The risks are generally low, although it must be pointed out that future procurement negotiations may need to be underpinned by the trust developed by joint working.

5.4.2 Find consortium partners (regional)

Goal: Identify the HE, FE, NHS and independent libraries interested in forming a procurement consortium

Scope: SHA/Regional level

Actor: SHA level NHS LIS, LKDN, HE regional procurement consortium

Primary actor: Either SHA (NHS) OR HE (??)

Stakeholder: JISC, NHS-HE forum, Core Content Group

Preconditions: Potential procurement partners need to have allocated funds to buy into deals

Trigger/event: Current licences due to expire within the next 18 to 24 months

Success guarantees: Consortium partners identified, with negotiating contacts identified for each partner in consortium.

Main success scenario: List of consortium partners identified

Extensions/risks: Alterations due to organisational restructuring, or organisational boundaries that are not coterminous. The main risks to this process are that sufficient consortium partners are not found, or that organisational restructuring means that a

partner withdraws at short notice, endangering the viability of the consortium. This may be averted by having a sufficient number of partners so that if one pulls out, the remainder may still proceed.

Notes: If there are existing HE procurement consortia at regional level, it seems sensible for them to act as the basis of NHS-HE regional/SHA level groupings but the groups are unlikely to be coterminous. As the existing consortia are largely dealing with print, SHAs might lead the process acting with the relevant educational providers in their area. There should be liaison with the LKDN, the NHS-HE Forum and JISC.

5.4.3 Identify common or complementary procurement needs (local/regional)

Goal: Partners in consortium to have mapped content needs that are core (all or most require); desirable (at the right price); possible future needs, archiving requirements

Scope: May vary – could be cross disciplinary or dealing with a subject specialism

Level: At local/regional level (NB this should feed into national negotiations on procurement)

Actor: Individual libraries, publishers as providers of usage data, other sources of usage data or needs assessment

Primary actor: Individual library service (HE, NHS)

Stakeholder: JISC, NHS-HE Forum, LKDN

Preconditions: Libraries or bodies representing libraries should have usage data and subscription information, archive details, licensing details, for comparison and mapping

Trigger/event: Procurement renewal within 12-24 months

Success guarantees: Partners to have agreed on common requirements for clinical/research content, type of content that is being procured by both (and whether serving mainly clinical, mainly research or mainly student) groups, comparison of usage patterns to identify differences and similarities. Partners also to have agreed on how the desirable (but not at present supplied) content needs map to their individual 'must have, should have, could have' framework.

Main success scenario: Partners map their current content procurement to a framework that could include following dimensions: clinical focus (by staff group), research focus (by staff group), specialist needs, requirements for currency and archiving. Core, niche and complementary/desirable needs to be identified. Also whether print, print + electronic, electronic only required for their user groups.

Extensions/risks: Inclusion of FE, or independent health libraries, or public libraries, or independent health units (GP practices etc). Extension to include mapping for other libraries, or other bodies (e.g. GP practices, independent health organisations to review whether to buy into deals. The main risks to this process are changes in user population (e.g. a shift of an educational contract from one HEI to another, withdrawal of courses at an FE college, or Trust mergers, demergers). Other risks concern the gaps or inconsistencies in usage data, uncertainties about personal and departmental subscriptions. Existence of some historical data might allow for assessment of trends and estimation of future usage.

5.4.4 Identify users to be served by consortium

Goal: To clarify the user groups by clinical/research staff or student categories, usage type and frequency, to assist in determining licensing conditions and pricing.

Scope: Should cover direct users accessing remotely (home), work/campus based, library-based (including training groups) and indirect users (resources provided through document delivery services provided by libraries), walk-in users, and (for independent libraries) membership categories.

Level: Local/regional/national

Actor: Library services

Primary actor: Library service (NHS) and Library service (HE) or their representatives (SHE, regional HE procurement)

Stakeholder: LKDN, NLH, JISC

Preconditions: All parties need to have data on the comparable usage categories relevant to their library service, data on physical access problems and opportunities (e.g. what percentage of staff using shared computers, roll-out of new systems), and information about lifetime of educational contracts.

Trigger/event: Should be based on annual statistics collection, reviews of usage

Success guarantees: Equitable access to resources for users, based on likely usage pattern.

Main success scenario: Categories of user data collated for each site involved, for both current and project future trends.

Extensions/risks: May need to negotiate separate arrangements for walk-in, or other special cases, or devise use case to deal with estimated demand if reliable trends for usage data not available, or user groups change (e.g. with shifts of educational contracts). The investment in IT infrastructure (and e.g. implementation of the Map of Medicine in some areas) may have an effect on user needs and patterns of usage.

5.4.5 Formulate initial statement of requirements

Goal: To achieve a statement of requirements for negotiation with suppliers, specifying the type of content required, usage predictions, expenditure band

Scope: For e-content may need an assessment of the impact on corresponding print subscriptions (for journals)

Level: Can be local, regional, national

Actor: Consortium partners, suppliers also contribute by information provided about their products

Primary actor: Consortium lead

Stakeholder: JISC, LKDN/SHA, NLH, HE regional procurement consortia (depending on level of process stakeholders may be actors, rather than stakeholders)

Preconditions: Estimates of user needs and trends, provisional price trends for various types of e-content, should be known, existing spend among consortium partners identified.

Trigger/event: Opportunity for joint procurement (existing licences coming to an end, need for additional specialist content, etc.)

Success guarantees: Statement of requirements that form the basis of negotiation with supplier/aggregator

Main success scenario: Discussions to produce a statement of requirements that differentiates the core (must have), desirable (should have) and complementary (could have) content for the various members of the consortium, the financial contributions each partner can make.

Extensions: Risks vary according to the scale of the deal under consideration, the degree of bundling of print and e-content being considered, the security of the financing offered by partners.

5.4.6 Devise framework contract

Goal: To devise a framework contract / model licence

Scope: Can concern print, print plus electronic or electronic only content, and usually for a consortium that has a legal entity status. If the consortium does not have a legal entity status the licence is a framework licence for each individual partner to 'buy into'.

Level: Variations may be necessary for NHS Trusts working in consortia, HE-NHS consortia.

Actor: Consortium partners, NHS PASA, JISC (depending on scope and level of the contract)

Primary actor: NHS PASA working with JISC (for NHS-HE) and NeSLI, JISC Content Procurement company

Stakeholder: Educational contractors, and educational purchasers, legal advisers to NHS, JISC, Publishers Association

Preconditions: Needs of NHS Trusts or SHAs and their HE/FE partners, working in different consortia in various parts of the country should be similar

Trigger/event): Estimate of effort to devise a common framework less than estimate of status quo for consortium partners to continue individual negotiations, requirement for standards in procurement changes

Success guarantees: framework contract/model licence suitable for use by various consortia of the type relevant to that framework contract

Main success scenario (happy day): For NHS-HE consortium licence, the simplest route may be to adapt existing model licence agreements, checking that the adaptations are appropriate, and legal. The licence should cover the definition of authorised users, access to the archive, network security and other uses such as use for course packs, ILL, prohibitions and publishers' conditions of use, and details of any performance related payment.

Extensions (what can happen differently during the use case): Framework contract useful to consortium partners individually if the conditions are feasible, and if they (or their organisational procurement authority) can commit to the contract, for the time specified, with funding. Risks concern the viability of a model framework if consortium partners pull out at an early stage. This risk is lessened is those who wish to use the model licence have firm budgetary commitment to using the model licence as a framework for procurement. The concerns about access to electronic material mean that separate licence frameworks may be necessary for print, print + electronic, and electronic-only e-content.

5.4.7 Provide and negotiate initial price for deals

Goal: To provide an initial set of prices on request for a specification issued by consortium, with initial negotiations and queries concerning the outline specification at a conclusion

Scope: Can concern print, print plus electronic or electronic only deals, for various levels of usage

Level: At national/regional/ local level

Actor: Supplier (and/or publisher), consortium lead

Primary actor: Supplier (and/or publisher)

Stakeholder: Publishers, suppliers, consortium partners, JISC, NHS PASA

Preconditions; Specification sent out to potential suppliers

Trigger/event: Suppliers wish to respond

Success guarantees: Offer from supplier provides a basis for further negotiation or immediate acceptance.

Main success scenario: Suppliers set out any queries, and these obtain a response from the consortium, procedures to follow standards for procurement if appropriate (e.g. WTO guidelines), debriefing procedures included for unsuccessful suppliers

Extensions: Risks concern no publisher/supplier providing a price that is reasonable – in which case, evaluation necessary to consider whether it is appropriate to restart the procurement process with a new draft specification.

5.4.8 Provide usage statistics

Goal: To provide COUNTER compliant statistics for user groups

Scope: Should distinguish between download and views – e.g. so that html views followed by pdf download are not counted as two usages when in fact it is the same item. Need a valid definition of usage, and statistics from different publishers/aggregators should be comparable.

Level: May be consortium level and individual library level/library site level, monthly with quarterly and annual cumulations – as agreed with purchaser.

Actor: Publisher and aggregator

Primary actor: Publisher

Stakeholder: Purchasing consortium, Publishers Association, Project COUNTER

Preconditions: Licence conditions for supply of usage statistics need to be agreed, or other agreement with open access publisher for access to usage statistics.,

Trigger/event: Contract for supply of e-content starts

Success guarantees: Usage statistics supplied on a timely basis that meet requirements of purchaser.

Main success scenario: Publisher provides usage statistics and responds to queries from purchaser about the interpretation of items in a satisfactory way.

Extensions: May need to extend the use case for the purchaser to enable them to collate usage of the same journal from different aggregators – this would a use case where the purchaser was the actor. The risks for the purchaser are that statistics are misleading, or difficult to compare.

5.4.9 Monitor and analyse usage statistics

Goal: To assess whether usage is providing value for money, assess trends in usage

Scope: Can be done over a month, or periods up to a year or more

Level: Could be done at organisation or consortium (regional/national) level.

Actor: Library partner/ Funder/ Consortium lead

Primary actor: Library staff

Stakeholder: Publisher

Preconditions: Comparable and meaningful statistics from publishers/aggregator available

Trigger/event: Annual review of expenditure

Success guarantees: Value for money estimations, trends in usage identified

Main success scenario (happy day) Statistics to be supplied, collated and analysed to indicate usage by different user groups, sites, trends in usage. Libraries to be able to add in cost data to provide a cost per use. Should be able to assess usefulness of particular journal titles or groups of titles.

Extensions (what can happen differently during the use case) Assumptions may be made that the 'user' (as registered by password etc) is the real user but if password sharing occurs this is not entirely true. Variations in definition of usage views and downloads. Differences between views of aggregators and publishers need to be reconciled.

5.4.10 Identify access management arrangements

Goal: To identity how authentication, authorisation and attributes are obtained,

Scope: Should be sufficient to provide accounting arrangements of usage

Level: Local/regional/national (and combinations of these)

Actor: Athens managers (or equivalent access manager); IT managers, IT staff

Primary actor: Designated Access Manager

Stakeholder: Publisher, consortium, library management

Preconditions: Licence conditions on user groupings need to be specified, need to have mechanisms for obtaining details about user status (e.g. educational/clinical/research and time periods applicable)

Trigger/event: Use case runs whenever a user or group of users added.

Success guarantees: Users are correctly authenticated, authorised and access provided accordingly.

Main success scenario: Access manager obtains details required from various sources to give authentication, authorisation and access details, and that the time periods for particular status are clear

Extensions: Risks concern the problems of insufficient data to register users' access rights correctly.

5.4.11 Plan open access repositories

Goal: To identity critical success factors for development of open access repositories for reports of research and best practice in the NHS

Scope: Sufficient to provide guidelines for NHS IT and library staff to work together

Level: Local/regional (NLH Specialist Libraries should fulfil function at national level)

Actor: IT managers, IT staff, Library Managers, Clinical governance managers, Research Governance managers

Primary actor: Information Manager with Research Governance Manager (but this could vary)

Stakeholder: NHS Trust Boards, Strategic Health Authorities

Preconditions: Responsibility for collection management and development of such reports needs to be clarified

Trigger/event: Use case runs when process of setting up procedures for open access repositories approved by senior management in NHS Trust

Success guarantees: Plans for open access repositories approved and actioned.

Main success scenario: Actors agree on roles and responsibilities, guidelines for development are agreed, and disseminated to staff responsible for parts of the process

Extensions: Risks concern the problems of deciding ownership for publication of in-house reports, and possible shared ownership and responsibilities between research reports done for external funding bodies, dissertation/thesis research done by individual members of staff, (etc). Research done within e.g. University hospitals would often naturally go into an HE repository, but there may be a need to review how findings relevant to NHS service delivery should be handled.

Appendix 1 Online survey of clinical academics, health informatics staff

1. Are you happy with the existing provision of e-library resources for your teaching/supervision and research? Please indicate your degree of satisfaction with provision of the following for you. -2 =very unhappy to +2 =very satisfied

	-2	-1	0	1	2
e-journals					
e-books					
Databases such as MEDLINE, CINAHL					
e-learning material					
images					

Please add any other comments on resource provision

2. What access problems have your students on placement experienced when trying to access resources required for educational reasons? Please indicate all that apply, and the scale of the problem.

	Often a problem	Occasionally a problem	Rarely a problem	Don't know scale of problem
Passwords				
Unreliable access				
Confusing interfaces (differences NHS/HE)				
Lack of suitable resources				

Please add any other comments about access problems for students on placement.

3. Do students need to access e-library material using a palmtop or handheld device?

Yes	
No	

4. Do you need more e-learning material?

Yes	
No	

5. Do you personally use e-library resources through NHS networks?

Yes	
No	

Other Comments

Please indicate the role that most nearly describes your area of expertise.

Doctor/surgeon ↑

Nursing/midwifery/health visiting ↑

Therapist/Pharmacist/Biomedical Scientist ↑

Appendix 2 Online survey of health librarians

(Sent out with brief explanation of the purpose of the survey)

A workshop on 3 July in Birmingham explored current problems, opportunities and ways forward. We need to collect information on your experience, and your opinions, of some of the solutions proposed.

1. Do you take part, or have you taken part, in any collaborative collection development activities across NHS-HE? This could include discussions about collection development strategies, document delivery, as well as joint procurement of e-content or print content.

Yes (Please go to question 2) No (Please go to question 3 after completing any comments)

Box for comments

2. If you have been involved in joint procurement of content, of print or electronic content, please provide details of the main types of content, duration of licence, and the type of organisations that participated in the procurement.

For the most recent procurement activity please indicate

a) type of participating organisations
(radio buttons for NHS, HE, FE, Independent health library)

b) format of content being procured

(radio buttons for print-only, electronic only, print + electronic)

c) type of content being procured

(radio buttons for databases, e-books, e-journals, images, multimedia content)

d) user groups targeted for the procurement

(radio buttons for clinical research, health services research, medical/surgical, nursing, therapists, pharmacists, biomedical scientists, managers and administrators)

e) main focus of the procurement

(radio buttons for educational needs, practice needs (primary care), practice needs (secondary and tertiary care), research needs (organisational development), research needs (clinical/biomedical)

f) publishers/aggregators involved in the procurement

(radio buttons for Blackwells, BMJ Publishing, Dialog, Elsevier, Ebsco, OVID, Proquest, Swets

g) duration of licences involved

radio buttons for 12 months, more than 12 months

h) When will the current procurement require re-negotiation?

Radio buttons for Already expired, Oct-Dec 06, Jan-Mar 07, Apr-Jun 07, Jul-Sep 07, Oct – Dec 07, Jan –Mar 07, Other (please specify)

i) funding sources used for the procurement

radio buttons for recurrent funding, non-recurrent funding,

Comment box

j) main body responsible for the procurement

NHS SHA, NHS Other, HE, NHS-HE consortium, Other (please specify)

k) Do you plan to renew the current agreement?

Comment box

3. What do you see as the main benefits of procurement collaboration? Please indicate the three most important benefits, in your opinion.

Choices of
Reduced duplication of journal titles (electronic)
Greater content coverage (print)
Greater content coverage (electronic)
Providing resources for specialist staff groups
Sharing of experience in procurement negotiations
Reduced staff time for procurement negotiations
Cost savings on purchasing
Negotiating power for dealing with publishers
Reduced training time for end-users working across NHS-HE

Comment box

4. What are the main drawbacks of such collaboration? Please indicate the three most significant drawbacks, in your opinion.

Choices of

Lack of flexibility
More staff time for negotiations
Defining the relevant user groups and number of users in each sector
Unreliability of content coverage
No cost savings
More titles, but poor match to core needs
Changing organisational structures

5. How have you worked to reduce any of these drawbacks? How long did the procurement process take (approximately)?

Comment box

6. There are various levels for collaboration in procurement of e-content – at local, regional or national levels. Do you think there should be more, or less, collaboration between the NHS and HE on e-content procurement at these various levels?

Choices	National :	More	Less
	Regional	More	Less
	Local	More	Less

Comment box

7. What are the main ‘value for money’ criteria that you would apply to such procurement activities?

Comment box

Appendix 3 Lib-stats survey questionnaire

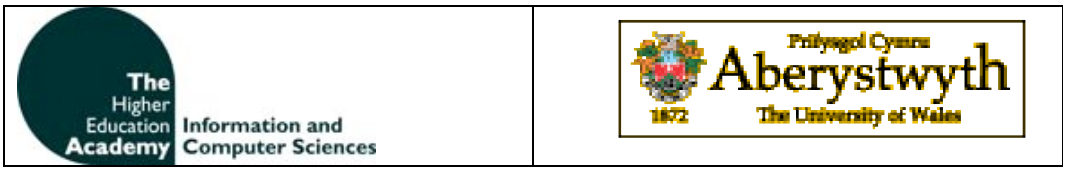
The collective spend on e-content by the NHS, Higher and Further Education is very large and requires close scrutiny to ensure that the public are getting value for money and the needs of users are being addressed. For this reason, the JISC and the LKDN (Libraries Knowledge and Development Network) has commissioned some research on usage and satisfaction with existing electronic services and e-content procurement. The study is being carried out by Department of Information Studies, University of Wales Aberystwyth, working with the Higher Education Academy Subject Centre for Information and Computer Sciences (HEA-ICS).

The interim findings indicate that usage statistics could contribute to more informed planning of procurement, but the discussion on this list shows that there are some problems in getting reliable statistics of usage.

We'd welcome any views you have on the following questions, but please send in any other comments you believe relevant to the study.

1) For procurement or re-procurement negotiations, which usage statistics (and for what type of content) are most useful to you?
2) How could usage statistics be improved to assist in strategic planning for procurement of electronic content, across the NHS/HE/FE interfaces?
3) What type of information on usage do you believe should or could be shared with other partners working in a procurement consortium for e-content?
4) There are various licence models - pay as you go, pay per site, per user (variously defined) - which of these work best for particular user needs, in your experience?

Appendix 4 Agenda for workshop



NHS-HE ePROCUREMENT WORKSHOP

Lakeside Centre, Aston Business School, Birmingham
3 July 2006

PROGRAMME

)0am	Tea/Coffee, Arrival and Introductions	
30am	Introduction to the procurement investigation	Liam Earney
45am	Project update	Christine Urquhart
)0am	NHS staff priorities	Christine Urquhart
15am	Group session 1 - Current experience in consortial purchase and use of e-content	
15pm	Round up of group discussion	
45pm	LUNCH	
45pm	The researcher perspective	Frank Norman, NIMR
)0pm	Group session 2 - Ways forward on e-content procurement across NHS-HE	
)0pm	Round up of group discussion	
30pm	Concluding comments	Christine Urquhart Paul mcCullagh
45pm	Tea/coffee/biscuits, departure	

Appendix 5 Workshop report

The interim findings focused on the current experience. The main themes identified at that stage were the need for understanding, better communication among the various stakeholders and the need to nurture procurement relationships. Saving of money through collaboration in procurement might not be successful if that were the primary objective. The benefits of cross-sectoral purchasing had to be identified carefully.

Procurement of e-content by the NHS mattered as there was a domino effect, with others trying to plug the gaps for specialist groups. There were emerging needs in images, and some debate about the most appropriate business model for e-books – given the questions about the usefulness and use patterns of e-books.

Risks might be reduced by:

- Bringing consortia together – for shared learning about pricing, expectations about usage
- More transparent thinking about the staff time required for negotiation
- Access to wider range of material (as this is the user expectation for full text)
- Adapting other procurement models e.g. NHS construction – uses ProCure 21 – cutting risk "in the past the NHS has largely disregarded risk and pushed it on to the contractor" (Health Service Journal, 22 June 06[49])

Supplier comparisons were made on the basis of price, but delivery aspects were equally, if not more important to many purchasers. These included interface design, access to archives, reliability of supply, flexibility (pick and mix deals) as well as willingness of suppliers to explore new ways of providing access (e.g. through PDAs).

Apart from the obvious barriers such as cost, other hurdles included the complexity of deals, as there is considerable variation in institutional needs among higher education, before even considering adding in NHS and FE institutions to any deal. If collaboration required changing systems, training schemes and documentation, benefits need to be realised. Opportunities are apparent for e-content in deals that are basically print-based, delegating procurement negotiations can free up staff time in some institutions, and collaboration may permit some experimentation with new content. For users, the work on Shibboleth authentication may provide the seamless access desired – but the work behind the scenes to deliver Shibboleth should not be underestimated. On the other hand, for student learning, dealing with different interfaces may be judged a valuable learning experience, and a common look and feel only important at the top levels. Open access and institutional repositories should have an impact but the effects are not noticeable yet. Monitoring of trends in usage seems quite limited.

Two sets of questions were devised. For the first group discussion (in two groups) the questions were:

- What type of consortia deals work best? (and how do we know?)
- Where are the risks, who owns the risks and how can the risks be managed?
- Use of e-content – trends and opportunities?
- Staff time – implications across NHS and HE, FE.

The second group discussion (also in two groups) considered:

- What might the benefits be of NHS-HE consortial working?
- Who are the players?

[49] Better buildings. Health Service Journal supplement, in association with Procure 21, 22 June 2006.

- What should they do? And contribute?
- What are the likely quick wins?
- Routes around?

The flipchart sheets summarising the discussion points were analysed after the workshop and three diagrams produced to synthesise the main themes.

Important trends that affected procurement were:

- Changing roles for higher education institutions and the NHS, as both publishers (e.g. institutional repositories, deals with Biomed Central for NHS authors) and procurers of e-content.
- Interfaces – drives towards personalisation but at the same time student users accessing e-resources through Virtual Learning Environments (and that may require library staff to work with academic staff).
- Innovation continues, and procurement negotiations need to consider the high probability of changes in the near future.
- Users expect just-in-time delivery of full text (free) but licensing conditions continue to be complex and are often more suited to 'just-in-case' provision.

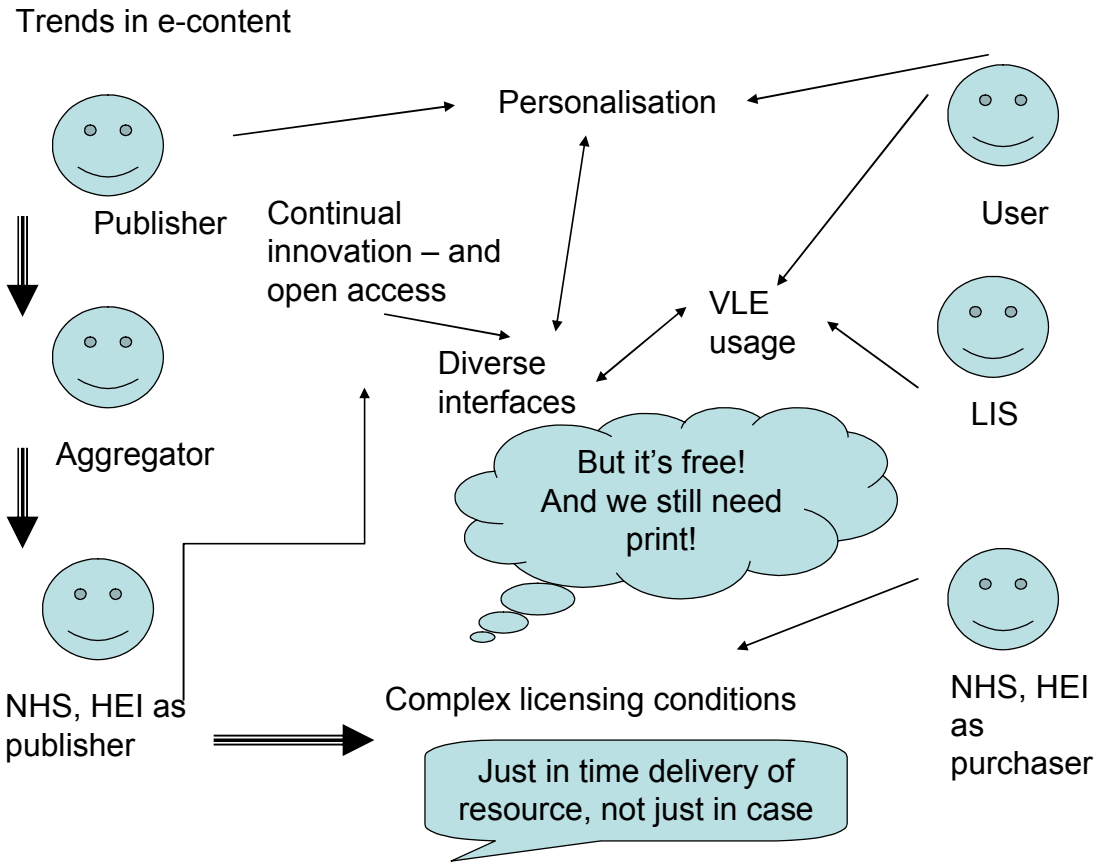


Figure 1 Trends in e-content

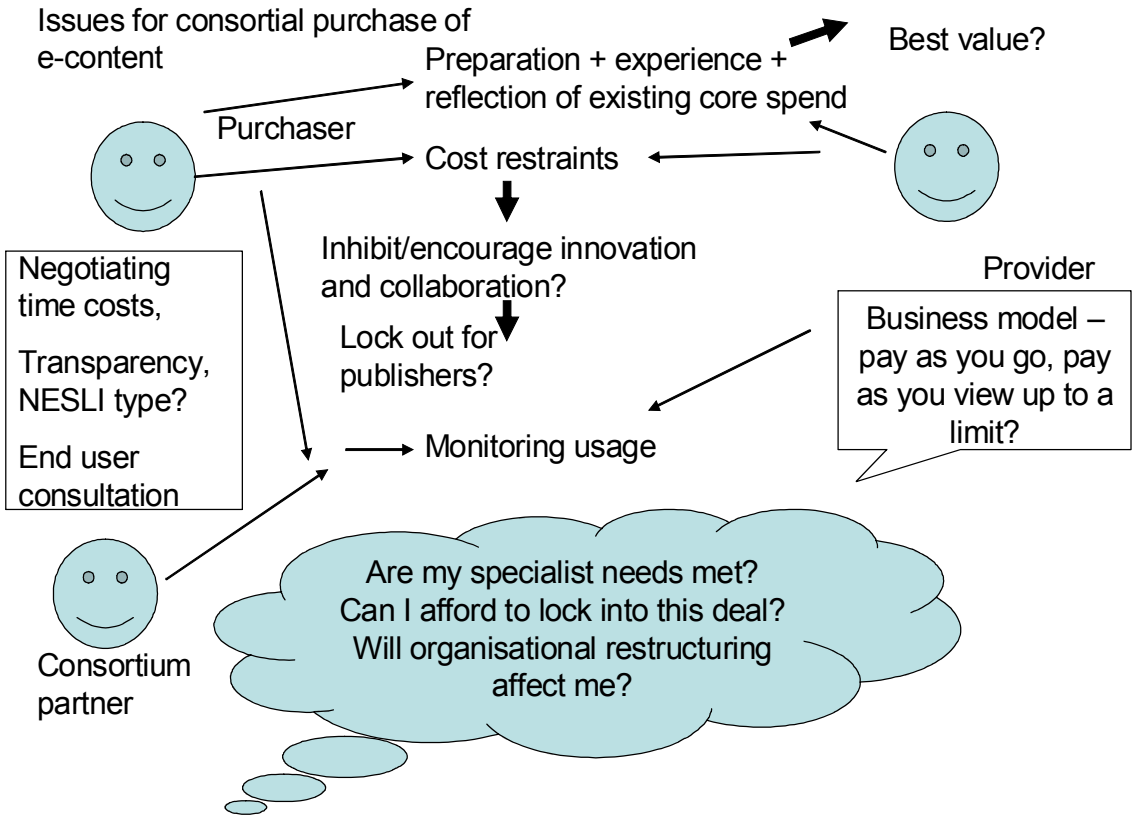


Figure 2 Factors influencing e-content purchase by consortia

Discussions about the risks and benefits of e-content purchasing by consortia indicated that:

- Consortia partners had to consider the time required for negotiation, transparency of negotiation and the type and scope of end-user consultation that was necessary.
- Individual consortia members need to think about the match with their specialist needs of the deals on offer, whether they can afford to lock into a deal and for NHS members in particular, the effect of possible organisational restructuring can pose risks
- Best value deals are probably gained if the deal reflects the current core spend of the consortia members, consortia members have experience of negotiation in this type of deal, and are well prepared.
- Providers may offer different deals when future usage is uncertain – pay as you go, pay as you view up to an agreed 'subscription limit'.
- Monitoring of usage may be more important and needs to be interpreted carefully.
- Cost restraints should not inhibit innovation and competition, but there is the danger of 'locking out' some publishers from large deals, and that can be detrimental to innovation and development.

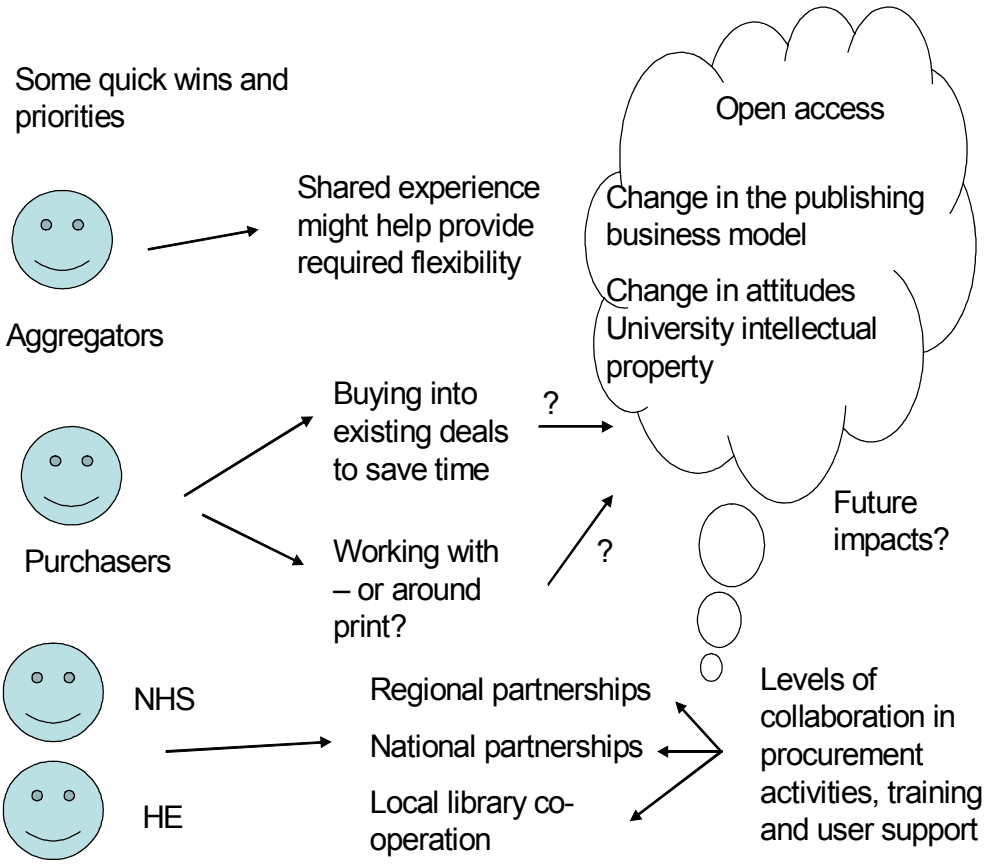
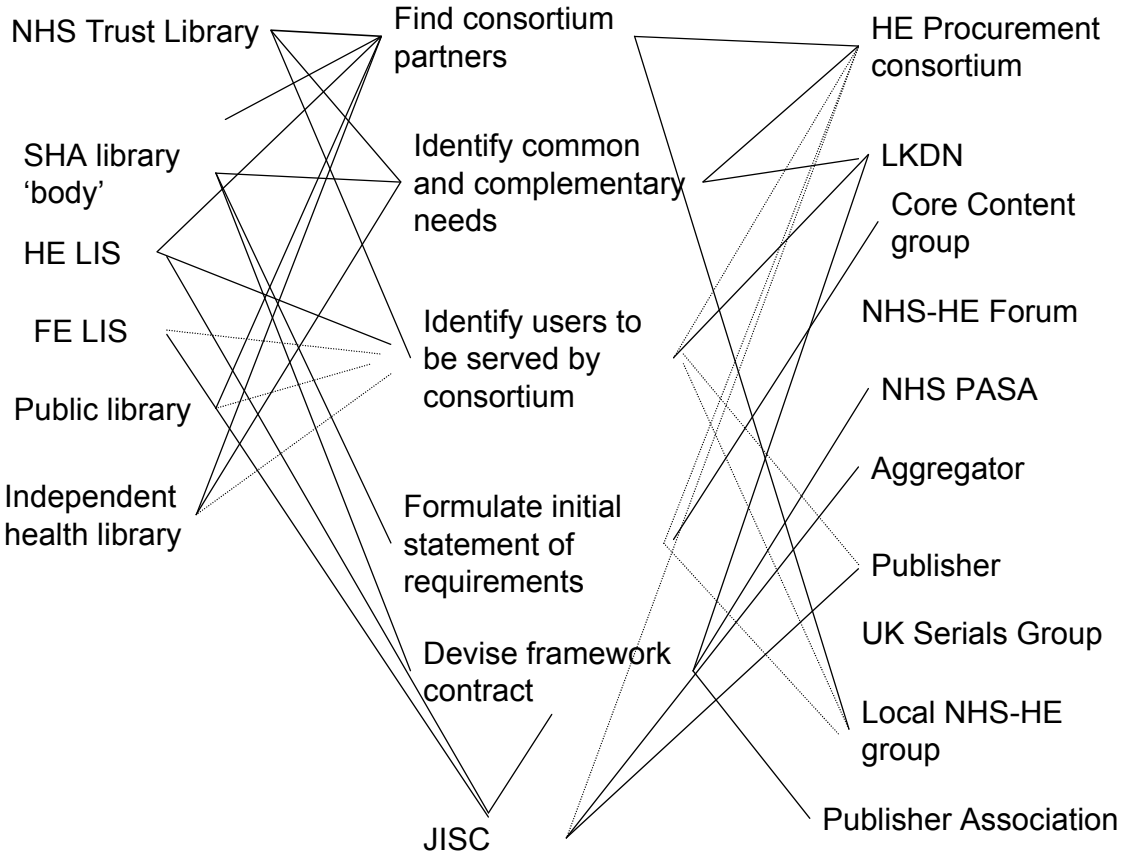


Figure 3 Identifying priorities and quick wins

Appendix 6 Process views



Dotted lines indicate optional relationships currently, solid lines indicate current relationships