CONSORTIUM PURCHASE

OF ELECTRONIC RESOURCES

BY PUBLIC LIBRARIES IN ENGLAND

INTELLIGENCE-GATHERING FOR RESOURCE

STAGE ONE

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1. INTRODUCTION AND METHODOLOGY

Following the gathering of baseline information on the purchasing of electronic resources in the annual NETBase returns, the brief from Resource was to undertake structured interviews with library authorities and consortia in England with a view to identifying:

- what works well;
- what are the various management models that have been adopted ;
- what is problematic with respect to the management of commercial products;
- what issues and concerns staff have;
- what are their views on future development and how such procurement could best be managed.

Six consortia were surveyed: Central Buying Consortium, Co-East, CUSP, Foursite, LASH (Libraries Access Sunderland scHeme), Libraries in Partnership West Midlands (LIP WM).

Interviews were carried out in March 2002, using the following structure:

- 1. What is the membership?
- 2. What is the decision-making and management structure?
- 3. What personnel are involved dedicated, voluntary, procurement...?
- 4. What contracts are in operation?
- 5. How are the contracts managed and what problems are there?
- 6. What issues and concerns do member libraries have regarding e-resources?
- 7. What would you like to see in the future in terms of e-content, and how should it be delivered?
- 8. Should e-resources and traditional procurement be co-ordinated, and if so how?
- 9. Are there licensing issues?
- 10. Are there technical issues?

Consortia were also encouraged to raise issues or concerns themselves.

Five library authorities were also surveyed: Blackburn, Bristol, Croydon, Knowsley and Norfolk.

These interviews were also carried out in March 2002, using the following structure:

- 1. What e-resources do you subscribe to now?
- 2. What are the selection criteria?
- 3. How do you make the resources available?
- 4. What is the take-up?
- 5. Are there technical issues/problems (passwords, IP addresses...)
- 6. Are there skills issues for staff, for users?
- 7. What content would you like to make available?

Libraries were also encouraged to raise issues or concerns themselves.

In order to put the results of the intelligence-gathering into a structured context, I preface the results of the survey with an analysis of the information value chain and an outline of the procurement cycle. These ideas are, I believe, fundamental to an understanding of the challenges and opportunities of procuring e-resources in a rapidly developing marketplace.

I then analyse some of the procurement models for e-resources that are emerging in the UK and abroad, before outlining issues arising from the survey that Resource might wish to consider.

My thanks go to all those who responded to tight deadlines and so frankly. I hope, but cannot guarantee, that I have not misrepresented their views.

2. THE INFORMATION VALUE CHAIN

We can identify the following activities or functions in the information supply chain: creation, publication, aggregation, access and use.¹ To a greater or lesser degree, each of the activities, or links, adds value to the information, until it is used and the value realised. Some of the main concepts applied during this discussion are: branding, authority, monopoly, and the product-to-service shift.

Each link in the chain confers an element of **branding** or **authority** on the information. Authority has to do with reliability, informed opinion, having status or expertise: a news broadcast in the BBC's World Service, for instance, carries a great deal of authority. Branding has to do with consistency and quality. Examples might be the BBC's *Evening News* and Channel 4's *Evening News*: these are different brands, with different qualities, consistent in themselves and having different purposes.

Each link in the chain also has a greater or lesser degree of **monopoly**. This is obviously particularly important in procurement: competition may be used to the purchaser's advantage, monopoly to the supplier's.

One major factor differentiating electronic from printed information is the **shift from product to service**. With printed information, much labour and cost are tied up in producing, distributing, storing and handling a physical product: books, serials, even CD-ROMs. With online electronic information, libraries and other intermediaries generally only provide **access** to information held in a remote location, a service not a product. It is worth noting that this shift follows a general trend, as companies and public bodies outsource more and more activities.

2.1 Creation

Creation is a familiar concept. Creators may be authors or compilers, directly employed by publishers, or independent agents.

The creator is also a monopolist: only Colin Dexter produces his novels. This monopoly, protected by copyright, is then generally transferred to a single publisher.

2.2 Publication

Publication is essentially concerned with the selection and editing of information into consumable form. In one sense it is a form of quality control.

Publishers also package information into usable and buyable units (titles, series, journals), market the product, and undertake, or subcontract, physical production and distribution.

For librarians, authority is conferred in part at least by the imprint – e.g. Oxford University Press or Butterworths. The end-user is more likely to focus on the brand – *British Medical Journal*, or *Who's Who*.

The publisher's monopoly, often transferred from the creator, is also jealously preserved.

For those involved in procurement, the delivery of information in electronic form embodies some important differences from the delivery in printed form.

There is essentially no physical production and distribution of electronic information. There is a physical realisation at the moment of use – as an image on a computer screen or a print-out. But this realisation occurs only at the end of the information chain, not close to the origin, as happens with print. For the rest of the chain we are dealing with **access** to the information, not a physical product containing the information. We, as purchasers, are therefore now buying a service, not a physical product.

¹ Much of this analysis of the information value chain follows the categories suggested in Mark Bide's 1998 study for ECUP+: *Business models for distribution, archiving and use of electronic information: towards a value chain perspective.*

2.3 Aggregation

One may define aggregation as: bringing together in a coherent collection disparate information sources. Clearly this is core territory for the information professional, now increasingly supported by the procurement process and the expertise of procurement professionals, who are introducing greater regulation and management into this process and increasing value for money for their institutions.

Libraries confer authority by virtue of selecting material. Users perceive a certain warranty of fitness for purpose if a book is on their library's shelves. Libraries also have a perhaps unrecognised near monopoly on such aggregations of printed information. There are few alternatives, except perhaps a bookshop.

It is important to note in this context the accent on the physical product. Much of a traditional library's work deals with acquiring, processing and handling these physical products.

With electronic information, there is no physical product to acquire or handle. The role of aggregator may therefore move elsewhere in the supply chain, to the publisher or intermediary such as the serials agent. There is also a trend to 'virtual' aggregation, with services such as CrossRef, where the articles of major serials publishers are linked, while remaining on servers run by the publishers themselves.

Libraries' collective near monopoly, evident for printed information, is therefore lost: users need set foot nowhere near a library to have access to aggregators' sites; they simply need a network connection.

2.4 Access

Facilitating and controlling access to aggregated printed information is again core territory for libraries, needing little explication. Libraries here too have a perhaps unrecognised near monopoly on providing access and the intellectual tools that support it.

Providing access to electronic information is however fundamentally different.

One prerequisite is a robust IT infrastructure to deliver the information. In the UK this infrastructure is well established in academic libraries and, following substantial investment, widespread in the public library sector.

Libraries are fast losing the monopoly on access: the majority of our users may soon be able to connect to information resources more easily from their living rooms than from a terminal in a library.

One can also foresee existing providers of online services offering alternative public information services too. The local Tesco supermarket might offer community information, Virgin prices of stocks and shares. Why should our users move from the comfort of their homes to use our connectivity? Why, even, should they connect to a public library website when a commercial website they use frequently fulfils their perceived information needs?

Libraries' collective near monopoly on providing and facilitating access to information is therefore lost. However, authority is also diluted. How far can one trust the information offered as an add-on by a commercial service-provider?

For the time being libraries will retain the authority conferred by their traditional roles as selectors and organisers of information resources. Challenges for the future include linking from sites of high virtual footfall, and delivering commercially produced information to the user outside the library.

2.5 Use

Finally we arrive at the end of the chain and its reason for existence, the user.

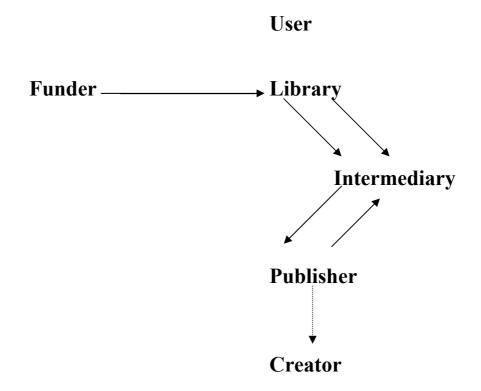
Hitherto we have stressed that, for traditional printed resources, we have been dealing with a physical product. Even with hard-copy resources, however, what we provide to the user is a service – access to the information – not the physical product itself.

It is notoriously difficult to collect reliable and accurate usage data. If we only have a very blunt measure of usage, can we equate apparent usage with value to the end-user? If we cannot, how can we justify our purchasing decisions?

Holding information electronically offers some help here: it opens the possibility of more accurately recording and measuring usage, as expressed in access to and downloads of particular texts or services. It is also possible to envisage systems of payment for such usage, either through actual cash transactions or through users having and exchanging a number of credits. Holding information electronically therefore opens the way to more accurate measures of both usage by, and value to, the end-user.

2.6 Cash-flow

The following diagram illustrates the typical flow of cash in exchange for information; the arrows represent money changing hands.



Immediately remarkable are the discontinuities.

The most glaring is between user and library: there is seldom any direct cash transaction for the flow of information from library to user. Users are almost universally divorced from the direct funders of libraries – universities, local authorities, etc.

This discontinuity, compounded by the difficulty of accurately recording usage, exacerbates the problem of determining whether libraries are actually providing value for money.

There is a further discontinuity – between library and publisher. Most transactions are handled by intermediaries – booksellers or serials agents. Sometimes they charge libraries; generally they take a commission from the publisher. Any discount to libraries comes out of the intermediary's commission. The price is set by the publisher, whose revenue from the transaction is unaffected by any discount provided by the intermediary.

2.7 Challenges for the information profession

As electronic information becomes more widespread, we see libraries losing their monopolies, particularly as far as aggregation and access are concerned.

They do however retain strengths in these areas: the traditional expertise of selecting, organising, and creating tools to access, information are even more applicable and necessary in the electronic environment with fewer barriers to publication and world-wide access.

They also have a role to play both in terms of branding and authority, and in the procurement of information, achieving and demonstrating value for money and fitness for purpose.

However, the profession needs to act now to ensure that it is not bypassed, and its traditional roles and functions are not usurped.

3. THE PROCUREMENT CYCLE

The procurement cycle, briefly, comprises the following elements:

i. Identifying the need

What precisely is required, and on what basis should it be procured – bought, leased, hired, shared...?

We have already alluded to the product-to-service shift with electronic information: the need is for *access* to the electronic information, not *physical possession* of it.

ii. Preparing the specification

The specification is fundamental: it informs potential suppliers of what is required, how and when. If the specification is wrong there is no chance of adequately satisfying the procurement needs.

iii. Finding the supplier

One fundamental question, alluded to earlier but seldom discussed, is: who is the supplier? Traditionally in library procurement the intermediaries – booksellers or serials agents – are regarded as the supplier. However they act only as an interface between the publisher and the library. They may provide some added-value services such as book processing and cataloguing (shelf-ready books), journal consolidation, consolidated invoices, claims. Their prime purpose is to make money, and they have potentially a dual source of income – the purchaser and the publisher. So where do their loyalties lie?

The publishers are the power and the controllers in the supply chain. They decide on what they will publish, the content and format of the publication, and the price to the intermediary and hence the end user. Traditionally they have not been accessible to the library.

iv. Awarding the contract

The deal is concluded. The obligations of the supplier and buyer, based on the specification, are written into a contract. The contract will normally be supplemented by service level agreements and performance measures.

v. Measuring and monitoring suppliers' performance

This part of the cycle is often forgotten or disregarded. However, contract management, the process of ensuring that specification, service level agreements and performance measures are met over the period of the contract (which may be five years or more), is essential if purchasers' requirements are to be met.

With electronic information it is relatively easy to measure usage and value for money, both at the level of the individual library, and at the level of a consortium contract. The impact of this information on buying decisions and the marketplace has yet to be realised.

4. SURVEY OF CONSORTIA AND AUTHORITIES

4.1 Survey of consortia

The following consortia were surveyed: Central Buying Consortium (CBC), Co-East, CUSP, Foursite, LASH (Libraries Access Sunderland scHeme), Libraries in Partnership West Midlands (LIP WM).

4.1.1 What is the membership?

A variety of consortia were surveyed, showing markedly different genesis, geographical spread and reasons for existence. Some exist for purchasing (CBC, CUSP), one because of a common library management system (Foursite), others have the character of a regional agency (Co-East, LIP WM). The number of members ranges from 3 to 25.

Two are cross-sectoral, including HE as well as public libraries. One (LASH) came into being specifically to support learners across the city, with the aim of providing seamless access to learning through public libraries, the FE college and the university.

There is limited identification with regional boundaries: CUSP for instance will not accept members from outside the GOSW region. However, CBC, probably the strongest of the consortia in terms of parentage (authorities rather than libraries are members), commitment and size of contracts, is multi-regional, embracing members from the Midlands, East of England, Southeast and Southwest, with London Boroughs using the contracts too.

4.1.2 What is the decision-making and management structure?

There is a fair amount of commonality in structures, generally a board of heads of service or senior representatives of members, with specialist groups (e.g. content, connectivity) doing the work

CBC has a different structure, similar to that of the HE purchasing consortia: the Libraries Group is itself a sub-group of the wider local authority purchasing consortium.

The legal standing of consortia is an issue, resolved in varying ways. Some are not legal entitites, and hence cannot contract with suppliers. Two main methods of resolving this difficulty emerge. Firstly one authority will act as the lead authority undertaking negotiations and setting up an agreement. Secondly the consortium may negotiate a framework agreement with a supplier; there are then bilateral contracts implementing this agreement between individual authorities and the supplier.

The consortia are eminently democratic; while a strategic steer may be given by chairs and work undertaken by relatively small dedicated groups, decision-making, in terms of what contracts to pursue and which offers to accept, is taken by the steering group as a whole. Such a democratic approach is felt essential to reflect the requirements of, and ensure take-up of contracts by, the membership.

4.1.3 What personnel are involved - dedicated, voluntary, procurement...?

Some consortia have or are about to appoint dedicated full- or part-time staff, but rely as heavily as the others on the contributions, in terms of staff time, of their members.

One consortium expressed the feeling that the employment of one or even a half-time dedicated person would have a great effect: membership contributions tend to be squeezed by other pressures.

Not all consortia involve procurement professionals. Where these are involved, their services tend to be donated by or hired from member authorities.

4.1.4 What contracts are in operation?

The purchasing- or system-based consortia tend to have traditional hard-copy contracts in place – books, A/V, binding, TSO. One reports going to tender for journals.

There are few contracts for online resources – BSI, EBSCO Masterfile, World Book Online. Some trials of other products are current.

One large consortium had tried repeatedly to enter the e-resources marketplace, but with little success. Pricing by publishers had shown little advantage in aggregated consortium purchase. Experience of traditional contracts and the involvement of procurement professionals may have fostered a more realistic and critical attitude to what was on offer. Also, members' focus had been on installing the People's Network and on associated issues such as staff training.

There is an awareness of being reactive. The BSI contract for instance arose from an approach by the intermediary, accompanied by the news of discontinuation of the microfiche version. Some consortia feel bombarded by publishers with offers that are difficult and time-consuming to evaluate, and seldom offer value for money. These tend to reflect the publishers' agenda rather than the libraries' requirements. Terms and conditions are generally perceived as being unfavourable to libraries.

Two interesting strategies are developing:

- CUSP is developing a standard specification for services. They will define what is required, then approach publishers.
- Co-East has developed a Content Strategy and enshrined it in a document to be published on its website.² The document outlines the strategy and the criteria for selection. It also contains an online questionnaire, which potential suppliers are expected to complete rather than cold-calling.

There is an awareness of the implications for hard-copy budgets of contracts providing electronic resources. The electronic contracts tend to be more expensive than any hard-copy near equivalent.

4.1.5 How are the contracts managed and what problems are there?

As noted above in §3, contract management over the whole period of an agreement is essential to ensure delivery of what is promised, but may often be ignored by purchasers.

The consortia with traditional hard-copy contracts generally show an awareness of the need for contract management, holding structured review meetings every 3 or 6 months. This tight contract management, involving both detailed feedback from member libraries and regular review meetings with suppliers to monitor and improve performance, is generally associated with continuing involvement of purchasing professionals.

However there is little evidence of management of online contracts. This is no doubt partly due to the newness of the contracts. However there were some disturbing comments, such as "we found it difficult to get into dialogue with the new customer manager".

There is however an awareness of the difficulties that may arise in the course of contracts for electronic resources: missing or changing content, downtime, access problems etc. These difficulties are additional to the usual vagaries of the hard-copy marketplace, with changes in ownership, staff, location...

Such medium-specific issues, combined with the newness of the resource and the arrangements for access, the intangible nature of electronic provision (one is aware of a day's newspapers not arriving in hard-copy) and complex licence terms, suggest that the contracts need careful management.

There is some evidence of the difficulties of the cross-sectoral approach. One consortium had a contract negotiated and led by a university. The non-HE members felt that their usage of the contract was low, and the FE college was believed to have pulled out as a consequence.

It was nevertheless felt that there were common content requirements across the sectors, for instance for local history and archival materials. Such materials however may well not be the subject of procurement but of local cross-sector/domain production.

4.1.6 What issues and concerns do member libraries have regarding e-resources?

The main issues raised were:

- remote access i.e. access from the home or office;
- limits on the number of concurrent users were felt to be an impediment to the aim of providing access for all;

² See <u>http://www.co-east.net/working_groups/content/</u>

- cost, with electronic resources held to be more expensive than hard-copy;
- licence terms were felt to be confusing when trying to predict cost, often depending on one or more of usage, location and size of population;
- space for terminals in branch libraries;
- continuity of content;
- the level of intellectual access was sometimes felt to be a problem, with interfaces and search methods geared to the specialist or academic user rather than to the public.

Authentication was felt by some to be an issue, not by others.

Staff training had been an issue in the past, but was no longer felt to be. It was noted that training the user may be a part of the educator role in Advanced ECDL.

The possibility of additional management information was welcomed.

4.1.7 What would you like to see in the future in terms of e-content, and how should it be delivered?

Types of content sought were as follows (the order does not imply ranking):

- Reference materials and directories;
- Newspapers;
- Legal sources;
- Business information;
- Official publications;
- Advice products;
- Resources, particularly bibliographic, for library staff;
- Lifelong learning materials.

It is worth noting that only two consortia mentioned journal content.

There was strong support for the idea of a core electronic reference collection with a single interface.

Many consortia stressed that the desired resources were not necessarily all commercially produced. Some, such as learning materials may be produced to be free at point of use (e.g. the NOF-Digitise materials, in-house digitisation programmes). The production of cross-domain materials in line with cultural strategies was noted.

As regards delivery, a number of points were made:

- Delivery should be both remote and through libraries;
- Authentication must be as easy as possible (e.g. by library ticket number);
- One interface/search engine for all content was seen as the ideal; failing this a small number of large databases (e.g. EBSCO Masterfile) was preferred;
- The level of intellectual access must be tailored to the majority of users, and take account of increasing remote access;
- Full attention must be paid to social inclusion;
- Customisation by the individual library or consortium would be possible, but a standard off-thepeg product was preferred.

Mention was also made of re-purposing content and delivery through VLEs/MLEs.

4.1.8 Should e-resources and traditional procurement be co-ordinated, and if so how?

Local/regional consortia are seen to work very well for traditional hard-copy resources. They tend to have loyal and hard-working members, supporting well established contracts with large demonstrable benefits to their authorities. Given the long experience of such consortia, their place in traditional library procurement and the interdependence of print and other media, co-ordination of procurement was strongly supported.

The consortia with no hard-copy contracts do not co-ordinate activities with traditional consortia, despite in many cases overlapping memberships (see the introduction to §4.2 below).

There was a concern that e-resources and hard copy tend to be placed in separate boxes. A holistic approach was felt to be essential: the publishers, the information and the needs of users are common; only the medium is different

The lack of a national dimension or strategy following the demise of EARL was lamented repeatedly. Lack of the national dimension, and an appropriate national decision-making structure were felt to have inhibited local and regional action. A national approach to content was felt to be the natural complement to the national approach to the network.

4.1.9 Are there licensing issues?

Licences were characterised as a minefield, with too many issues to detail. There was generally felt to be a lack of expertise and knowledge, as well as resources, in individual libraries or consortia, to fathom the many and arcane issues of the multiplicity of licences offered by publishers and intermediaries.

A single national model licence would be universally welcomed by libraries and consortia.

4.1.10 Are there technical issues?

Authentication is seen by some as the key issue. Consortia demand flexibility from suppliers to enable individual authorities to select the approach appropriate to their circumstances.

The novelty of the arrangements to local authority IT departments is seen as a challenge by some.

Speed of delivery through modems is an issue for remote access and for some libraries.

Replacement strategies for the new equipment were starting to be a concern.

4.1.11 Other issues and concerns

There is a sense of frustration that little progress seems to have been made with regard to e-resources. This is seen as due in part to the lack of strategy and awareness on the part of publishers and intermediaries. It is felt that publishes do not know how to sell e-resources to the sector, and the sector does not know how to buy them.

Transparency of pricing and the difficulty of assessing the costs and value of the deals on offer were noted as an impediment.

The additional costs, in terms of both price and staff commitment, of e-resources were mentioned often.

Standards for content and delivery were mentioned by one consortium.

4.2 Survey of library authorities

Four library authorities were interviewed: Blackburn, Bristol, Croydon, Norfolk. Knowsley responded to a questionnaire.

Responses indicated that the NETBase survey is accurate in giving a flavour of typical holdings, but may underestimate the extent of subscriptions to online resources. The preponderant medium for digital resources is still by far the stand-alone CD-ROM.

There is evidence from the survey of consortia that libraries may be members of multiple consortia. Sunderland for instance is a member of LASH (which has an agreement for EBSCO Host), but also uses Know UK through an agreement by the Northern Chief Librarians Group, and book contracts negotiated by purchasing officers in the Northeast of England.

4.2.1 What e-resources do you subscribe to now?

Three groups emerge:

• Some libraries have no online subscriptions, perhaps due to technical difficulties, but as many as 60-100 CD-ROMs. The latter will often be stand-alone, available in a central library.

- Many libraries have a handful of subscriptions, typically to newspapers, standards and a bibliographical database.
- A third group has more extensive subscriptions, including legal and business resources.

4.2.2 What are the selection criteria?

Selection criteria are varied.

One authority links resource provision very much to education, particularly Key Stages, to lifelong learning and to information skills. This library authority also offers a variety of information and IT skills courses to its users, and is investigating joint provision with local FE colleges.

Others cite the Co-East criteria, which were as follows:

General Requirements

- Material that is predominantly UK sourced;
- Material which is regularly updated and where date of updates is clearly visible to end-user;
- Clear and timely information on product or content changes with option for termination and/or refund.

Technical Requirements

- A web-based subscription;
- Access through IP address;
- Access via username and password;
- Unlimited access;
- Clear user interface and straightforward searching options;
- An interface which is accessible to Visually Impaired People (VIPs);
- Ability for each partner to retrieve meaningful usage statistics;
- Remote access with user authentication.

Support Requirements

- Free helpdesk for product support;
- Free access to promotional material, tailored to Co-East's needs;
- Free user education sessions for selected library staff.

Price / Contract Requirements

- Transparent costs for the product and clear pricing structure;
- Ability to synchronise with existing subscriptions;
- Invoices to individual partners;
- Renewal notices;
- Information on any restrictions on libraries supplying the content to library users;
- Information on any restrictions on libraries or library users printing the content;
- A modular approach to title selection.

One authority cites its Stock Management Policy as including the following:

- "...should satisfy the needs of users actual and potential, and be flexible enough to be adapted in the light of changing information needs and new information sources."
- "...An increasing importance will be placed on electronic resources of information from databases and CD ROMs. When evaluating these resources at selection, consideration will need to be given to service wide information needs and resulting networking and licensing needs since this may have an impact on the final purchase price."

One authority cites the main criteria as:

- price/value for money;
- speed and reliability of database;
- quality-assured content from authoritative sources;
- suitability to type of enquiries received in our libraries.

One authority felt there was a danger in treating e-resources separately. They should be covered in stock management policies, and overlap with printed resources carefully managed.

4.2.3 How do you make the resources available?

The common approach is to make links, grouped by subject, from the library website to the resources. One authority routes these through the CD-ROM server, either on the web or as networked CD-ROMs. Another notes that e-resources do not appear in the general catalogue.

Two authorities note that they authenticate access to online resources by IP address.

Use of a WAN/LAN is general.

Most authorities explicitly aim to make resources available through branches as well as centrally. One notes that its online business resources are not provided through the branches; it is not clear whether this is from financial considerations, lack of expertise, or lack of demand. Others note that availability in the branches is limited.

One authority cites a possible technical solution to the problem of remote-user identification.

4.2.4 What is the take-up?

There is a variety of approaches to gathering statistical information on usage, but a general impression that little such information is available.

Some use only observation ("queues at peak times") and service providers' statistics. Others count bookings of machines and hits on the proxy server.

Service providers' statistics are used at renewal time; subscriptions have been cancelled because of low take-up.

Most resources are judged to be well used, but there seems little firm statistical or comparative basis for this judgement.

Low take-up is blamed by one authority on insufficient marketing.

A number of authorities cite system-based improvements in prospect for the collection of statistics.

4.2.5 Are there technical issues/problems (passwords, IP addresses...)

Problems cited include:

- In services not providing IP-address authentication, staff have to log users on;
- Use of proxy servers may cause problems the service provider may be concerned about unauthorised access and concurrent usage;
- Frequent changes of IP-addresses, with no notification by corporate IT department;
- Inability to restrict access to only library PCs (once through the firewall, the whole authority has access; the library bears the cost);
- Networking;
- Access problems due to filtering software;
- Long-standing access problems associated with IP addresses are reported, but seem to have been resolved by one authority;
- Lack of support from commercial providers (of networks and resources).

Numerous technical problems with CDROM networks are also cited: the online medium is not necessarily more problematic than any other.

4.2.6 Are there skills issues?

Staff

Difficulties are cited in familiarising staff with services available. A system of 'trickle-training' is noted by one authority.

The improved level of expertise as a result of NOF funding is noted.

Users

Some point-of-use documentation is produced; many authorities rely on service providers' documentation and online help. One authority observes that most users ignore the documentation.

The diversity of interfaces and search engines, and the level of expertise assumed, are cited as impediments to the general and infrequent user.

An increasing level of IT knowledge and sophistication amongst users is noted.

Authorities are increasingly providing IT and information-skills training for their users. One library authority has developed a wide range of courses in conjunction with the authority's lifelong learning office, and is now investigating the possible application of Netskills materials.

Outside agencies such as the LSC have also provided skills training.

4.2.7 What content would you like to make available?

The wish-list, unranked, includes:

- Wider subject coverage literature, languages, genealogy, science;
- Business resources;
- Reference works;
- Careers resources;
- Learning materials;
- Local studies and heritage;
- Teenage products;
- Basic skills packages.

Materials to support the e-government agenda and "BIDS-type" services (i.e. databases and electronic journals) were also mentioned.

One authority wishes to extend provision to e-books and e-journals "once the price and access conditions are right".

4.2.8 Other issues and concerns

The prohibitive cost of some services and the variety of pricing models are seen as problematic.

A mismatch between users' capabilities and expectations and the interfaces to resources was also cited.

4.3 Summary

The most striking feature of both the NETBase and the current surveys is the low incidence of online e-resource provision. The CD-ROM is still the dominant digital medium. E-resources are still seen as novel and apart, not yet integrated with traditional provision (e.g. not appearing in the general catalogue).

There is also a general feeling of powerlessness, lack of direction, and of being reactive.

I offer below some generalisations based on the results of the survey and supplemented by personal knowledge.

4.3.1 The Consortia

There are a number of very strong purchasing consortia of a geographic, but not necessarily regional nature. These tend to have large and well supported contracts for traditional library materials and functions (books, A/V, binding), which are tightly managed. Procurement professionals may be involved at all stages.

There are a number of other consortia with a wider focus than purchasing (regional agency, information planning, lifelong learning). These may have some contracts for e-resources, perhaps as a result of approaches from publishers.

There are a number of consortia with a functional focus, particularly a common library management system.

Libraries may be members of several consortia.

4.3.2 A National Approach

There seems little co-ordination between consortia.

A national approach to a strategy for e-resources was felt desirable by both consortia and individual authorities.

There was a general feeling of waiting for something to happen, of the problems of e-resource procurement being intractable, insoluble, or simply too large to be tackled, at the level of the individual authority or even consortium.

It was generally felt that a holistic approach covering both hard-copy and e-resources was required.

4.3.3 Content

There was some consensus as to the content required (lists of specific content requirements are given in §§4.1.7 and 4.2.7 above):

- A national electronic reference shelf, with a single simple interface designed for public library staff and users;
- Materials to support lifelong learning;
- Materials that are relevant and tailored to the user (e.g. of UK origin, at the appropriate intellectual level, timely);
- Free and locally produced materials are of at least equal importance and should be integrated with commercially provided resources as far as the user is concerned.

4.3.4 Delivery

There is again some consensus on requirements:

- Remote access, in home or office;
- Flexible but standardised authentication, to allow authorities to choose the most appropriate method(s), but with a common approach across all e-resources;
- Appropriate intellectual access, with as far as possible a common interface usable without documentation remotely from the library;
- Good, standardised management information on usage.

4.3.5 Licensing issues

The following features were generally felt to be desirable:

- A single standard national licence for public libraries;
- Transparency of pricing;
- Affordable prices and value for money.

4.3.6 Some examples of good practice

There was good and professional practice amongst all consortia and authorities surveyed. Three examples that are perhaps particularly relevant to the present stage of e-resource procurement are:

- Contract management CBC;
- Development of a standard licence/specification CUSP;
- Transparency of content strategy Co-East.

5. EMERGING PROCUREMENT MODELS

I shall first discuss the traditional print contract, and a process by which one may decide the appropriate level for the procurement – local, regional, national.

I shall then discuss two e-resource procurement models (JACC and NESLI) that derive from the traditional model.

Two new models follow. UKB/Elsevier Science illustrates the single-publisher agreement. PEAK is an innovative experiment, and is included to demonstrate how the apparently conflicting interests of different elements of the supply chain may be accommodated.

The comments below are critical: they are intended to point up the dangers and possibilities of the new marketplace. They are not intended to be derogatory or carping: all the experiments below are pioneering and deserve our admiration.

5.1 The traditional library consortium print contract

The operation of the traditional consortium contract for printed materials is illustrated by the longstanding, and groundbreaking, Southern Universities Purchasing Consortium's (SUPC) serials contract. Similar principles apply in contracts for other printed materials such as books.

The SUPC is one of seven regional purchasing consortia operating in UK HE. All the consortia follow the agreed National Protocol for Co-operative Procurement. This Protocol is designed to establish the appropriate level for any procurement – local, regional or national – by producing an agreed business case taking full account of the commodity to be procured and market conditions. National procurements are led by one of the regional consortia.

Because of the small number of potential suppliers (only three serials agents of appropriate size) it was decided that procurement at the national level could irreparably damage the marketplace by potentially putting suppliers not selected out of business. Procurement at the regional level was demonstrated both to foster competition and to offer the best chance of maintaining an appropriate number of suppliers in the marketplace.

The value of the contract was approximately £11m per annum. It is based on paper journals with some consolidation services. Pricing is based on publisher's list price, with a discount or handling charge, and total-contract, volume-related discounts. The contract has no effect on the publisher's selling price, which represents typically about 94% of the purchase price. The intermediary has about 6% of the purchase price on which to provide a service, make a profit and give something to purchasers like the SUPC.

The SUPC's structure and procedures encourage and require frequent consultation with members' representatives not only at the strategic but also at the operational level. Professional procurement support acts as the conduit between the libraries' requirements and the intermediary or supplier, providing the commercial focus.

The contract has a detailed specification, which contains performance measures. It is actively managed by a team of librarians and procurement professionals, who hold regular contract management meetings with the intermediaries to review performance, based on library feedback and involvement. Procedures are adapted to improve performance and supplier developments are encouraged.

While the contract is very tightly and professionally managed, there is little measurement of true value for money delivered, represented for instance by journal usage and exploitation by users. There is a concentration on quality of service to the library, but not to the user. There is no impact on the price of serials, determined by the publishers, who hold the monopoly on the information.

5.2 The traditional model applied to electronic resources - JACC

The California State University (CSU) libraries have operated as a consortium for more than 10 years, focusing on building system-wide access to electronic resources to support the core learning and

distance curriculum.³ CSU runs a common curriculum across all its 21 campuses. There is therefore a natural overlap in journal provision. The JACC project team identified 1279 titles that were taken by at least 15 of the 21 libraries across the system. They then approached the market for the supply in electronic form of precisely these 1279 titles.

Key requirements for JACC included:

- A customised database of core titles selected by CSU, not tied to print subscriptions, nor to predetermined bundles of electronic journals packaged by publishers or aggregators;
- JACC e-journal content should be equivalent to print in both content and currency;
- Open access for all authorised CSU users supported by open systems and compliance with Z39.50 for information access;
- Future access assured through vendor commitments to perpetual use and archiving solutions;
- Aggregation of content, content licences and access solutions.

The responses to the tender were revealing, in that no major publisher submitted a proposal. Four candidates progressed to the final evaluation, all intermediaries. The contract was awarded to EBSCO to run for 18 months from June 1999.

There are a number of interesting features of JACC:

- It seeks to replicate precisely in electronic form a collection of print journals.
- It is **customised**, based on a very tightly defined set of requirements.
- It seeks to evade one common problem: the packaging by publishers or intermediaries of the information made available to libraries.
- It takes no account of whether the titles required are already available in electronic form or not.

As in the traditional print model, there has in effect been no attempt to deal directly with the publishers, the monopolists of information. The only competition has been between intermediaries. However, the corollary is that the libraries' position of authority, gained by virtue of selection of the titles, is unaffected.

5.3 The agent model - NESLI

The UK higher education community's National Electronic Site Licence Initiative (NESLI) is an attempt to encourage the widespread usage of electronic journals as replacements for print.⁴ NESLI is part of the Joint Information Systems Committee's (JISC) Distributed National Electronic Resource.

After an EU tender process in 1997 a contract for the NESLI Managing Agent (MA) was awarded jointly to Swets UK Ltd. and Manchester Computing, based at Manchester University.

There were four principal requirements of the MA:

- To represent the UK higher education institutions in negotiations with scholarly publishers for better value electronic journal access deals;
- Handling of orders and payment for titles included in NESLI deals;
- Provision of a single interface for access to the titles included in NESLI deals;
- Research into the use of new technologies such as Digital Object Identifiers.

One very welcome outcome of NESLI has been a standard licence applicable across the sector, although there is always the desire on the part of publishers to insert their own pet conditions.

NESLI was at the start funded by some JISC pump-priming, but it was expected that the Managing Agent would become self-funding. The MA would therefore rely, as any serials agent does, on discount from publishers for its income.

³ For a discussion of JACC see: Leigh Watson Healy, 'New bottles for old wine? California State University initiates an electronic core journals collection', *Educom review* 34(3) (1999). Further information can be found on the CSU website at: <u>http://www.csuchico.edu/lacq/jacc.htm</u>.

⁴ Details of NESLI and a bibliography of articles may be found on: <u>http://www.nesli.ac.uk/</u>.

This reliance of course raises the question of whose agent the MA actually is - the publisher's or the library's – and exposes an inherent conflict of interest. What is the incentive for the MA (a commercial company) to negotiate the best deals for the HE community when this could reduce its income?

Publishers are monopolists; negotiation with them is therefore a very difficult procurement and needs the skills of procurement professionals. These were completely absent from NESLI as first structured.

There was also no co-ordination with the existing procurement consortia with large traditional hardcopy contracts. The initial enforced switching of payments away from existing contracted agents to the NESLI MA is now resulting in the potential loss of volume-related discounts on hard-copy contracts.

The MA's contract is about to end and JISC has listened to the sector and is taking steps to remedy the shortcomings of NESLI's first incarnation.

5.4 New Models

5.4.1 UKB and Elsevier Science

In June 2000 the UKB (a consortium of Dutch university libraries, the Koninklijke Bibliotheek and the library of the Koninklijke Nederlandse Academie van Wetenschappen), signed a five-year agreement with Elsevier Science.⁵

The purpose of the agreement is twofold:

- To provide the members of UKB with electronic access to the full text of all Elsevier Science journals;
- For UKB and Elsevier Science to work together to experiment with ways of providing scientific information through the use of information and communication technology.

Pricing features of the agreement include:

- The universities will, from 2001, pay annually an increased amount for access to all the journals compared with their base year 2000 subscription package;
- A discount if information is delivered solely electronically;
- Contributions by both UKB and Elsevier Science to a fund for joint projects to improve the availability of scientific information, including the use of future technology.

There are numerous interesting features here (not least the similarity to terms negotiated under NESLI), although it is obviously too early to evaluate the agreement fully.

Firstly, users of the UKB libraries will have enhanced and electronic access to a wide range of publications. The collection is however not defined by the library or user but by the publisher. The value of this range of access will only become evident over a period, as usage statistics are collected.

Secondly, Elsevier, by means of the annual increases in the base subscription price, have ring-fenced, and may indeed increase, their share of the serials budgets of all Dutch universities and the other UKB members.

Thirdly, Elsevier's apparently privileged position is enhanced by the research projects, which the UKB will co-fund and be involved in. Depending on the projects and how results are disseminated, there is a danger of Elsevier gaining a further competitive edge in the development of new products or services.

The first point, about user-definition of requirements, may seem carping, given that the publisher is making available its entire journal output. However, subsequent points demonstrate that, from the procurement point of view, one needs to be wary of suppliers *et dona ferentis*. Agreements such as this, and those negotiated by NESLI, which guarantee publishers automatic annual price increases, often coupled with no-cancellation clauses, intensify the monopoly of those publishers party to the

⁵ The press release of 27 June 2000, from which the quotations that follow are taken, announcing the agreement is available on: <u>http://www.uba.uva.nl/en/projects/journals-pricing-ukb/pressrelease-ukb-elsevier.html</u>. Information on the UKB is available on: <u>http://www.uba.uva.nl/en/projects/journals-pricing-ukb/policy.html</u>.

agreements to the detriment of other publishers. They also inhibit the freedom of choice of libraries and users.

There is a further danger, particularly in academic libraries. At the end of the period of agreement, the publisher is in an enviably strong position when negotiating a continuing agreement. For any university there will be a number of 'must-have' titles in the Elsevier Science portfolio. Users will also have had unlimited access to all the other titles over a period of years. When offering a new agreement, a publisher could therefore increase its prices at will, and offer no alternative but a return to print subscription (often cancelled to take advantage of the discount). The library would have little choice but to accept the new terms, and cancel the titles of publishers with which it has no such agreement.

5.4.2 PEAK

Pricing Electronic Access to Knowledge (PEAK) is a trial in electronic access, pricing and bundling by the University of Michigan and Elsevier Science.⁶ It provided access to approximately 1200 Elsevier Science journals for a period of 18 months to 12 campuses.

PEAK offered three access models:

- **Traditional subscription** Institutions and individual users can buy unlimited access to a set of articles that correspond to a print journal title.
- Generalised subscription Institutional users can buy unlimited access to bundles comprising any 120 articles from the entire database of priced content. Articles are selected after the fact of subscription and may be accessed by all authorised users at the institution.
- Per article Individual users can buy limited access to a specific article for a fixed price.

PEAK is a most interesting model for almost the whole of the information chain: to the publisher it offers some degree of stability of income; to the library and its patrons it offers flexibility of collection and selection; it also offers the possibility of devolving purchasing decisions to the end-user.

As far as the publisher is concerned, the two subscription models replicate, or are at least similar to, current pre-payment practice. Publishers therefore have the prospect of some guarantee of stability of income in what would probably be a transition to a completely different payment structure. Moreover, the purchase from the publisher of individual articles for personal use would potentially divert an income stream from intermediaries, in the form of document delivery services, to the originating publisher

As far as the library is concerned, spending is, as now, limited by budget rather than driven by usage. However, at the same time, there is a great degree of flexibility in the selection of material, which should allow libraries to provide, within budgets, what their users require, rather than what is offered in publishers' bundles. The traditional subscription model is similar in effect to JACC, facilitating the purchase of core 'cover-to-cover' titles. The generalised subscription model breaks the tyranny of the title, allowing libraries to build the eclectic collections their users require. Publishers would retain their position of authority, through the editorial process, but the importance of branding inherent in the serial title would diminish.

If extended to encompass other publishers, the model would provide a completely new way of selling and buying information, suited to and enabled by the electronic medium, and not adhering to patterns of hard-copy commerce.

5.5 Conclusion

The above models illustrate some of the current thinking and practice, and show both advantages and pitfalls.

The PEAK model is especially interesting : it demonstrates that, with a little ingenuity and a willingness to experiment, it is possible to develop innovative modes satisfying both sides of the supply equation. Now is an apposite time to develop such a model tailored to public libraries.

⁶ Details of the PEAK experiment may be found on: <u>http://www.lib.umich.edu/retired/peak/</u>.

6. ISSUES

6.1 Advantages of consortium purchase

6.1.1 Price?

There is a general feeling amongst those surveyed, and in the sector generally, that consortia, by negotiating with publishers, will be able to obtain much lower prices for e-resources than individual libraries.

This is not necessarily the case: discounts have been available because of competition amongst the suppliers (hitherto always intermediaries); publishers are monopolists.

Consortia have been able to negotiate lower prices for books following the demise of the Net Book Agreement. However these savings have come from the margins allowed to intermediaries (the library suppliers) by the publishers. There are signs, at least in the academic sector, that these discounts are set to decrease, as publishers reduce the margins they allow the intermediaries, and as the number of intermediaries, and hence competition, decrease.

Discounts on serials negotiated by the academic library consortia, however, have been generally low, counted in 1/2% points, despite the high volumes of business (over £10m p.a.?) on offer. The margins for the intermediaries are themselves low, and decreasing.

Publishers will not be willing to enter agreements that decrease the revenue they get from the sector. Unless there are compensating gains elsewhere, why should they freely enter agreements that will directly and adversely affect the all-important bottom line?

There is evidence of this attitude across the sectors.

It is said for instance that newspapers were withdrawn from the Gale agreement because publishers feared sharp decreases in their CD-ROM revenue.

In the academic sector national deals (e.g. by UKB outlined in §5.4.1 above) are often tied to the value of existing print subscriptions: a small discount may be allowed, but annual cost increases factored in. What academic libraries generally gain under such deals is electronic access to the publisher's complete portfolio of content.

Some benefits are seen, for instance in reduced ILL costs. However there is a major danger in such "all-you-can-eat" deals. At the end of the agreement's term, the publisher will be able to offer a stark choice: pay a hugely increased subscription or go back to print. Users' requirements (must-have titles) will generally force academic libraries to take the first option, with potentially disastrous consequences for other budgets and publishers.

6.1.2 Other

There are however other advantages apart from price.

Negotiations with suppliers and the management of contracts are time-consuming and require specialist skills. Savings and efficiencies will result from aggregation into consortia.

Suppliers will be more willing to tailor interfaces, for instance, for a consortium than for an individual library.

Direct and hidden costs will be shared across the membership.

6.2 National, regional or local?

There is no magic formula to determine which level of procurement or action is the optimum. Rather, each business case must be judged on its merits, taking account of the product to be procured and market conditions.

6.2.1 National

Procurement at the national level may not provide the best deal in the long term, especially in markets where there are few potential suppliers. The case of an actual hard-copy serials contract was discussed in §5.1 above. A national contract awarded to one or two agents might well have put the others out of business, and damaged purchasers' interests in the medium and long term. Letting five smaller regional contracts at intervals (a revolving door) enhances competition and keeps suppliers in the marketplace.

National deals with monopoly suppliers may be particularly dangerous, as outlined in §6.1.1 above.

This is not to imply that nothing should be undertaken at the national level, simply that the business case must be carefully considered.

Several national initiatives, bringing far-reaching and quite immediate dividends, are suggested by an analysis of the results of this survey:

- A national forum of consortia for deliberation and decision-making;
- A national strategy for procurement (uniting print and electronic);
- The development of a single standard national licence for e-resources for public libraries;⁷
- The specification and procurement of a single standard interface and system of authentication for public library users.

The above would go a long way to reducing the feeling of powerlessness and lack of direction currently endemic in the sector.

6.2.2 Regional and local

As noted in §4 above, there are strong regional/local consortia, with loyal and committed memberships, delivering complex contracts with large savings and benefits. A particular strength is their democratic nature. Most seem adept at keeping close to their roots and reflecting the requirements of individual authorities; this may become problematic when operating at the national level.

Most consortia operate without significant overheads in terms of dedicated staff, offices etc. The use of an individual member as lead authority for a particular procurement is common practice.

Consideration should be given to replicating the models and utilising existing strengths and experience at the national level. The HE regional consortia illustrate how national strategy and action can be developed and carried on, by means of a decision-making forum and protocols, without instituting a national body. The problem of remoteness from grass-roots opinion and requirements is also largely avoided. National-level procurements are led by individual consortia on behalf of the others.

6.3 Creating competition between monopoly suppliers: the National Electronic Reference Shelf

The effects of dealing with monopoly suppliers have been discussed above. The following suggestion is offered as an illustration, arising from opinions expressed during the survey, of how competition might be created and demand satisfied.

It is based on the premise that the purchaser should specify her/his requirements (and set his/her budget), then invite the market to satisfy them, rather than allow the supplier to determine what the purchaser may buy and on what terms.

One requirement expressed in a number of interviews was for a national electronic reference shelf, and a single interface appropriate to users of public libraries. A means of both satisfying this demand and creating competition would be to initiate a national procurement for:

⁷ One example - the JISC/Publishers' Association model licence – may be found at: <u>http://www.ukoln.ac.uk/services/elib/papers/pa/licence/Pajisc21.html</u>. A public library example may be found at: <u>http://www.licensingmodels.com/</u>.

- (a) A set of reference works (an encyclopaedia, an English dictionary, translating dictionaries, an atlas/gazetteer...) with defined characteristics (British English, regular updating, authoritative...) under common licence terms;
- (b) A single interface appropriate for use by public library clients.

Publishers would be invited to tender for the supply of one or more individual works, quoting prices individually. For the sake of illustration the result might be *Encyclopaedia Britannica*, the *OED*, Harrap and Collins translating dictionaries, the Encarta atlas.

The procurement of reference works would be repeated say every two years, and titles substituted on the basis of repeated competition.

Thus continuity would be maintained, through the single interface; quality would be assured through contract management; prices would be kept down through regular competition.

Libraries would take back the initiative from the publishers, and fulfil their traditional role as aggregators, conferring authority on the e-resources by virtue of selecting them.

6.4 Cross-sectoral collaboration

Cross-sectoral (and cross-domain) collaboration is espoused by a number of consortia and authorities, and produces major benefits. However, no benefits are as yet evident in cross-sectoral purchasing collaboration.

The content required in general by academic (and NHS) libraries is very different from that required by public libraries. Publishers and intermediaries, and the commercial regimes under which they operate, may also be entirely different.

The level of skills in and approach to information-seeking and –use may also be very different in the academic and public library user. The interfaces and tools required will therefore tend to be quite different.

There may be areas of general or specialist provision (e.g. reference works, A/V) where common approaches could be undertaken. However, one consortium points to conflicts between the requirements of even its public library members from an A/V contract: some libraries require general leisure videos, others specialist music.

The most fruitful area for collaboration seems to be the flow of knowledge and information between the sectors.

There may be more common ground between public libraries and FE colleges, in terms of materials purchased and interface requirements.

6.5 Separation of electronic from hard-copy resource procurement

In higher education there has been a *de facto* divorce of the procurement of e-resources (by CHEST, NESLI) from the procurement of hard-copy resources (by the regional purchasing consortia). The deleterious financial results in prospect have been noted in §5.3 above.

There was a strong steer from the consortia and individual authorities survey that this should not be repeated in the public library sector.

The information and publishers are often the same, regardless of the medium. The same newspapers for instance are available in hard-copy, CD-ROM, microfilm and online form.

Electronic resources currently on offer tend to be more expensive than hard-copy near equivalents. Consortia and authorities are wary of the implications for already squeezed budgets.

6.6 Possible principles for e-resource procurement

From the analysis in the previous sections, it is possible to propose some principles that might be adopted in order to transfer the initiative from the publisher and provider to the library:

- The involvement *ab initio* of procurement professionals with an understanding of the information marketplace;
- Standardisation, of licence, authentication and interface;

- Consultation with librarians and users when specifying requirements and monitoring and managing suppliers' performance;
- Specification and selection by users, not by suppliers, of the content to be taken;
- Unbundling both of print and electronic forms and of electronic titles;
- No automatic annual price increases for services;
- Competition at different levels: between publishers on content and price of content; between intermediaries on facilitation and price of access;
- Negotiation on price of content with publishers, on price of access/retrieval and e-commerce with intermediaries.

7. CONCLUSIONS

Returning to the brief given by Resource, the following conclusions emerge:

7.1 What works well?

- The existing traditional purchasing consortia, mainly with hard-copy contracts.
- The involvement of purchasing professionals.
- The skills-levels of staff are generally felt to be good.

7.2 Management models

- The existing traditional purchasing consortia have strong management models, which provide strategic leadership and are responsive to members' needs.
- There is good management of traditional print-based contracts (e.g. by CBC), but not of eresource contracts.
- A range of models has been instituted in other sectors and abroad; all have both strengths and weaknesses.
- Monopoly deals with a monopoly supplier have initial attractions, but show no evidence of costsavings, and may be problematic in the medium to long term.

7.3 What is problematic?

- Consortia tend to be *ad hoc*; they do not follow logical boundaries (e.g. Government regions); libraries may be members of several consortia.
- Consortia lack dedicated staff.
- There is little take-up of e-resources.
- Multi-sectoral procurement is problematic.
- E-resources are seen to be expensive; pricing models are not transparent.
- There is s a lack of standardisation for licences, interfaces, authentication, statistics of usage.
- Communication with local IT departments.

7.4 What concerns do staff have?

- Lack of a national dimension and strategy.
- Hard-copy and e-resource procurement and strategy should not be separated.
- Lack of expertise in individual authorities and consortia, particularly where licences are concerned.
- Being reactive; not taking control of the procurement by specifying requirements.
- No price advantage is evident as a result of consortial negotiations.
- E-resources are very expensive.
- Licence terms and pricing models are confusing.
- Inappropriate interfaces are provided.
- Technical issues concerning authentication and networking.

7.5 Future developments

- Development of a national strategy.
- Institution of a national forum of consortia for deliberation and decision-making.
- A standard national licence (see CUSP's developing standard specification).
- A national electronic reference shelf with a single interface.
- A common interface to all e-resources.
- Both commercial and free content should be made seamlessly available.
- Flexible but standard authentication.