Executive Summary

Introduction

The data presented here comes from three focus groups held with Information Services (IS) staff at the University of Birmingham, as part the BUILDER Hybrid Libraries project. The focus groups investigated the ways in which the development of the hybrid library will impact on the jobs and roles of Information Services staff, from their own perspectives.

The University of Birmingham Information Services (IS) is a converged service, consisting of the library, computing services and media services. It serves a large, ‘red brick’ university with an emphasis on research as well as teaching.

Three focus groups were held with the three key categories of Information Services staff (academic-related, professional and information assistants) and a total of 24 staff were included in the groups.

Five key question areas were defined and used to spark off discussion within the groups. These five areas were:

- Services
- Teaching and learning support
- Research support
- Roles and skills
- The library as a place

Key findings

Services

Discussion under this heading centred on the kinds of services that could usefully be transferred to electronic or networked systems.

Induction training for students was one area where most staff felt electronic delivery would be useful. Induction is very staff intensive, is often carried out at an inappropriate time for students and is needed on and off throughout a student’s progress through a course of study, as he or she needs to access different types of materials. A Web-based induction package was felt to be the most effective way of delivering this training.

Inter-library loan processes could also usefully be transferred to an electronic system, using electronic mail rather than paper. Delivery of inter-library loan materials using electronic media was considered useful for some types of document and for some users, such as academic staff in schools where IT was both available and well-used by staff.
Self-ordering of books as an electronically delivered system met with mixed views. Some felt that many academic staff would welcome it and are already purchasing materials via the Web. Others expressed concerns that the Acquisitions department of Information Services would be by-passed. This could entail purchases not always being cost-effective. There were fears that it might lead to redundancies in Acquisitions, and that it could lead to problems concerning which budgets paid for which resources and who managed the overall budget for books within each School.

Short loan collections. Again different views were held on the usefulness of transferring short loan collections to electronic media. Some felt that this would reduce a number of problems both for students, Information Services staff and academic staff. Others felt that it might simply transfer the ‘crisis’ point from accessing printed materials to accessing computers. Obtaining copyright permissions, particularly for students requiring access to digitised texts off-campus, were also raised as significant stumbling blocks.

Electronic journals were thought likely to slowly increase, but for the moment it was most useful to stay with printed journals, or printed and electronic subscriptions running in parallel. Again, issues of access to computers were raised as did the problem of agreeing access to archives of electronic journals when a subscription is terminated.

This first area of discussion made up a significant proportion of all of the focus groups’ time and raised many of the concerns about the development of the hybrid library. These concerns were aired in all the following areas of discussion too and are presented here as the final section: Concerns about, and barriers to, the development of the hybrid library.

Teaching and learning support

Discussion under this topic centred on ways in which Information Services support for teaching and learning might alter with the development of the hybrid library.

Consensus was reached that the markets in higher education are already changing the support Information Services provides to academics in teaching and learning, as more students study part-time or at a distance, and as fewer students are able to devote their time solely to study. It was felt that Information Services had a wider role to play in teaching students to evaluate materials - equipping them to study using resources from a wide range of media that may be accessed on or off campus.

Concerns were also raised about the ways in which electronic resources-based materials were being developed. Some learning materials were felt to stifle the experience of learning and evaluating materials - ‘spoon-feeding packages’. Other electronic ways of learning involved unstructured searching for materials on the Web. Students were often not equipped for this, particularly in terms of poor searching techniques and in assessing the quality and value of resources they accessed.

The role for Information Services could be in ‘validating’ electronic sources and materials and in teaching students to assess and evaluate resources for themselves.
Research support

Discussion under this topic centred on the ways in which support for research provided by Information Services might alter with the development of the hybrid library.

**Subject specific differences.** There was a consensus that there were different needs across Schools at the University of Birmingham. Printed materials were still very important for research activity in the Arts and Humanities areas, whereas Science-based subjects had more research journals available electronically.

**Serendipity** was recognised as important to researchers in both the Arts and Humanities and in the Sciences, with chance discoveries and connections being made by browsing in printed journals and also by scanning open shelves of printed books.

**Bibliographic databases, citation indexes and current awareness services** were identified as useful for electronic delivery to support research across the subject board.

**Research dissemination.** It was agreed that the hybrid library would offer a diverse range of information sources. It would also create new ways of communicating and disseminating research findings and facilitate discussion between researchers.

Roles and skills

Discussion under this topic focused on the role of Information Services staff in the hybrid library and the skills needed in this new environment.

Roles were already seen to be changing and there was concern expressed that staff did not have the diverse range of skills necessary to effectively carry out these new roles. Some participants perceived the current situation to be difficult and sometimes demoralising.

There was general agreement that the role of the librarian would shift from 'guardian' to that of 'intermediary' and that new roles would focus on quality assuring electronic information sources and informing and training academic staff and students.

It was agreed there would be an increase in the generalist, who would possess a broad knowledge-base coupled with high level communication skills. There would be different roles for Information Services staff in different subject areas. The quantity of work may differ as well, as it was recognised that some Schools may want to undertake the work themselves, employing dedicated teams. This factor prompted concerns about job security, as did the possibility of Information Services being bypassed in an electronic service environment.
There was a perceived imbalance in the skills-transfer between library and computing staff, with library staff getting more benefit in terms of new skills when compared to computing staff.

Training for Information Services staff was essential in order to update skills, knowledge and attitudes across staffing levels. The on-going need for training required investment.

The library as a place

Discussion under this topic looked at the concept of the Library as a place and explored whether this would change in the future.

There was a consensus that the hybrid library was not a stepping stone on the road to the virtual library. The library as a physical space would remain but it would change to encompass new activities, formats and equipment.

There would be a range of uses for the library as a physical space in the future and it would need to support diverse learning and research needs. No individual library could accommodate all these needs and it was envisaged different types of libraries would be needed, or segmentation of existing library space, in order to support the two major activities in higher education of learning and research.

The role of the library as a physical space was seen as important for working and studying, but its future was not guaranteed.

Concerns about, and barriers to, the development of the hybrid library

A number of concerns and barriers associated with the development of the hybrid library emerged from discussions which can be grouped under specific headings.

Costs. There was an awareness of the costs associated with developing new services. Concerns were expressed that models of cost-benefit analysis had not been established. It was felt new services were being developed without appropriate attention to the cost implications at both institutional level and to individual students. The cost effectiveness of electronic short loan was questioned. There were also concerns about the high costs of staff training in the hybrid library environment, particularly for front-line staff.

Infrastructure. There was a consensus that new electronic services would be redundant if the appropriate IT hardware, software and network capability was not in place. The lack of a standardised approach and consistent level of IT hardware and software was seen as a barrier to delivering electronic services as there was such a diverse range on campus that services could be accessed on.

Academic staff. Closer working partnerships were needed with academic colleagues so that the range of materials needed to support teaching and learning in their particular courses could be identified. Improved communication with teaching staff
was needed in order to increase awareness of service developments as this would impact directly on take up of new services in the hybrid library.

**Users.** The hybrid library would require users to possess a range of information and IT skills in order to access materials. It was recognised that in a diverse student population there would be different levels of experience and competencies. The hybrid library environment may not suit all users. Cultural differences needed to be recognised.

**Publishers.** Negotiations with publishers were crucial in order to establish pricing and access models, licenses and copyright permissions for digital resources. Copyright was seen as a major barrier to the development of the hybrid library.

**Institutional.** New information services may cost more money. In a situation where budgets are devolved to Schools at the University of Birmingham this could be a barrier. As Schools are the internal customers of Information Services within the University of Birmingham the development of new services depends on whether Schools are willing to purchase them. There was a tension between Information Services providing centralised services and individual Schools developing their own information services, particularly in IT.

**Conclusion**

Overall, the development of the hybrid library was viewed in a positive way by Information Services staff. The benefits which the hybrid library can bring in order to support the core activities of higher education institutions was seen to outweigh concerns and barriers to its development. However, the difficulties in overcoming these barriers in order to realise an effective operational model of the hybrid library should not be underestimated.

The hybrid library has the potential to impact positively on the services delivered by Information Services staff. However, there was a consensus that printed resources would not disappear, and thus many traditional library operations would continue for at least another five years.
1. Introduction

Three focus groups were conducted with University of Birmingham Information Services (IS) staff. The aim was to ascertain how such staff envisaged the developing model of the hybrid library impacting upon their roles, skills and the services they provide. The hybrid library is on the continuum between the conventional library and the electronic library, where traditional and electronic information sources are used side-by-side in a more integrated environment.

The University of Birmingham Information Services (IS) is a converged service, consisting of the library, computing services and media services. It serves a large, ‘red brick’ university with an emphasis on research as well as teaching.

The focus groups were conducted as follows:

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<tr>
<th>Staffing Grade</th>
<th>Date</th>
<th>Time</th>
<th>No. of participants</th>
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<tbody>
<tr>
<td>Professional</td>
<td>14/09/98</td>
<td>10.30 - 12.00</td>
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<tr>
<td>Academic-related</td>
<td>14/09/98</td>
<td>14.00 - 15.30</td>
<td>9</td>
</tr>
<tr>
<td>Information Assistants</td>
<td>15/09/98</td>
<td>10.30 - 12.00</td>
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Participants were allocated to groups by staffing grades. The aim was to have 10 participants in each focus group, although the numbers attending the Information Assistants focus group were reduced by staff taking holiday and sickness leave.

Clare Nankivell from the Centre for Information Research and Training (CIRT) led the focus group discussions with Andrew Hampson, BUILDER Project Development Officer, acting as scribe. The focus groups were recorded on tape and transcribed.

Each focus group was asked to consider questions covering five key areas in the development of the hybrid library:

- Services
- Teaching and learning support
- Research support
- Roles and skills
- The library as a place

This report analyses the outcomes of all the focus groups under each of the five key areas. Common themes and outcomes arising from the focus groups as a whole have been described and analysed. Individual focus groups have been noted only when there were significant differences of opinion by staffing grade.
2. Services

Which library services currently provided by Information Services could usefully be transferred to electronic or networked systems?

Eg. Short-loan collection, self-ordering of books, inter-library loan delivery, journals etc.

The potential for transferring many current library services to networked systems was recognised. The speed of technological change means that there are continual opportunities opening up to change the way that traditional library services are delivered in order to enhance the service for customers in higher education. However there are barriers to the complete realisation of these electronic services in the short-term.

“More or less everything that we do can be delivered electronically but there are obstructions that mean either we can’t do it or we don’t want to do it.”

[Library Systems Support Staff]

Services with potential for electronic delivery were suggested, including induction tools, a frequently-asked questions service, the development of Circulation Services in terms of self-reservations and self-service issuing. The potential for developing Information Services Web pages was acknowledged in terms of providing a more interactive forum for customers. Site libraries at the University of Birmingham are exploring a new venture of having their own e-mail addresses so customers can contact sites directly and the service implications of this facility are yet to be fully understood.

Information technology training and information handling skills training for users is a very labour intensive service that Information Services currently provides. The potential for providing such training services by putting tailored Computer Assisted Learning (CAL) packages on the Web was suggested.

“At the moment much training is undertaken by Information Services staff. But there comes a time when you need to look at the costs of delivering the training when 15 people attend a free training session, delivered by a professional member of IS staff, over a three hour period. We need to think whether it is more efficient to provide a 20 page training pack to be delivered over the Web which users can print out, and pay for the costs of that printing, and learn for themselves.”

[IT Resources Advisor & Trainer]

Other potential electronic services prompted by the question were explored.

2.1 Self-ordering of books

There was agreement that it would be useful to provide electronic systems for processing book orders. Such a system could make the acquisition process more transparent for academic staff, providing accurate, timely and accessible information
about the ‘state’ of a particular book order in the acquisitions process and precise financial information about book funds.

“Academic staff in the School of Engineering can’t understand why they need to use paper to order books. They are ordering books by e-mail now, but they want an interactive process with feedback on what is available in the book fund.”

[Liaison Librarian for Engineering]

It was identified that the electronic self-ordering of books could be undertaken in two ways: via the library system (TALIS) and via the Web by connecting directly up to a publisher’s Web site and their online bookshop service. However there were concerns about such a service. There was a concern about who would be responsible for, and control expenditure of, departmental book funds. The present situation involves a paper-based process with book orders being sent to Liaison Librarians by a nominated member of staff in academic departments called the Library Representative. An electronic service has potential for academic staff to order books directly from publishers using an entirely electronic process. There was also concern about the impact that such an electronic service would have on the Acquisitions department and what the implications would be for jobs. These concerns were expressed by a Professional grade member of IS staff.

There was a concern about self-ordering of books via on-line bookshops. Suppliers or publishers on the Web may not necessarily supply the most cost-effective materials. Information Services staff based in Acquisitions may know of publishers or suppliers not on the Web who could supply a better financial deal. Users undertaking self-ordering of books would not necessarily know this. There were implications in this statement about the skills of Acquisitions staff and the added value they supply to the process of ordering materials with their knowledge of publishing and the library supply industry. A concern was evident that an electronic service to facilitate the self-ordering of books would mean that customers would by-pass the Acquisitions department, making its function redundant.

2.2 Inter-library loan delivery

There was a consensus that inter-library loan (ILL) services could be usefully transferred to networked systems. There were two elements that formed this potential service development. Firstly, networked systems could make possible electronic document delivery of digitised journal articles to the desk-tops of academic staff. Secondly, inter-library loan processes could be supported electronically, so that customers do not have to fill in paper-based forms but submit an electronic request. Customers could be informed of the ‘status’ of their inter-library loan electronically, particularly if it had arrived or if it was to be sent back to the supplier.

“This is where electronic systems would come into their own as they are very useful as a delivery mechanism.”

[Acquisitions Librarian]
“ILL could be delivered electronically. This in conjunction with databases and catalogues would be useful, as ILL staff are only there to process your request. You have to find the correct information.”
[Information Assistant]

“Some students would like electronic delivery of ILL because the internal mail can be a problem.”
[Information Assistant]

“Notification and communication systems for ILL could be done electronically to notify users if a book was being returned. People are more likely to access their e-mail and this can be from anywhere.”
[Information Assistant]

Liaison Librarians identified some frustration among academic staff that document delivery processes were still paper-based when the technology was available to facilitate an electronic process.

“Academic staff in Engineering can’t understand why they have to use paper-based systems to undertake document delivery. They want to do a search on BIDS and then send the inter-library loan electronically from the desk-top.”
[Liaison Librarian for Engineering]

2.3 Journals

It was agreed that electronic journals were already available in parallel with printed counterparts and that the electronic journal would increase in importance in future. However, it was thought that monographs were more likely to continue to be published in printed form. There was a consensus that:

“There will be a requirement for on-going access to printed resources.”
[Academic-related IS staff]

The shift from the current position of having electronic and printed journal subscriptions in parallel towards only having the online electronic journal would be problematic. The IT infrastructure would have to be in place.

“If Information Services goes for online delivery of journals to save on subscriptions then there must be the capital investment in the IT infrastructure.”
[Professional IS staff]

The issue of having access to an archive was also raised. If a printed subscription to a journal is cancelled then Information Services still retains the back run, but with online electronic journals the cancellation of a subscription may remove access altogether.

There was some debate about whether the usefulness of electronic journals would vary across different subject areas. It was suggested that Science-based subjects
would find such a service more useful but agreement was not reached. The nature of the information in journals was put forward as a reason why electronic delivery was more appropriate.

“I foresee within ten years most journals will be published in electronic format. I don’t think many will still come out in printed form, but I don’t think the same applies to books...It depends on how people use the information actually. If people are looking for a one off article they need as quickly as possible, when currency is important, then electronic delivery is very appropriate.”
[Acquisitions Professional Librarian]

2.4 Electronic short loan

The traditional short loan service was seen as a coping strategy for reconciling heavy demand with limited numbers of texts. It was said to be inadequate for the needs of many groups of students. Loan periods of 24 hours maximum were seen to inhibit use of the materials in short loan.

“Students photocopy material in short loan at the moment. They are not keen on the short time scale of use offered by short loan materials.”
[Lending Services Librarian]

It was agreed that an electronic short loan could solve a number of the problems of traditional short loan collections, including access and availability of high demand materials on reading lists.

“Paper copies of articles are easily damaged and can be vandalised. Electronic services are much more practical when you’ve got heavy demand.”
[Information Assistant]

"Students would really like electronic short loan so they could look at material without having to return it within a short period of time.”
[Information Assistant]

However, there were concerns about the viability of delivering an electronic short loan service. The copyright implications of digitised book chapters and journal articles were raised and how this process would be managed. There would need to be an appropriate IT infrastructure with an adequate number of workstations and laser printers to cope with demand.

There were those who disagreed that electronic short loan was a solution, particularly in terms of cost-effectiveness. It was suggested that such a service would merely shift the ‘crisis point’ away from access to printed materials and towards access to IT hardware across campus.
“I’m very sceptical about electronic short loan. I think books are cheaper. Providing electronic resources can just shift things and mean that students have to queue for IT facilities to read or print out the texts.”
[Computer Officer]

It was recognised that electronic short loan could serve some customer groups well, notably part-time students and distance learners. There was a suggestion that electronic short loan could be part of a range of value added services on offer to students which they could opt into, paying a fee for such services.

“I think we need to look at people and their methods of study. If you were a distance learner you could have a tiered option so you could opt into electronic short loan if you wanted to and pay for that service. It would be like ticking a product box.”
[Liaison Librarian]

However, it was noted that often distance learners are not best served by networked systems because access is restricted to university intranets due to copyright and licensing restrictions.

"But distance learners aren’t always best served by electronic short loan and information delivery. There are examples of projects when distance learners can’t gain access because publishers have imposed restrictions to access on campus networks only, due to copyright and licensing restrictions. There are bandwidth problems to downloading full text screen shots.”
[Liaison Librarian]

Electronic short loan was seen to be ideal for short journal articles and book chapters. However, the use of such material for learning purposes would vary across academic subjects with only some Schools being best served by this approach.

“I think people doing Arts degrees will generally benefit less from an electronic short loan compared to those students doing Social Science degrees.”
[Lending Services Librarian]

It was noted that the process of identifying material to be put in a traditional short loan and electronic short loan needs to be improved, with improved communication and liaison with teaching staff.

"If short loan does become electronic then I think this whole process of managing reading lists and what goes into short loan will need to be re-thought. It'll be like starting at the beginning again.”
[Lending Services Librarian]

There was agreement that increased liaison between academic and library staff was needed to identify what material is put into short-loan and establishing the best way of delivering materials to their students. It was agreed a consistent system needed to be
established for informing library staff about what goes into short-loan. Instead of getting bits of paper from academics saying put this item into short loan for this term, it was agreed there was scope for this process to operate electronically. To actually digitise the process by which material is identified for inclusion in the short loan collection may be more useful than digitising the collection itself.

### 2.5 Barriers to developing new library services

There was a consensus that a number of barriers to developing new electronic services existed and these could be grouped under specific headings.

#### 2.5.1 Barriers: Institutional

There were institutional barriers identified to establishing electronic book ordering services associated with the requirements of University auditing procedures. There were also concerns that publishers may not be able to cope with electronic ordering mechanisms.

#### 2.5.2 Barriers: Users

There was agreement that there were access problems for students concerning electronic information in terms of the availability of IT hardware and also the information and computing skills needed to operate in an electronic environment.

> “We are building these services electronically but are people actually capable of receiving them as it takes a certain level of IT literacy to deal with it? Do they want to deal with it? Do they want to get the information electronically?”
> [Library Systems Support Staff]

There was an awareness of the diversity of the student population and different levels of experience and expectations they bring to university education. International students were identified as a particular user grouping which could find the electronic Web-based information environment confusing and inaccessible.

> “There are cultural problems, especially overseas students who are very people based. Many new UK first year undergraduates want to get the information anonymously via electronic media so there’s a difference culturally.”
> [Library Systems Support Staff]

#### 2.5.3 Barriers: Costs

There was a significant awareness of the costs associated with developing new services. A Computer Officer was particularly concerned that models of cost-benefit analysis had not been established and that new services were being developed without appropriate attention to the cost implications at both institutional level and to individual students.
“It’s very grey because we don’t know the types of cost associated with delivery. Transatlantic lines may not be free in future which could affect online databases. What is useful depends on how much it costs.”
[Computer Officer]

The accessibility of electronic short loan services and on-demand resources to students had to be weighed against the costs that were being passed on to students when printing out resources on laser printers.

“All these services like electronic short loan seem to involve the end-user in additional cost. For a service provider is this justifiable ground?”
[Library Systems Support Staff]

“The costs of traditional library services need to be compared to the cost implications of providing digitised resources. The costs to users also need to be factored in as part of the whole equation. You can’t only look at the costs, or reduction in costs, to the University.”
[Computer Officer]

New information services may cost more money. In a situation were budgets are devolved to Schools at the University of Birmingham this could be a barrier. As Schools are the internal customers of Information Services within the University then there was an agreement that the development of new services depends on whether Schools are willing to purchase them.

“Schools have to constantly justify their expenditure. It may be that Schools will have to pay more money for Information Services in order that a certain level of service is delivered.”
[Liaison Librarian]

“This is a political hot potato. In a survey in one of the newspapers, spending on Information and Computing Services at Birmingham was way down on other institutions. I think you’re right that as the University has moved to devolved budget centres for its own expediency then Schools are reluctant to pay for Information Services.”
[Public Services Manager]

Information Assistants raised the issue of the high costs of training staff in the hybrid library environment, particularly for front-line staff.

2.5.4 Barriers: Infrastructure

The networked Web environment was seen as a possible barrier and issues associated with it would need to be overcome in order for services to operate effectively:

“Is the Web reliable enough? Can they actually find the information within it and is the information focused to what they want?”
[Library Systems Support Staff]
The necessary IT infrastructure needed to be in place. There was a consensus that new electronic services would be redundant if the appropriate IT hardware, software and network capability was not in place.

"As far as space is concerned there is an argument for putting journal back runs into electronic format. But there is the need to provide enough PCs for people to access the information."
[Information Assistant]

Electronic documents delivered in Adobe Acrobat PDF format need laser printers for successful printing to occur:

“There was feedback recently from a user in the Barnes Medical Library where there are dot matrix printers available free of charge. This user was trying to print out an electronic journal delivered in Adobe Acrobat format. The print out was illegible. It’s no use having online delivery unless we have laser printers capable of quality print outs to our users.”
[Public Services Manager]

A Liaison Librarian identified the current discrepancy between the IT equipment available to students and that available to academic staff.

“There is a difference between academic staff, who have access to laser printers and high quality PCs, and students who only have access to low quality IT hardware and resources. Electronic delivery may not be so useful for them. You need to have an appropriate IT infrastructure to support these developments. Also different users have their own systems, configured in different ways, at the School and the personal level.”
[Liaison Librarian]

However, there is also a significant discrepancy between the type of hardware available between academic staff in different Schools. The lack of a standardised approach and consistent level of IT hardware was seen as a barrier to delivering electronic services as there was such a diverse range of hardware on campus that services could be accessed on.

2.5.5 Barriers: Publishers

Obtaining copyright permissions for electronic short loan was seen as problematic, although it was agreed that increased co-operation with publishers and the impact of national initiatives could overcome this.

“I think publishers don’t know what is required by IS staff and the services they want to develop for their users. There is a vast range of information that will need to be negotiated with publishers for electronic access. We need to start with publishers in terms of copyright, licenses and access.”
[Acquisitions Librarian]
However, there was still suspicion about how publishers would react in the hybrid library environment:

“Publishers can charge what they want because they control the information.”
[Academic-related IS staff]

“They want to preserve their profits and license information to restrict use.”
[Professional IS staff]

An Acquisitions Librarian saw publishers as having less control in the developing hybrid library model. There was a need for publishers to react quickly to the new environment and adjust their pricing models, modes of delivery and attitudes to copyright licensing. Otherwise customers in the higher education market could look at other ways of publishing.

"Publishers will need to adjust their attitudes to copyright over the next ten years or academics will start to cut them out and publish on the Internet themselves.”
[Acquisitions Professional Librarian]

2.5.6 Barriers: Centralised services v fragmented services

Library, computing and media services are provided centrally to Schools by Information Services at the University of Birmingham. However, some Schools have opted to develop their own services, employing their own staff, particularly in terms of computing services.

The tension between providing a central, standardised service run by Information Services and the need for individual Schools to provide and administer their own information services, particularly on the IT and networking side was recognised. The diverse range of systems and configurations was seen as a barrier to delivering effective new services from the centralised Information Services to the rest of the University. In order to deliver information services to the University of Birmingham community, particularly electronic services, then standardised IT hardware, software and configurations are needed. However, individual Schools have particular needs and have developed their IT infrastructure at different times and at different rates.

"There's a real sense that things could fragment away from centralised services.”
[IT Resources Advisor & Trainer]

“I think the argument for a centralised approach to information services is valid to ensure access for everybody at a certain level, so ensuring all PCs have Windows 95 across campus for example. There is inequality in access.”
[Computer Officer]
“Academics are individuals and that’s why they are here. They all bring something unique. They want to set up their workstations and networks as they see fit to deliver research and teaching for their subjects and they know how best it is served.”
[Public Services Manager]

2.5.7 Barriers: Service awareness and marketing

Informing the wider academic community of any new services was identified as a major issue.

“There is a problem with the services we offer when people don’t know they are available.”
[Professional IS staff]

“It makes you wonder how often academic staff use information services when they don’t know what services are available for their own students.”
[Liaison Librarian]

However, the development of new library services was seen as a marketing opportunity and a means of raising awareness and the profile of Information Services staff.

“I think it is going to be easier for Information Services to market services to the academic community when services like Electronic Short Loan, delivered to the desk top, are developed. This can only raise the profile of IS.”
[Professional IS staff]

The Assessment of Quality in Education exercises were seen as formal ways of integrating new library service developments.

“There is a pressure on academic departments in teaching quality assessments to prove that they are aware of information services and the range of resources available. IS should use this as a lever to market our services to departments.”
[Academic-related IS staff]
3. Teaching and learning support

*How will the support for teaching and learning be affected, particularly in the context of shifting markets in higher education and the growth in part-time students and distance learners?*

There was an awareness of the new markets for higher education and the particular needs of these user groupings. It was widely recognised that traditional library services do not meet the needs of part-time and distance learners and that support for teaching and learning would need to realign itself with the needs of these growth markets.

“The biggest effect on Information Services will be to educate all staff, and this applies to the university more widely, of the move away from the idea of traditional degrees for which the State pays for towards a quite different model. Traditional library services really make very few concessions to anybody who isn’t a full time undergraduate, living on campus. Mature students, part-time students, distance learners don’t have the opportunity to use all the facilities we have.”

[Professional IS staff]

"The problem for part-time students is they are only in one afternoon per week. Information in printed form isn't always available for them so if it was available on PCs then this might help them.”

[Information Assistant]

There was an agreement that new services delivered over the Web could help to support the learning needs of part-time and distance learners. However, the issue of personal ownership of IT hardware and access to the Internet at home for such students was raised. The possibility that computer ownership could become mandatory for entry to a course in higher education was recognised. Leasing of computers by the higher education institution was seen as one way of avoiding discriminating against students who could not afford a lump sum expenditure on such equipment.

The priorities for delivering teaching and learning materials over the Web would be that they are focused, easily available and current.

“Time on the Web in the University is free but information accessed by students at home over the Web will cost them money and would be expensive if they can only access the Web in the morning. Therefore information provided to students on the Web will need to be focused, easily available and current.”

[Professional IS staff]

Information Services could support these non-traditional students by providing training courses, particularly targeting those inexperienced in IT.
“I think part-time students have their own sets of problems, as they are often older people who are not IT literate. Ironically, they are the ones who, say with short loan, would find electronic services most useful and yet they are the ones who need the most training.”
[Professional IS staff]

However, there was a recognition that IT skills were improving and that difficulties in the use of electronic products and services may ease in the future as a new generation of users and students emerges.

“There are differences in awareness of electronic resources. I think our recent graduates are much more aware of electronic sources of information compared to earlier generations.”
[Liaison Librarian]

It was identified that electronic information, particularly that found on the Internet, was often seen as more attractive and valid by undergraduate students. There was a role for information professionals to act as intermediaries to printed and electronic information sources, advising on the currency, validity and reliability of a particular information source. There would be a need for closer partnerships to be established with academic colleagues so that the range of materials needed to support teaching and learning on their particular courses could be identified.

“Now the Internet is often the first port of call as an information source.”
[Liaison Librarian]

“Yes, sometimes people won’t use a printed information source from 1960 because they think it is invalid and prefer to do an electronic search for information on the Internet.”
[Liaison Librarian]

The range of information available to support teaching and learning was identified as a potential problem. However, providing students with learning packs of tailored information does not encourage the development of independent enquiry and associated information skills.

“There seems to be two approaches operating in the current teaching and learning process. One is an emphasis on spoon feeding students with tailored information in study packs. Then there is the Internet where students are let loose on the information without any quality assessment of that information. There used to be less spoon feeding in higher education, but access to information for students was governed by what was in the Library.”
[Public Services Manager]

“Spoon feeding via study packs does not teach students to critically judge information. I have a feeling students are much less well equipped to evaluate the information.”
[Liaison Librarian]
However, it was identified that this was precisely where library staff could take a pivotal role:

“This is where training for our users comes in. Information staff can advise students to log onto specific sites of quality information like NISS and HUMBUL to save them time. Yes, it is browsing but in a more focused way.”
[Liason Librarian]

The range of expertise and enthusiasm for developing Computer-Assisted Learning (CAL) packages by academic staff in Schools was diverse. Some Schools were far ahead and were frustrated at the inability of Information Services to meet their needs, whereas other Schools were not interested in this area.
4. Research support

How will support for research be affected? How will information staff work with Schools to support this process? How will the research process change in terms of the changing nature of information sources and the impact of electronic journals / monographs and digitised collections?

It was identified that there were different needs across Schools at the University of Birmingham in order to support research activity taking place. It was recognised that Science-based subjects had more research journals available electronically compared to Arts and Humanities based subjects.

It was agreed that printed materials were still very important for research activity in the Arts and Humanities areas. The issue of serendipity was raised as particularly important to researchers in both the Humanities and in the Sciences with chance discoveries and connections being made by browsing in printed journals and also by scanning open shelves of printed books.

“I think it is important we maintain our printed collections because when I go and speak to departments they say there is no substitute for running your eye up and down the book shelves and making information connections and discoveries that way which a computer could never do.” [Liaison Librarian for Arts and Humanities]

The different and often opposing needs of research and teaching activity within the University of Birmingham could cause conflicts in what was required of Information Services. These opposing demands were often difficult to reconcile.

“In terms of a research base approach to what we are doing, it was interesting to hear what you were saying about the possibilities available from open shelves to stimulate ideas and make connections from a range of information in front of the researcher via serendipity. But the majority of our 13,500 undergraduate students this is not what they want. They want the answer to a focused question usually set by their tutor. The user survey this year had priorities as being more access and availability of book stock and cheaper photocopying. They want the answer straight away, and if they can’t then they want to photocopy it. If we are talking about electronic delivery then this could help. But we are still faced with maintaining traditional services because academic staff in the user survey wanted greater access to research materials and increased subscriptions to a broad range of journals which they could scour for ideas and make use of for serendipity. There are different approaches to the electronic library from these groups and what they want. Basically there are different groups in our community who want different things.” [Public Services Manager]
There was disagreement about whether electronic information sources could provide serendipity as this factor was greatly valued by academics.

“That doesn’t mean that future Web browsers won’t produce greater serendipity.”
[Computer Officer]

“It is about serendipity. With a computer and Web browser you have to input something as opposed to simply standing in front of shelves.”
[Liaison Librarian]

There was an agreement that certain types of information sources were more appropriate for electronic delivery. Databases of bibliographic information, current awareness services and citation indexes were more appropriate for electronic delivery because they could be searched easily with results being delivered via e-mail.

“Where electronic sources are invaluable is in databases so academics can scour them to find out what research is going on and whether their research idea has been explored. It ensures they are bang up to date.”
[Public Services Manager]

“There are some fundamental differences between materials suitable to electronic and printed delivery. ISI indexes are much improved when delivered electronically.”
[Academic-related IS staff]

It was agreed that the hybrid library would offer a diverse range of information sources. It would also create new ways of communicating and disseminating research findings and facilitate discussions between researchers.

“The hybrid approach means we will have multiple layers in electronic and printed information provision.”
[Academic-related IS staff]

However, the potential for increased communication via electronic mail discussion lists has to be set against the potential for increased physical isolation of academics undertaking research when information is delivered to a desk-top workstation in their departmental office.

“Although many journals will be delivered electronically I can see the printed copy still having a place. I think there is a risk that as more information is delivered to the desk-top of academics then the social interaction of meeting colleagues either in the library or corridor could be reduced. Academics have an image of being cut off from the real world. Electronic document delivery could enforce this.”
[Liaison Librarian]

There was an awareness of the competing demands on the time of academic staff within higher education and the need to balance teaching, research and administrative
responsibilities. New technologies associated with the hybrid library would need to have direct relevance and have clear benefits for academics in their research activity.

“I think there is some scepticism among academics about technology and the Internet and whether it is worthwhile investing all this time in learning the new technology, particularly as it is changing so fast. They just haven’t got masses of time to learn new technologies.”
[Liaison Librarian]

“I think many Schools remain self-sufficient and don’t use information sources available in the Library.”
[Professional IS staff]
5. Roles and skills

What will be the role of information staff within the hybrid library and what skills will be required? Will there be a shift from the role of the ‘guardian’ to that of the ‘intermediary’ and what impact will this have?

The role of information staff was identified as already changing and some uncertainty was expressed about whether library staff had the skills to effectively undertake their new roles.

“I am not only required to be a third party intermediary. I am involved in partnerships with departments to produce CAL packages, teaching packs and evaluating resources. I don’t feel I’m equipped for this.”
[Liaison Librarian]

"I think it is difficult to know how far it has to go on the electronic side. It is difficult to admit to a user you don’t know how a system works. It is not only the initial training but also on-going training because you don’t often get the chance to use some of these resources."
[Information Assistant]

"What is our role going to be as intermediaries? I feel woefully inadequate about the Web. The whole way enquiry services are being run needs to be evaluated, particularly for evening and weekend services."
[Professional Librarian from Collection Management]

"We haven’t re-thought things. The electronic age has come and we are still doing the same things. We need to start from scratch."
[Professional Cataloguer]

There was agreement that there would be a shift from the role of the ‘guardian’ to the role of the ‘intermediary’, particularly in terms of identifying and linking to Web sites of quality information sources on the Internet.

“There is a danger in this hybrid approach that we have two types of information. There is printed information that has been through rigorous processes of editing, peer review and publishing which is housed in the library. They come to this place because there is a veracity about the information. Now we say let’s increase the access to electronic sources to make the other half of the hybrid library work but this hasn’t been through the process of ensuring the veracity of that information and the quality assurance. So we in the information profession say welcome to the hybrid library as our building: over there in the printed resources we are pretty sure you can get good stuff, but on the Internet we can not guarantee this.”
[Public Services Manager]
“I think you can get a balance. Quality assurance about resources on the Internet is always a problem, but in terms of the resources we point our users to from the ISG (Information Services Guide on the Web) then we can assess the quality and reliability and seek comments from academic staff. What we are directing people to can be quality checked and this is one of the roles we need to carve out for ourselves.”
[Liaison Librarian]

“Subject gateways provide the added value.”
[Liaison Librarian]

There would also be a role for Information Services staff in informing and training academic staff about new technologies and raising awareness about how IT can help to support the teaching, learning and research processes.

“It is for IS staff to go through the steep learning curve with new technologies and then pass that knowledge on to the academics.”
[Liaison Librarian]

There was agreement that the role of librarians would shift to quality assuring information sources, in close liaison with academic colleagues. This would be particularly relevant to recommending, reviewing and establishing links to Web sites on the Internet. However, partnerships with academic staff were essential in order to provide the in-depth subject knowledge that is needed when selecting and evaluating information. The days of librarians as ‘para-academics’ are long gone. Librarians are now needed to be generalists with a broad knowledge-base encompassing a vast range of areas and expertise linked to high level communication skills.

"If we are trying to provide the concept of the hybrid library then we have got to ensure quality.”
[Liaison Librarian]

"Librarians no longer need to be scholars of a subject but rather they should be able to evaluate information resources to a certain level."  
[Liaison Librarian]

There was some concern about the role of library staff within the future hybrid library. Anxiety was expressed about job security in an electronic service environment, particularly by Professional Information Services staff. The traditional role of librarians was seen as under threat, but it was identified there would be increasing work for information systems experts and administrators.

"We need to develop a new role for ourselves or we will be by-passed."  
[Cataloguer]

"There's always been a question about the role of the information professional. The question is not whether the role will be that of the intermediary to electronic information, but whether there will be a role at all if users by-pass us completely."  
[Public Services Manager]
The role of library staff providing support to Science-based subjects was seen as diminishing, although the future role for library staff in supporting Arts and Humanities subjects was seen as more secure:

"I think for some time to come there will still be a need for information staff to organise traditional printed information sources, so that is a role I think. I think this holds for Arts subjects. But I agree in a lot of the Sciences we are already being by-passed."
[Acquisitions Professional Librarian]

There was some discrepancy between the role of Information Services staff in providing centralised services and providing tailored services to individual Schools. There was agreement that library staff roles would differ according to the School they were working with. The Medical School, for example, was seen as far advanced in the provision of Computer Assisted Learning (CAL) packages where as Historical Studies had not explored this area. Library staff roles in the Medical School would be quite different, perhaps engaged in assessing CAL packages, rather than in providing central services which would be more appropriate for the School of Historical Studies.

"There are some services that should be centralised which cover all areas. There are other services which are subject based that could apply to specific Schools. Information staff roles may be split. Core services delivered by IS and then other services tailored to specific Schools. There may be Schools which are happy to go ahead with innovation in the electronic area and then other Schools which need encouraging to do anything in the electronic arena."
[IT Resources Advisor & Trainer]

5.1 The hybrid librarian

The concept of the hybrid librarian was explored. There was some disagreement over the skills-transfer that had taken place between library and computer services staff. A Computer Officer felt that the skills-transfer had been all one way, with library staff learning a whole new set of IT skills and adopting new roles, where as computing staff had not gained any library and information skills.

"The hybrid librarian is expected to take on technical IT skills on top of their information skills. But there is no traffic the other way. Computing people aren't being trained in library and information skills. It seems to me there is only one way traffic in terms of skills transfer. Only librarians benefit."
[Computer Officer]

"I don't know about that. I think for librarians and computing people their basic role will remain the same but there will be a grey bit in the middle."
[Liaison Librarian]

"That's not true. It is a one way shift in skills."
[Computer Officer]
"I always thought that computing people did not want to learn any library and information skills. My experience is that computing staff are less willing to learn library and information skills, than librarians are IT and computing skills."

[Liaison Librarian]

The range of skills needed by librarians was diverse. The need to keep pace with a constantly changing IT environment with new forms and methods of information delivery, as well as evolving and changing subject areas, was viewed as a major challenge.

"There is a need for generalists now. On the one hand we are being asked about the mechanics of how to find information and then on the other we are being asked to answer very specific, in-depth subject enquiries. Nobody can do all this."

[Liaison Librarian]

Librarians were involved in increasing amounts of teaching, with academic staff viewing their expertise as essential and useful:

"My role has shifted so that I undertake much more teaching. Academics feel the need to increasingly approach me to undertake training in electronic information resources for their students."

[Liaison Librarian]

"Why do they ask you to do it? Do they see it as too low level an activity?"

[Public Services Manager]

"Some of them don't have the time. I think there is also a lack of confidence and academics think that I can undertake this task better than them. Sometimes they will come along to the training session to learn more themselves about information sources and searching techniques."

[Liaison Librarian]

The new role for Information Services staff in teaching and training was agreed upon.

"We should get involved in IT modules at the basic levels to catch students when they first enter the University and to then develop their skills throughout their time with us. We need to encourage our institution to introduce compulsory IT modules in degrees and this will raise our profile."

[Acquisitions Librarian]

However, Information Services staff would also need to invest heavily in their own training and professional development to remain effective in a changing environment.
"I think information assistants will undertake training increasingly. It is easy when the book is on the shelf and you can just point to it but with electronic data it is a completely different issue."
[Information Assistant]

The hybrid librarian was seen as essential at Enquiry and Customer Service positions. New skills were often learnt by facing new areas while on the job and learning from experience.

"Information desks will need hybrid staff with hybrid skills. Public Services division has been moving towards this but we have a long way to go. It is a difficult situation. There is little training in place so you have to learn new IT skills as you go along. You have to do it yourself. Students ask questions that I don't know. I get on, seek assistance, and learn the answer."
[Enquiry Desk Professional Librarian]

Enquiry desk staff felt some vulnerability, particularly in the face of Student Customer Charters and tuition fee-paying customers. There was pressure to provide the right answer every time.

"There are issues relating to Customer Charters. If one is an intermediary to information sources on the Web then you need these skills to satisfy customer demands. Otherwise students could say IS staff haven’t got the skills to provide the necessary assistance."
[Professional IS staff]

There was a consensus that there was a need for hybrid library staff for hybrid libraries. Staff would need a whole range of skills but no individual has all of them at the current time. There is no longer a subject librarian or specialist to point users to who will be able to answer all enquiries, if such a person ever existed.

However, a pragmatic view was also raised about the library's core business at the present time being getting printed books on the shelves. This had to be balanced against developing new roles and skills.

"We still need to acquire and process traditional materials. Academics think the most important aspect of services is ensuring the books their students want are on the shelves. But we also need to develop hybrid skills. It is a difficult balance. I feel if all staff were linked to a subject role and trained on IT advances then books wouldn’t get on the shelves."
[Acquisitions Professional Librarian]

"The idea is you do a bit of everything: cataloguing and subject role. It increases job satisfaction."
[Professional IS staff]
“Information assistants should be brought in to do more cataloguing, releasing staff time.”
[Professional IS staff]

“I’m longing to have a change and have a go at other roles and skills.”
[Professional IS staff]

One individual felt overwhelmed by the everyday pressures of working life in Information Services to even consider the future hybrid library model or new ways of working.

“We are just to busy trying to do our particular jobs that we don’t have time to look at different ways of doing things.”
[Professional IS staff]
6. The library as a place

Will the concept of the Library as a place, enclosed by four walls, change and what other models will come out of this process? Is the model of the hybrid library a useful scenario? How will libraries and information services be organised in the future?

There was a consensus that the hybrid library was not a stepping stone on the road to the virtual library. The library as a physical space would remain but it would change to encompass new activities, formats and equipment.

“The Library may change and become a learning resource centre with computers, video equipment and books not available in electronic form.”
[IT Resources Advisor & Trainer]

“I don’t think the hybrid library is a transitional phase on the way to the complete virtual library. I think there will always be room for printed resources.”
[Liaison Librarian]

There would be a range of uses for the library as a physical space in future and it would need to support diverse learning and research needs. No individual library could accommodate all these needs and it was envisaged different types of libraries would be needed, or segmentation of existing library space, in order to support the two major activities in higher education of learning and research.

“There may be different types of libraries where different things take place. We’ve already got that to some extent.”
[Academic-related IS staff]

The library as a physical space would remain important to many user groups. The opportunity for ‘chance discoveries’ offered by an organised collection of printed materials was seen as essential.

"Books organised on the shelves have the potential for chance discoveries but searching on the Internet can provide rubbish next to what you are searching for. It's easy to browse in a physical book organised library."
[Information Assistant]

There were some conflicting views about whether the library as a place would remain important as a learning environment. It was seen as a dedicated space, even a haven, which could be used by learners to focus on this activity away from the pressures of other areas and roles in their lives.

"There is still a value for the Library as a place for study. Part-time students often have a busy home life and the library is the only place they can properly study."
[Information Assistant]
However, the hybrid library model of distributed access to networked resources was also seen as serving part-time students in their learning as they could access resources at home or in the workplace.

"Now people have PCs at home then the environment could transfer there."
[Information Assistant]

The role of the library as a physical place was seen as important, but its future was not guaranteed. As the electronic delivery of information increases, then the importance of the library as a physical space, particularly to academic staff, could decrease. This would entail library and information services staff expanding their support beyond the physical boundaries of the library and into the virtual space of electronic mail reference services and video conferencing enquiry desks to maintain their presence in a hybrid service environment.

“Yes. I wonder if delivering information services to the desk top will prompt academic staff to ignore the Library as a physical space.”
[Professional IS staff]
7. Conclusion

Overall, the development of the hybrid library was viewed in a positive way by Information Services staff. The benefits which the hybrid library can bring in order to support the core activities of higher education institutions was seen to outweigh concerns and barriers to its development. Those barriers were identified as institutional, user needs, costs, IT infrastructure, publishers, the lack of coherent centralised services and a low level of service awareness. The difficulties in overcoming these barriers in order to realise an effective operational model of the hybrid library should not be underestimated.

**Services.** The hybrid library has the potential to impact on the services delivered by information services staff. Potential areas for service development were identified including electronic book-ordering systems and document delivery and digitised materials to support learning. However, there was a consensus that printed resources would not disappear and thus many traditional library operations would continue for at least another five years.

Considerations about new services also prompted reflection about existing services such as the short loan collection. Increased liaison with academic teaching staff was identified as essential in order to identify and monitor appropriate material for the printed short loan collection. There was agreement that traditional library services could be enhanced by the processes being converted into electronic form in terms of the receipt of requests for inter-library loan and the processing of reading lists to identify items for short loan.

**Resources.** The IT infrastructure needed to be in place and 'fit for purpose' in order for the model of the hybrid library to work effectively and efficiently. This required a substantial investment and possible reallocation of resources away from traditional activities. However, before such reallocation of resources was undertaken there needed to be appropriate cost-benefit analysis of delivering information in printed and electronic forms.

**Learning support.** The opportunity to provide learning support to non-traditional students was recognised in a hybrid library environment. However, there were barriers to access to networked information. IT hardware needed to be provided. An awareness of the costs to students of accessing information over the Web at home needed to be recognised. Information services staff could act as intermediaries to electronic information, providing tailored learning packs which were focused and clearly identified.

**Research support.** Printed materials were seen as remaining very important for research across subject areas, with the need for serendipity being a priority. The information needs of research often conflicted with those for learning and teaching. There was agreement that certain information sources were more suitable to certain formats and delivery methods. Citation indexes were more accessible when delivered electronically, where as printed monographs on shelves offered chance discoveries and connections.
Training. There was agreement that Information Services staff would need to adopt
new roles in the hybrid library environment. This change was already being
witnessed. Library staff needed to become generalists, involved in evaluating
information. There were significant new roles in informing, training and raising
awareness of academic staff about the potential of electronic information and IT in
support of learning. However, new roles required new skills. A parallel investment in
staff training across all levels was needed to keep up with the pace of change.

Physical environment. The Library would retain a physical presence on campus, but
different activities, formats and equipment would be located under the same roof.
Library staff would need to retain a presence both within the physical library and in
the virtual library, justifying their role by providing value added hybrid services.
8. Recommendations

8.1 For senior managers of library and information services

IT Infrastructure
To ensure appropriate investment in institutional IT infrastructure.

Resources
To undertake cost/benefit analysis of providing information services in traditional methods versus electronic modes of delivery and to gather accurate financial figures about the costs of delivering information in printed and electronic formats, particularly relating to digitisation projects.

Training
To invest in staff training at all levels.

Commercial providers
To engage with publishers and commercial providers of information to inform them of the needs of higher education institutions in terms of learning and research support and to influence the agenda as pricing and access models evolve.

8.2 For library and information services staff

Roles
To take responsibility for personal development and learn new skills in order to meet the demand for more generalists in the information profession.

Attitudes
To be proactive in promoting new services and demonstrating the added value that information services staff bring to learning and research support. This will involve marketing and communication with academic colleagues, often requiring persistence. Such resilience is needed in order to justify the value of library and information services in a situation of devolved budgets.
Appendix 1: Focus group questions

Services
Which library services currently provided by Information Services could usefully be transferred to electronic or networked systems? Eg. Short-loan collection, self-ordering of books, inter-library loan delivery, journals etc.

Teaching and learning
How will the support for teaching and learning be affected, particularly in the context of shifting markets in higher education and the growth in part-time students and distance learners?

Research support
How will support for research be affected? How will information staff work with Schools to support this process? How will the research process change in terms of the changing nature of information sources and the impact of electronic journals / monographs and digitised collections?

Roles and skills
What will be the role of information staff within the hybrid library and what skills will be required? Will there be a shift from the role of the ‘guardian’ to that of the ‘intermediary’ and what impact will this have?

Library as a place
Will the concept of the Library as a place, enclosed by four walls, change and what other models will come out of this process? Is the model of the hybrid library a useful scenario? How will libraries and information services be organised in the future?