UNIVERSITY OF Hull

Blacklight at Hull (BL@H)

Final Report

December 2010

JISC

The CLIF Project

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The BL@H Project was undertaken by staff from Library & Learning Innovation and the Information & Communication Technology Department at the University of Hull with assistance from colleagues in Digital library Systems & Services at Stanford University. It was funded by the JISC 'Enhancing library management systems' initiative.

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1. Background

1.1 Current catalogue provision and development

The University of Hull uses the Millennium library management system from Innovative Interfaces Inc (III)[1]. Catalogue access is provided through the standard web OPAC interface provided with this system, which can be viewed at http://library.hull.ac.uk. This provides access to all the externally-sourced resources the Library manages, both print and electronic, and is designed as the first port of call for staff and students wishing to find a resource of interest.

Like many OPAC interfaces from library management system providers the Millennium OPAC is built around a set of standard screen templates. The functionality enabled by these is thus set in many ways, and adaptation of the interface is largely focussed on the look and feel of the catalogue. Additional functionality can be added through additional Millennium modules or through third party provision (e.g., Syndetics Solutions), though these all come at a cost. There are also examples of how the Millennium interface can be adapted in-house in substantial ways (e.g., Ann Arbor Public Library), but this requires extensive coding and local configuration. At Hull our recent development has been limited to an extensive look and feel re-design in 2008: since then we have made minor additional improvements, largely in response to user requests (e.g., the addition of the loan type to the display), and have also tested the delivery of RSS feeds through a separate Millennium module.

1.2 Delivery of other internally-managed resources

One of the factors influencing our consideration of a library catalogue interface is that it is not the only system that is made available by the University to access available resources. There are two other particular areas of interest.

1.2.1 Repository materials

The institutional digital repository, built around the Fedora software, has been available since October 2008, and has developed a wide range of internal collections, covering research – including open access publications, theses and datasets – teaching – including open educational resources – and administration – including University policies and regulations. These are currently delivered through the Muradora interface, an open source development from Macquarie University in Australia. Unfortunately development of this interface ceased in late 2009, though we have continued to support and use it locally since then.

Investigation of alternatives highlighted that it would be valuable to allow staff and students to access repository resources alongside library resources through any new interface.

1.2.2 Archives

The University Archives maintain their own catalogue, based on the CALM system from Axiell[2]. This has been kept separate from the main library catalogue because of the specific nature of archival records, which don't fit naturally into the MARC-dominated landscape of the library management system. CALM has its own web interface called CALMview that is used for public access to archival collections.

[1] See: http://www.iii.com
[2] See: http://www.axiell.co.uk/380

The University Archives in Hull shares premises and facilities with the City Archives, and there is a shared CALMview implementation providing access to separate CALM installations (to maintain distinct management of the different collections). Alternatives to CALMview are being considered as an option to enhance access in a way that simplifies this joint arrangement. There is also a desire to allow those using the Archives to access materials of interest in the University Library alongside archival records, but which they currently access using the library catalogue.

1.3 The context for this case study

It became apparent that if we are to enhance the functional provision of information about all our resources then the current OPAC interface is limited in its scope for development. Additionally, although the catalogue provides access to the vast majority of resources of relevance to staff and students, there is also still a requirement for them to use alternative systems to access other internally managed materials. These two issues have formed the basis of our investigation of alternatives

1.4 Identifying technical solutions

There has been much activity in the library management system sector that appears to recognise the limited nature of current standard OPAC interfaces.

1.4.1 Commercial

Not surprisingly, the commercial library management system vendors have recognised this need for a 'next generation' catalogue interface and produced a range of products to meet this need (although in doing so they have also admitted, as much, that their current interfaces are not capable of meeting future needs). III has itself launched its Encore suite of products[3], which has the starting point of providing a new and adaptable interface over a Millennium system. Encore, though, can also be used over other library management systems, as can similar products from III's commercial rivals (e.g., Ex Libris Primo). This separation from the integrated library management system is a key feature of the available next generation products, and also allows the functionality delivered to be specified more flexibly.

An alternative model has been to incorporate library records within hosted services away from the library management system and the institution. Summon from Serials Solutions offers the ability to combine a library catalogue search with a search across databases for journal articles and related materials via a combined database. This variation on metasearch requires that the catalogue records are updated at the hosted service regularly, but extends the idea of a common point of access to all library collections, delivered at a fine level of granularity.

1.4.2 Open source

Commercial providers have not been the only developers of such interface solutions. Cost is a major issue when considering such interfaces, plus control over what can and can't be enabled. There is also a recognition that the 'next generation' interfaces are not technically that complex, and that their development does not rely on commercial development involvement. Villanova University has

[3] See: http://encoreforlibraries.com/

taken this step to its logical extreme through the development of the VuFind system[4] that is now used extensively by others. The University of Virginia also took the view that such an interface could be designed to allow full control by the library on how it presented its own library collections. The outcome of this work was the Blacklight system.

2. Using open source software

2.1 Institutional involvement in open source initiatives

The University of Hull is involved with a number of community initiatives developing open source software and so any use of Blacklight would potentially follow a well understood process. The major open source products in use are uPortal, Sakai and Fedora.

2.1.1 uPortal

uPortal from JASIG[5] is used as the University's portal software. "uPortal is built on open standards-based technologies such as Java and XML, and enables easy, standards-based integration with authentication and security infrastructures, single sign-on secure access, campus applications, web-based content, and end user customization. It is one of the most widely deployed open source enterprise portal frameworks, having been adopted by hundreds of institutions and the eResearch community, world wide."

Robert Sherratt, from Library and Learning Innovation at the University is a member of the JASIG Board of Directors.

2.1.2 Sakai

The University uses Sakai[6] as the basis for its virtual learning environment (VLE) which we badge as 'eBridge'. Sakai is known to be in use at over 200 educational establishments world-wide. "Sakai provides users with a suite of capabilities that best meet the needs of today's teachers and learners. The functionality can be assembled to create spaces for a variety of purposes. The Sakai [VLE] is a flexible, enterprise application that supports teaching, learning and scholarly collaboration in either fully or partially online environments. Sakai also has a robust and full-featured online portfolio system built-in."

In summer 2010 Ian Dolphin, until recently one of our colleagues at Hull, was appointed Executive Director of the Sakai Foundation.

2.1.3 Fedora Commons

The Fedora Commons repository software[7] lies at the heart of the University of Hull's institutional repository. There are hundreds of Fedora installations used around the world; whilst many are based in universities, a significant number are in corporations, government agencies and National Libraries. "Fedora (Flexible Extensible Digital Object Repository Architecture) was originally developed by researchers at Cornell University as an architecture for storing, managing, and accessing digital content in the form of digital objects. Fedora defines a set of abstractions for

[4] See: http://vufind.org/
[5] See: http://www.jasig.org/uportal
[6] See: http://sakaiproject.org
[7] See: http://fedora-commons.org

expressing digital objects, asserting relationships among digital objects, and linking 'behaviors' (i.e., services) to digital objects. … Fedora helps ensure that digital content is durable by providing features that support digital preservation." The Fedora project is now under the stewardship of DuraSpace,[8] a not-for-profit organisation, which also oversees the DSpace repository project and a number of other repository-related initiatives. The Fedora UK & Ireland User Group was founded in 2006, and is still co-chaired, by Chris Awre and Richard Green, respectively Director and Project Manager of this BL@H project.

2.2 Developing community solutions

It is important to note that in adopting open source technologies the University of Hull has always been drawn to products that have strong community support, so-called 'community source' software. Although Blacklight is a relatively new initiative it is already growing a substantial community base and thus attempting to ensure long-term viability.

In his opening keynote speech to the Open Repositories 2007 conference held in San Antonio, Texas, James Hilton the Vice President and CIO of the University of Virginia noted that "puppies are not free". This was a key message (now oft quoted) of his talk "Open Source for Open Repositories" and was intended to remind delegates that whilst, like rescue puppies, adoption of open source software may appear to be "free" it comes with a long, and sometimes costly, commitment to maintenance and development. By consciously adopting community source software, as opposed to merely open source, the University attempts to share this commitment with others.

2.2.1 The Blacklight community

The Blacklight community has matured to be a three-part system.

A Blacklight Strategic Advisory Group (note, this is not a governance group) consists of representatives from institutions with a significant commitment to Blacklight. The group offers these "institutions the opportunity to coordinate, advise and support Blacklight's development and maintenance from a strategic and management level."[9] Hull has been invited to join this group.

The technical leadership of the project is undertaken by a small group of proven developers who have 'commit rights' to the Blacklight source code. Membership of the group is by the invitation of existing members (based on a majority vote) to individuals who have previously demonstrated their ability by contributing high quality code to the project. The group also has a democratic mechanism for removing members of the group.

The third and largest body is that of committed Blacklight users who contribute to the sustainability of the project by promoting it, offering ideas for improvement (even if they have not the technical resources to offer a solution), or by offering code enhancements.

[8] See: http://duraspace.org
[9] E-mail announcement from Tom Cramer, 25th March 2010

The community communicates through a very active mailing list,[10] regular, open conference calls and by using IRC chat. It endeavours to achieve transparency in all its operations and development by adhering to a set of published 'community principles'.[11]

2.2.2 The Sakai and JASIG communities

The directors of the Sakai and JASIG Foundations have recently (7th October 2010)[12] announced their intention to pursue the idea of a merger, citing the striking similarities between the organisations. It will be useful, therefore, to consider these two communities together.

The organisations are each "member-based, non-profit 501(c)(3) corporations" under US law. The foundations each have a Board of Directors which provides their strategic leadership. Sakai Foundation staff coordinate and oversee the day-to-day development of their products and also provide technical support for community members and potential adopters. JASIG has project steering committees providing strategic direction and operational oversight for each of its major products; support is largely through mailing lists.

Adopting institutions, committed to the ideals of the organisations, can contribute financially to their work and, by doing so, gain the right to help determine priorities and become involved in the software development process.

2.2.3 DuraSpace

DuraSpace is the newest of these three open source organisations and is likewise a non-profit 501(c)(3) corporation with a Board of Directors drawn from the community. DuraSpace has a staff providing coordination, technical leadership and information for its two open source repository offerings (Fedora and DSpace) and for the new technologies it is developing (DuraCloud).

Whilst the staff at DuraSapce contributes to day-to-day technical support, much of it comes from the community through mailing lists; at a higher level DuraSpace organises occasional webinars. Software code is developed both centrally and through community contributions. Both Fedora and DSpace have active user groups and recently DuraSpace has launched a number of 'solution communities' to encourage wider thinking and contribution around some of the application areas with which it is involved.

Within the last year, DuraSpace has adopted a community funding model similar to that of Sakai and JASIG.

2.3 Supporting open source software adoption

Whilst all software produced through these community source initiatives is free to download and implement, the use of them and their ongoing support require careful consideration, as indicated by James Hilton in his OR07 speech (ibid). Different models have emerged to meet the differing needs that organisations have.

[10] Mailing list at blacklight-development@googlegroups.com
[11] See: http://projectblacklight.org/principles.html
[12] See: http://sakaiproject.org/news/jasig-and-sakai-foundations-pursue-merger

2.3.1 Commercial support

A number of companies provide support services around the open source software. For example, Unicon provides a range of services around uPortal, whilst rSmart and big industry players such as IBM offer services built around Sakai. The software is still free, but a support contract can be used to ensure that any problems can be dealt with as if the software had been purchased commercially as well. The University of Hull makes use of this approach for our Sakai installation. Commercial support for open source next generation catalogues has not yet emerged, as the sector is still relatively new. However, it may be anticipated that such support will be forthcoming in the future

2.3.2 Local support

Making use of open source software requires a commitment to a degree of local support, irrespective of any commercial support alongside this. One of the key benefits of open source software is that existing IT staff may be used to support the service, reducing costs. The University of Hull has adopted this approach for uPortal and Fedora, and will continue to support Blacklight in this way pending any future availability of commercial support. The skills set required to manage these systems is variable – the more you know, the more you can do – but can generally be applied across a range of systems rather than in just individual cases. In the case of the systems adopted at Hull, Java has been the main area of knowledge required, plus Ruby on Rails for Blacklight, and skills have been developed accordingly to provide the ongoing support necessary and the ability to apply them to other local needs as required.

3. Blacklight

3.1 A brief history of Blacklight

Blacklight[13] is an open source discovery interface that was originally designed for use as a 'next generation catalogue' at the University of Virginia. It provides faceted searching, relevance-based searching, bookmarkable URLs for items and user tagging, plus a clean, customisable interface to guide users. The emphasis in developing Blacklight has been on providing control to the library so it can adapt its discovery interface to suit the needs of the local collection. From its Virginia origins Blacklight has matured into a system that can be used as a discovery interface over many different types of metadata and this opens up the possibility of using it not just in libraries but also with archives, repositories and other information stores.

Blacklight is a Rails engine plug-in for Ruby on Rails which uses Solr to index and search. 'Out-of-the-box' it provides faceted browsing for a number of record formats including MARC. The user interface is highly configurable as can be inferred by exploring some of the example installations cited below.

Currently, the primary development centres are at the University of Virginia and Stanford University but with significant input from elsewhere. As noted in section 2.1.1, a vibrant development community now exists with substantial contributions to development coming from both the libraries

[13] See: http://projectblacklight.org

and repositories sectors. For instance, the Hydra repository project's demonstrator 'Hydrangea'[14] uses Blacklight as the basis of its search, discovery and editing interface (see section 3.3) and this development work is being shared with the Blacklight community. As a partner in the project, the University of Hull is committed to switching, in the first half of 2011, to a Hydra solution for its institutional repository delivery.

3.1.1 Examples

As noted above, the primary development centres for Blacklight are the University of Virginia and Stanford University and it will come as no surprise that their library OPACs are 'powered by Blacklight'. They can be found at:

http://searchworks.stanford.edu/

and

http://search.lib.virginia.edu

respectively.

Other 'in-production' installations include:

Agriculture Network Information Center (http://www.agnic.org/search)
Historical State (NCSU Libraries) (http://historicalstate.lib.ncsu.edu)
Northwest Digital Archives (http://nwda.projectblacklight.org)
WGBH Open Vault (http://openvault.wgbh.org)

Other installations in development include:

National e-Science Centre, Edinburgh, UX2.0 Library (http:// http://ux2.nesc.ed.ac.uk:3000/)
University of Wisconsin-Madison (http://forward.library.wisconsin.edu/)

and, as a result of this project, University of Hull library (http://blacklight.hull.ac.uk)

3.2 Blacklight technologies and their benefits

3.2.1 Solr

"Solr is a standalone enterprise search server with a web-services like API."[15] Flexible and adaptable through configuration, it has:

- advanced, full-text search capabilities
- optimisation for high volume web traffic
- standards based open interfaces for XML, JSON and HTTP
- comprehensive HTML administration interfaces
- proven scalability, and
- an extensible plugin architecture

[14] See: https://github.com/projecthydra/hydrangea/tree/beta1
[15] See: http://lucene.apache.org/solr/features as at 10/Nov/2010 which also informs the rest of section 3.2.1

Further, it can provide server statistics for monitoring (exposed over JMX).

Of particular importance to Blacklight developers and users, Solr provides powerful faceted search and filtering.

Since graduating from 'Apache incubator' status to being a Lucene sub-project in early 2007, Solr has been widely adopted by many high traffic, publicly accessible websites.[16] There are a number of active mailing lists supporting its use.[17]

3.2.2 Ruby on Rails

Ruby on Rails was developed originally to develop web applications over some form of database; here the database has been replaced by a Solr index. In its early days, Ruby on Rails had many detractors and was viewed with some suspicion. Now that it is a much more mature product it is earning a great deal of respect. It has a number of important characteristics:[18]

Ruby on Rails is a rapid application development tool for web applications. It adopts the approach of "convention over configuration" which means that the language assumes a default (conventional) stance over many matters, releasing programmers from needing to configure the obvious. Users thus claim two major advantages – happy developers who are released from a good deal of drudgery and a significant increase in productivity (our partners at Stanford suggest as much as ten times).

Ruby on Rails applications are intended to be easily supportable. The language uses a model-view-controller (MVC) approach which, together with the Rails framework, makes for well structured, predictable code.

The applications thus produced are testable. Tools such as RSpec and Cucumber are powerful, automatable testing tools.

Ruby on Rails is easily learnable. Our partners at Stanford discovered that a good developer can attain basic proficiency in a week and they went from one to eight 'Ruby savvy' developers in a year from existing staff.

3.3 Blacklight as part of repository development

Blacklight has been adopted as a core component of the Hydra architecture.[19] Hydra started out as a collaborative venture between Stanford University, the Universities of Hull and Virginia, and Fedora Commons (now part of Duraspace). The three universities all use the Fedora Commons repository software and were interested in developing a "flexible, extensible workflow-driven, Fedora application kit."[20] Hydra, like Blacklight, has become an open source project with a rapidly growing community contributing to its development. "Hydra's ultimate objective is to effectively intertwine its technical and community threads of development, producing a community-sourced, sustainable application framework that provides rich and robust repository-powered solutions as an integrated

[16] See http:// http://wiki.apache.org/solr/PublicServers
[17] See http:// http://lucene.apache.org/solr/mailing_lists
[18] Much of section 3.2.2 adapted from a presentation to the Digital Library Foundation by Tom Cramer 3/Nov/2010
[19] See: https://wiki.duraspace.org/display/hydra as at 10/Nov/2010
[20] Taken from the Hydra wiki's homepage cited above

part of an overall digital content management architecture. Such solutions can meet the distinct needs of digital library, institutional repository, discipline repository, research, preservation and publishing workflows."[21]

The primary interest here is the use of Blacklight and Solr in the Hydra framework. This opens up the possibility of building a search and discovery interface that can search across a MARC-based library catalogue, Blacklight's original design goal, and a Hydra repository index simultaneously, returning appropriate results from both. This integration is of particular interest at the University of Hull where the institutional repository encompasses a wide range of the University's digital assets; it is not confined to a single type of content (e.g., research articles or e-theses), as described in section 1.2.1. In addition to specific work with the library catalogue, the BL@H project was seen as an opportunity to explore some of the issues that might emerge in trying to make a Blacklight interface a 'one-stop shop' across more than one information source.

4. Implementation

4.1 Technical workpackages

4.1.1 Objectives

The BL@H Project had seven essential objectives:

- install the appropriate technology stack on a virtual machine
- extract a representative sample of MARC records from the existing catalogue system and index them into Blacklight
- customise the Blacklight UI to meet Hull's requirements and to match its branding
- carry out usability testing on the customised Blacklight installation at Hull and contrast it with other implementations elsewhere (including Stanford)
- extract the entire Hull catalogue and present it through Blacklight
- investigate the requirements for a sustainable process of extraction and indexing compatible with a production system
- integrate a repository discovery function into the library Blacklight so that a search queries and returns results from both systems

The usability objective is dealt with at section 4.2.

4.1.1.1 Technical specifications

The BL@H demonstration site is implemented on a VMWare ESX 4.0.0 server.

Host machine:

- Dell PowerEdge R900
- 8 CPUs x 2.3GHz (Intel Zeon E7330 @ 2.40 GHz)
- 65GB Memory
- NetApp SAN-based storage

[21] Taken from the Hydra wiki's homepage cited above

BL@H virtual machine:

- 1 CPU (as above)
- 2GB Memory
- Red Hat Enterprise Linux 5 (64-bit)
- 22 GB Storage (at present)

Running:

- Ruby 1.8.6 (Enterprise Ruby)
- Phusion Passenger (part of Enterprise Ruby)
- Apache Web server 2.2
- Rails 2.3.5
- Blacklight 2.5
- Solr 1.4
- Tomcat 6.0.26 (for Solr)
- Java 6
- Solr-Marc 2.1.2
- Ruby Zoom 0.4.1 (for Ruby Z39.50 binding)
- Yaz 4.1 (Prerequisite for Ruby zoom)

4.1.1.2 Extraction of MARC records

For the work of the BL@H project, MARC records have been manually extracted from the Millennium library catalogue using its administrative interface. In practice a number of extracts were undertaken in order to build up in stages from a few thousand records to the full set. The records thus extracted needed to be indexed in Solr in order to be usable in Blacklight and this was achieved using another open source tool, SolrMarc. Whilst SolrMarc is capable of directly indexing the MARC21 records output from the catalogue, the process was found to be more efficient if they were converted first to MARCXML format (using a converter within MarcTools) and then having SolrMarc index that. SolrMarc both generates the necessary new indexing and combines it with any existing Solr index.

SolrMarc offers a default mapping of MARC to Solr fields and the project used this with only relatively minor alteration. Hull's MARC records contain codes for the location of items in the libraries and these were modified during the indexing process so that the text 'translation' of them appeared in the Solr record and hence on a user's display.

4.1.1.3 Customisation of Blacklight

Blacklight can be customised at a number of levels, the most obvious being to change the styling through css style sheets and/or to change the page layouts by causing changes in the html.

Simple branding of Blacklight for BL@H was achieved by css changes. Here is not the place to go into detail but suffice to say that to someone with a modicum of css experience this is not a difficult task. Generally we have taken the view that it is appropriate to generate an additional css file containing local modifications which then override the corresponding styles in Blacklight's primary style sheet.

Blacklight 'out-of-the-box' has a native understanding of MARC records indexed using the default SolrMarc settings so that a basic record display was easily available to us. However, Hull's libraries use one or two 'non-standard' MARC fields and so it was necessary to tweak the default settings in order to retrieve all the information that we wanted. In addition, and for the sake of consistency, we made some relatively small changes to the relevant Ruby on Rails 'view partial' (the code that generates the HTML for a browser MARC record display) in order to make the screen display similar to that used in Hull's institutional repository.

In order to enhance the browsing experience for our users, we added two additional features into our pages: the ability to display a book cover within appropriate records and a live display of an item's availability.

Book covers were retrieved from Google Books using their public API and providing the book's ISBN as a key. The API further allowed us to provide a 'preview' facility where Google held the necessary text. Coding was achieved using JavaScript.

A live display of availability was achieved by interfacing with our Millennium catalogue's Z39.50 interface.[22] The process involved two further pieces of software: Yaz is a developers' toolkit widely used to build Z39.50 clients,[23] and we needed to add in a Ruby gem called 'Ruby Zoom' which provides Ruby access to the Solr web service. With this linkage in place we were able to query the Z39.50 interface on Millennium using our internal library bibliographic record number and receive information back detailing the availability status of the item. (Our first attempt at this used ISBN numbers as the key but not all our library records support these.)

4.1.1.4 Sustainable extraction and indexing

Clearly the methodology described above is not suitable for providing and sustaining a day-to-day service, however it is clear to us that this could be achieved.

There is a Millennium catalogue module (which Hull currently does not subscribe to) that would allow a timetabled, automatic extraction of new or changed MARC records. A server cron job would then run the conversion to MARCXML and then the SolrMarc indexing. This latter process would also carry out the necessary update to the main Solr index. We would anticipate no problems with this technique but have not been able to test it in practice without the appropriate module.

4.1.1.5 Integration of catalogue and repository searches

BL@H had set itself a task to investigate searching across both the library catalogue and the institutional repository from within a single Blacklight instance. This was successfully achieved.

It was necessary to modify the XSLT stylesheet within the repository instance of Fedora (part of the gSearch module) such that it generated Solr fields with the same names as those produced by our modified SolrMarc. gSearch was then pointed at the library Solr index. In addition, both indexing systems were modified to populate a 'source' facet with either 'Library catalogue' or 'Repository' so that a user could easily limit a search to one or the other, the default being to search both.

[22] See: http://en.wikipedia.org/wiki/Z39.50
[23] See: http:// http://www.indexdata.com/yaz

The unified search produces a single list in return and, when an item is clicked for viewing, additional Ruby code in the 'page partial' determines the appropriate form of display for the information, either a library record display or the appropriate one of several possible repository displays.

4.1.2 Issues

At the time of writing there is a small number of issues that would prevent us turning BL@H into a production system, should such a decision be deemed appropriate by the University.

- as noted above, the Library does not currently subscribe to the necessary Millennium module to allow calendared record extraction
- SolrMarc and our current repository indexing system generate differently labelled Solr fields for essentially the same information. These differences would need to be formally reconciled.
- electronic resources within the library system do not currently appear in the Blacklight system because they do not have formal MARC records. We should probably need a small, bespoke utility to index them into Solr outside the SolrMarc processing.

We do not consider that any of these issues would pose a major stumbling block.

Now at the end of the project, we regard the BL@H demonstration site at blacklight.hull.ac.uk as a proof-of-concept demonstrator. There are a number of shortcomings in its functionality that we would not describe as 'issues' (because we know that these aspects of Blacklight work perfectly well elsewhere) but rather outstanding bugs in our implementation. Clearly, if the University decides to pursue the use of Blacklight for its library catalogue interface these bugs will need to be addressed. Of significance are:

- A small number of apparently valid records do not appear to be indexed
- Invocation of the "Did you mean" routine within a search return causes an error message
- Sorting search results by anything other than relevance causes a title sort
- Quotation marks in the advanced search field cause an error

4.2 Usability workpackage

4.2.1 What the interface does

Common to all the Blacklight instances tested is the ability to search using facets and/or text. The user can select which fields should be searched for any words or names typed. In addition, SearchWorks and BL@H provide an advanced search option allowing more complex queries to be built. The response to a query is a list of the matching assets and clicking on a title takes the user to a full record display. All three systems have been enhanced to display the availability of an item.

4.2.2 Usability testing

The usability testing for BL@H was undertaken in two phases. The first testing centred on use of the Blacklight instances at Stanford University and the University of Virginia (SearchWorks and Virgo, respectively) whilst the second phase centred on the example interface established as part of this

project for the libraries at the University of Hull. With the longer term possibility of searching across both libraries and repository, Hull's interface deliberately mimicked aspects of the design of its new repository interface. At the time of this work, the Virginia system was still a beta test installation and thus known as VirgoBeta.

4.2.2.1 Searchworks and Virgo

A group, mainly of students but containing two academic members of staff, was asked to undertake a pre-determined sequence of tasks and to express some general opinions on the search methodology and display. One half of the group tested SearchWorks first and the other half tested VirgoBeta first, just to see make sure that one system was not always benefiting from users gaining some familiarity with the system format.

Not surprisingly, doing a basic search was the thing which users found to be the easiest with all participants getting this right first time. Clicking on the title to get the full record on screen was also easy in almost all cases. The elements which gave the most difficulty were related to refining searches, in particular limiting to online items and finding items in an individual library. However, by the time users were asked to refine a search to just books at the end of the SearchWorks test they all got this first time round, which indicates that they were starting to pick this up as you would expect.

When viewing the full record users generally identified the class numbers without a problem, but had more difficulty in identifying the number of items and the location. This may reflect a lack of clarity in those areas, although it could also just be unfamiliarity with the layout.

There was one element of each of the different interfaces which divided opinion. On SearchWorks this was the tag cloud on the main search page which some testers liked and others hated. Interestingly, a quick look at SearchWorks today shows that the tag cloud now seems to have been removed. On VirgoBeta the controversial element was the 'Recently Added' book covers which some testers thought was a helpful feature, but others felt was too random and irrelevant.

We also asked our testers to give their opinion on which interface they preferred. Results were:

- 7 preferred VirgoBeta
- 5 preferred SearchWorks

3 liked different aspects of both and made no choice.

The fact that there is no strong preference for one interface over the other suggests that both are acceptable, perhaps an unsurprising conclusion given that both universities undertook their own user testing as part of the development process.

Fuller information about this round of testing is to be found in Appendix 1.

4.2.2.2 Blacklight at Hull

The usability testing on our own version of Blacklight was carried out with 10 volunteers comprised of library staff and students. Unfortunately, none of the participants in these tests were the same people that did the previous testing on US implementations, the testing taking place six months later. We followed the same pattern as with our previous testing, asking users what they thought

about the general display and layout of the system and individual records, and asking them to perform a number of searches and then to refine those searches.

Results for performing the searches were similar to the first round of testing, which generally showed that users could easily do basic searches. Users had most difficulty in the first use of limiting by facets, but for subsequent use of these they quickly learnt what to do. As before, although a system may be unfamiliar, users soon learn how to use it. This was helpful in confirming that our version of Blacklight was as easy to use as the others we had tested.

Equally important were the views of our testers on the general displays and features of the system. These should help us to make improvements where appropriate and also confirm which elements are liked by users. Among the general comments there were several instances where users mentioned that the displays were "clear" and "uncluttered" and it appeared that they liked this feature. We also asked their opinions on the different facets for limiting searches and again there were useful comments. In particular, all wanted the Publication date facet to be presented in a chronological order since this would be an easier way to refine such searches.

There were a few concerns around relevance ranking in particular and thus the order in which search results were presented. It was also commented that this seemed to lead to a loss of precision and made it less easy to find both expected and specific items.

Fuller information about this round of testing can be found in Appendix 2.

4.2.3 Summary of findings

The testing has provided us with plenty of information which will be useful if it is decided that the University should continue developing its variant of Blacklight for library use.

The issue of relevance ranking raised in the second round of testing is one that we need to address. Blacklight (via Solr) provides for the way in which relevance is calculated to be adjusted and weighted and we are aware that refining this calculation for local requirements has taken significant time in other installations. Clearly this is key to local user satisfaction.

Overall, there was considerable enthusiasm for Blacklight and our clean, uncluttered implementation of it.

5. Conclusions

The case study undertaken has provided a very valuable insight into what would be required to deliver a fully fledged next generation catalogue interface using Blacklight. Specifically:

- The work has extended our understanding of how Blacklight operates, and particularly in the case of MARC21 catalogue records. Blacklight offers us a flexible interface that allows us to determine how we present our collections, whether they are from the library catalogue or repository.
- We have reinforced our belief based on experience that community source software provides a viable alternative for our institution and that open source alternatives should be considered equally alongside commercial offerings.

- We have developed links between our IT department and the Library that have informed our requirements for a next generation catalogue interface and facilitated discussion of outstanding issues.
- There are key issues to be resolved, in particular the regular exporting of catalogue records for indexing within Blacklight. These key outstanding issues have their origin in how Millennium works, and we are confident that Blacklight will be able to accommodate the solutions identified without difficulty.
- The usability testing carried out has provided increased awareness of the benefit of such testing within the Library, and highlighted specific aspects about the interface that will guide future implementation, including some that had not been considered as such beforehand.
- We have identified that providing a combined interface to our library catalogue and repository is a feasible ambition, and we can further investigate surfacing of archival records with confidence.

6. Next steps

Following the Blacklight at Hull case study, the following actions will be undertaken to to further the work undertaken by it:

- The work undertaken by the case study will be evaluated internally to understand what is required to deliver the use of Blacklight as an alternative next generation OPAC interface for the University's library catalogue.
- This evaluation will inform a programme of work that will need to be fulfilled to allow Blacklight to be delivered as a service. Analysis of this programme will inform a roadmap. It is anticipated that this roadmap will seek to operate a production prototype of Blacklight alongside our current OPAC interface during the latter part of the academic year 2010-11 in order to gather further user feedback.
- A decision will be taken during summer 2011 on the future service use of Blacklight for the library catalogue.
- Further development of the joint search of the library catalogue and repository will be undertaken following this decision. Blacklight will, though, be implemented as the primary point of access for the repository in a parallel activity during the first part of 2011 as part of the roadmap for repository service development.

7. Demonstration interface

The demonstration interface developed during this project is accessible at:

http://blacklight.hull.ac.uk

As noted elsewhere in this document, the interface is not a fully-fledged, production-ready implementation – rather a proof-of-concept demonstrator. Readers of this document are welcome to try it out on the understanding that it is offered "as-is" and without support or warranty of any kind.

Please note that:

- the software is running in 'development mode' resulting in the Solr queries generated being displayed at the bottom of the screen
- the download link for items in the repository is disabled in order to avoid any potential copyright issues

8. Acknowledgements

We acknowledge with gratitude the invaluable assistance of colleagues at Stanford University in carrying out this project. In particular we wish to thank Tom Cramer (Associate Director of Digital Library Systems and Services), Naomi Dushay (a technical lead and committer on both the Blacklight and SolrMarc projects) and Bess Sadler (a technical lead and committer on the Blacklight project, as well as its original developer and architect).

Appendix 1: Usability studies [1] SearchWorks & VirgoBeta (May 2010)

18 people came to do some searching on both the SearchWorks (SW) and VirgoBeta (VB) interfaces. Around half of the testers tested SearchWorks first and the other half tested VirgoBeta first. This was because users might find the second searched interface easier than the first simply through familiarity with the style of searching. Doing a half and half approach would enable us to negate this effect. There were only 16 tests for VirgoBeta because the system was not working properly between 11:00 and 12:00 BST on two mornings when the test was running. We suspect there was probably some sort of maintenance being done on the system at that time in the US which would have been 0600 to 0700 EST.

Comments

1) Testers were asked what they thought of the initial display from the main screen?

SW
"cramped and crowded" didn't like tag cloud
"Green Library appears most used" and "don't like word clouds"
"like Google Books" ; likes cloud and "what is important conveyed by font sizes"; "clean"
Didn't like cloud of news – "cluttered and unnecessary"
"Quite favourable"
"looks more basic, more traditional"
"less colourful"
"beautiful cloud – why are some words bigger than others. Looks pretty. Clear search box"
"cloud is the focus rather than search box"
"useful refine your search button"
"cloud stands out – good. Not sure on news side. Like options on the left side"
"looks to the point. Direct – simple layout"
"Basic, but all most important info there". Asked about significance of different size words in cloud tag.
"clear – big search box"
"quite good. Likes cloud area – looks modern"
"better if cloud list were alphabetical – ok"
"tag cloud seems to be most recently searched items. Might be able to choose Books etc. from the start"
"don't like tag cloud, but like look of this better and found subject of interest in tag cloud"

VB
"clean and uncluttered"; "attractive"
"uncluttered"; "set out in blocks"; "can see where you need to go"
"book covers good"; "looks more modern"
"simple,logical"
"simple, easy to understand"
"like Amazon or a commercial site"
"would prefer not to have recently added items; would like more colour"
"Advert?" recently added items. "Search box more obvious"
"less cluttered (not always a good thing). A marked list export feature would be good"

"less options on left of first screen. Like recently added, but not very clear; scattered and not relevant"
"very simple, but why the randomly added items? Not visually stimulating"
"more colourful, more modern. Recently added items handy"
"Clear – big search box"
"SW more attractive"
"less info – fewer options"
"simple, but doesn't give any more details"
"recently added random – not really of interest"

2) Testers were asked what they thought of an individual record display?

SW
"box is larger, wider"; likes summary; related items useful
"more info at a glance, don't need to scroll down"; "ability to browse around"; also liked link to WorldCat
"likes summary"; "availability not so easy to spot"
"not as clear as VB"
"Different fonts and highlighting make it easier to use"
"less clear"
"useful, medium length. Idea of what it is about. Would expect to click through to full text"
"wants to be able to see if it is available [easily]"
"useful for referencing; very clear"
"clear, everything put down. Concise – like it all in one place. How do you access?"
Likes summary on the bib record
Asked how you would find availability of items
"clear – gives all info that you need"
"Good – where's the video?"
"Ok – can you download the video?"
"Odd that it's a video not a DVD. Also would be good if could access online"
Looked around for where item is – less obvious to find items

VB
"prefers listing with copies shown underneath"
likes options to send bibliographic info in various ways, eg. Email, SMS
"need to scroll down to see info and would prefer smaller font"
"good"
"readable, structured. Blue add to band confusing – better to side or bottom"
"similar to Millennium – a bit busy"
"where is edition statement?"
"doesn't think it will work well. Clean style, not businesslike"
Spotted and liked Google preview option. Also table of contents and liked "request this item". This display looks better – more useful than SW
"good for referencing; gives the info you need"
"like how it says how many numbers. Like Ask a Librarian feature. Like all the options for exporting, SMS etc. Like can check availability and request items from results page"
"prefer this display to the other one. Like related subjects and names on the side"
"availability much clearer. Add to list handy"
"not as detailed as SW"
"gives right amount of info – not too much"

"ours doesn't have a content overview"
"Ok"

3) Testers were asked which interface they preferred

Expressed preference for VB
"VB looks more modern, but SW easier to use. SW more related books, but like the covers on VB. Don't like tag cloud"
Expressed preference for SW
Prefered VB – layout more structured and easier to use
Prefered style of lists on VB, but felt SW easier to use
Prefer SW – easier to process info
Preferred VB
Liked VB better
Prefer SW
Prefers SW – used to simple format
Prefers layout, functionality and design of VB
Prefer VB overall – more options
Preferred design of SW, but functionality of VB
Prefer VB – buttons, menu a bit larger; easier to access to see. Like layout of results screen. Availability bit large, but would get used to it.
Prefer SW

Individual elements results

SearchWorks

Search for "volcanoes and the atmosphere"

Completed 1st time	18
2nd time or after prompt	0
Comments: Some did as 2 keywords – volcanoes atmosphere	

Look at the full record for this title

Completed 1st time	18
2nd time or after prompt	0
Comments: None	

Which library is it available in?

Completed 1st time	14
2nd time or after prompt	4
Comments: Perhaps should be highlighted, class etc. Better on brief display / Unclear how to request item / Like related resources on the left / Can see it At the Library – assume this is Branner	

What is the class number of this item?

Completed 1st time	17
2nd time or after prompt	1
Comments: Is clear / Looked around record, but then found it	

Do a new search for “Natural resources”

Completed 1st time	18
2nd time or after prompt	0
Comments: Like the book covers which display	

Find just the online items

Completed 1st time	11
2nd time or after prompt	7
Comments: Added online to search box; would use refine search categories when know what they did. Advanced search is a bind	

How many are published this year?

Completed 1st time	13
2nd time or after prompt	5
Comments: Looked at sort option first, but didn’t click then found facet / Like how you can then refine to 2009/10 / Very useful to get most relevant, recent items / Not outrageously hard / Sorted first by new to old – experience would be useful for interface	

Start over to do a new search

Completed 1st time	15
2nd time or after prompt	3
Comments: Some just overtyped again in search box	

How might you go about finding items at the Hoover Library?

Completed 1st time	12
2nd time or after prompt	6
Comments: Did search for Hoover Library – found location and tag cloud options not clear / One found both ways / Selected At the Library first then found cloud tag / Went via Location – cloud looks like an advert / Did Location – if cloud changed colour when mouse over it might be seen as clickable, otherwise is just a picture	

Do a new search for “Romeo and Juliet”

Completed 1st time	18
2nd time or after prompt	0
Comments: Expected “and” to be a problem	

Refine your search to just Books

Completed 1st time	18
2nd time or after prompt	0
Comments: Can you look for both books and theses at the same time? Yes, found can do multiple limits via Advanced Search	

Sort the results into order by author

Completed 1st time	15
2nd time or after prompt	3
Comments: None	

VirgoBeta

Find the book “strategic planning systems”

Completed 1st time	16
2nd time or after prompt	0
Comments: None	

Look at the full record for this title

Completed 1st time	14
2nd time or after prompt	2
Comments: None	

How many copies are there?

Completed 1st time	7
2nd time or after prompt	9
Comments: Initially said 2 copies then realised 2 more listed below / Said just 2 despite prompt / Asked if 2 were shared between libraries	

What is the class number of this item?

Completed 1st time	15
2nd time or after prompt	1
Comments: Like that can SMS, Cite, Endnote, Email etc.	

Do a new search for items on “fishing”

Completed 1st time	16
2nd time or after prompt	0
Comments: None	

Find the ones which are written in Latin?

Completed 1st time	10
2nd time or after prompt	6
Comments: None	

How many are there?

Completed 1st time	14
2nd time or after prompt	2
Comments: None	

Put the results into order of most recently published

Completed 1st time	14
2nd time or after prompt	2
Comments: None	

Is there anything interesting about the results now?

Noticed	7
Did not notice	9

Comments: Just saw that they were now in date order / No book covers / Odd results – would not use since no good / Latin & fishing case not good so less inclined to trust/use this interface

Start over and look for items on organic chemistry

Completed 1st time	16
2nd time or after prompt	0
Comments: Start over button not very prominent / Hard to find Start over button	

Find those which are in the Health Sciences Library

Completed 1st time	9
2nd time or after prompt	7
Comments: Tried geographic location, subject and location facets before spotted library one / Too many options are similar	

What did users find easiest / hardest?

Not surprisingly doing a basic search was the thing which users found to be the easiest with all participants getting this right first time. Clicking on the title to get the full record on screen was also easy in almost all cases.

The elements which gave the most difficulty were related to refining searches, in particular limiting to online items and finding items in an individual library. However, by the time users were asked to refine a search to just books at the end of the SearchWorks test they all got this first time round, which indicates that they were starting to pick this up as you might expect.

When viewing the full record users generally identified the class numbers correctly, but had more difficulty in identifying the number of items and the location. This may reflect a lack of clarity in those areas, although it could also just be unfamiliarity with the layout.

Comments on each interface which were repeated

SearchWorks

Initial page:

- The tag cloud divided opinion with 6 negative comments and 4 positive ones.
- The design was felt to be basic, less colourful and with a simple layout.

Individual record display:

- Like summary of content on bibliographic record
- Easy of identifying availability was questioned
- Clarity of display was again divided with some finding it clear and others not so much
- The record in question was for a video and a number of users said they would want click through to full content, which probably reflects users online experiences.

VirgoBeta

Initial page:

- The recently added book covers divided opinion on this interface with 3 positive and 3 negative comments about them.
- The design was considered clean, uncluttered, simple and with a better search box.

Individual record display:

- They like the various options to export bibliographic information
- Availability and listing felt to be clearer
- Less info provided, but felt to be enough and to provide what is needed

Overall

- 7 simply prefer VB
- 5 simply prefer SW
- 3 liked different aspects of each and made no choice.

Observations

There was not much difference in preference between the two interfaces, which probably indicates that both are reasonably good (which is what one might expect since the universities concerned have done their own usability testing). It is interesting to note that at the time of writing this (23/08/10) SearchWorks has undergone a revamp which has removed the 'controversial' tag cloud and added more colour to the site. VirgoBeta has also had some small alterations.

Also interesting were the comments on one of the searches done on VirgoBeta. Testers were asked to look for items related to fishing, then limit to those in Latin. This brought up expected results. When we asked them to sort by those published most recently, what then resulted was a lot of titles which were in English and had nothing to do with fishing! When this was pointed out to them, and it was explained that it was probably due to the system indexing full text resources, a number of testers indicated that this would make them less likely to trust the results of the system. So if Hull is intending to use Blacklight across both bibliographic and full text indexing this is something to be considered.

Terminology is important. This came out when asking users to limit to items at a particular library. In SearchWorks there was some confusion between the Access and Location facets and the options in the tag cloud. In VirgoBeta there was some confusion between the facets for Library, Location and Geographic Location.

DCL 23/08/10

Appendix 2: Usability studies [2] Blacklight@Hull (October 2010)

Ten people came to do some searching on our Blacklight interface. Users were asked to perform a number of searches and also to provide feedback on what they saw. Volunteers comprised library staff and students.

Comments

1) Testers were asked what they thought of the initial display from the main screen

"Nice and uncluttered. Not a huge amount to read. Like search box to be prominent and this is about right"
"Looks clear, but only 3 search options. Would prefer more specificity"
"Don't like University black colour scheme. Search box should be more prominent. Like the white background"
"Nice and uncluttered – looks fairly self-explanatory"
"Looks nice and can understand easily and quickly"
"Very simple. Like options on the left, but could be bigger"
"Current catalogue not very streamlined – this is presented better"
"Looks simple and like that. Catalogue has lots of 'things'. Looks good. "
"Clear – just what you need for search"
"Looks like any other system. Not many options for searching – usually uses only title and author. Like advanced search to be easily visible"

2) Testers were asked what they thought of an individual record display

"Seems clear. What is identifier and Asset source? Why does date appear again in separate field to imprint? Could class mark be in view without having to scroll down? A lot of blank space at the sides. Will loan period be added as well? Cover picture looks nice, but would people want it?
"Clear – would be nice to have links for authors, subjects etc. to find related items. More info such as how authors are related to the work. A summary might be useful too. Picture – most users would expect to be able to click and enlarge it"
"Availability is what most people care about and should be further up the screen so don't need to scroll. Loan period would be good too. How do you get to the next record? What are Asset source and Identifier? Icons are odd – what do they mean?"
"Neat and tidy. Does the left side have to remain blank? X to remove not helpful and needs explanation. Like the cover picture."
"Easy when you need to reference. Looks clear, need to be able to see information clearly. What is the identifier and why is it there?"
"Better than the catalogue – clearer to see information. Cover picture could be useful"
"Presented better than catalogue – less cluttered. Picture display good, but not always book jackets on books"
"Location availability good and what is wanted. Has all the information you need. Like the colours – black on white. Is picture necessary? – a bit small when eyesight is not so good"
"Ok – has what you need"
"Seems clear. Perhaps author name could be more prominent. Location easy to see. Like picture, but does it match the book you have?"

3) Testers were asked what they thought of the export options

"Should be useful and also Cite option"
"Export and Cite both useful; Librarian View not really for users"
"RefWorks – would want to be able to add to a basket for export not do one-by-one. Cite – can you add others? Need to use ones recommended for use in the University.
"Like export options. Cite – can other formats be added and should there be warning/disclaimer that some departments may recommend different systems?"
"Cite would be very useful"
"Cite helpful"
"Cite helpful"
"Cite would be really useful"
"They would all be useful"
"Citing is good – can it do Harvard?"

4) Testers were asked for their opinions on the various facets

"Publication date order odd – better as most recent first. Library might be better labelled Location since more explicit. A 'mouse over' explaining what the facets represent might help"
"Publication date – not very useful, chronological best most recent first. Serial – better term? Source not helpful with just Library only"
"Date – perhaps have spans of 10 years or so. Serials is not used as a term here. Subject facet could be useful. Call number – do users know what this means, or Source?"
"Source not very useful. Publication date better in year order. Format needs to be better and online items (ebooks and ejournals) would be better here than under Library. Choices under Library also need considering – is Chemistry Department useful? Don't like automatic numerical sort, prefer A-Z."
"Better to be in date order on publication date. Could it then be most popular under each date? Serial not useful term. Can limit by more ways and can easily get to know system. Would be useful to see if there are ebook versions"
"Date order better with newest at top. Looks much easier to find things"
"Date better in chronological order, but useful to have"
"Format useful since not always clear on catalogue"
"Date order would be best. Could have Serial/Periodical/Journal as an option to cater for people without English as first language"
"Order by date more useful, that is what matters. Source – what is that?"
"Date order better. Journal or magazine better than serial. Call number option makes sense if looking for a specific area."

Individual elements results

Search for "volcanoes and society"

Completed 1st time	10
2nd time or after prompt	0
Comments: one person chose title / one put and in capitals	

Look at the full record for this title

Completed 1st time	10
2nd time or after prompt	0
Comments:	

Where is it located?

Completed 1st time	10
2nd time or after prompt	0
Comments:	

What is the class number of this item?

Completed 1st time	10
2nd time or after prompt	0
Comments:	

Do a new search for “Natural resources”

Completed 1st time	10
2nd time or after prompt	0
Comments:	

Find only the ones in Spanish

Completed 1st time	4
2nd time or after prompt	6
Comments: 3 people clicked on advanced search	

Do a new search for “Romeo and Juliet”

Completed 1st time	10
2nd time or after prompt	0
Comments: Odd results – how is relevance determined? Would expect the play to appear prominently.	

Refine your search to just Books

Completed 1st time	10
2nd time or after prompt	0
Comments:	

Sort the results into title order

Completed 1st time	8
2nd time or after prompt	2
Comments: Might sort be better on the left with the facets?	

Do a new search for “Dracula”

Completed 1st time	10
2nd time or after prompt	0
Comments: Again concerns about relevance and older materials coming up first.	

Select the ones published in 1989

Completed 1st time	10
2nd time or after prompt	0
Comments:	

Look at the full record for the second title

Completed 1st time	10
2nd time or after prompt	0
Comments:	

Do a new search for "Shipping"

Completed 1st time	10
2nd time or after prompt	1
Comments:	

Find just the ones at Blaydes House

Completed 1st time	9
2nd time or after prompt	1
Comments:	

Then narrow it down further to just serials

Completed 1st time	8
2nd time or after prompt	2
Comments:	

What did users find easiest / hardest?

Initial searching was completed successfully by everyone. Similarly for selecting a record and going to the full display. Users had most difficulty in the first use of limiting by facets and for subsequent use of these they quickly learnt what to do and the success rate increased. Likewise, the first instance of sorting proved slightly tricky for some, and while we didn't ask them to sort again (due to the other sorts not working correctly!) I am sure that they would have all done the sorting first time on another occasion. Basically, once you've done found out how to do something first time and worked out how the system operates you can do it easily on subsequent occasions. This was the same experience as found with the first batch of usability testing on two other versions of Blacklight.

Comments which were repeated

A number of people commented, when asked about the various displays, that it looked "clear" and "uncluttered". Certainly our implementation is fairly minimal from its initial search screen and if we were to progress further with Blacklight I would hope that we could remember what our users have said and resist the urge to fill up space with other information.

Almost all of the testers felt that the option to see a Citation format for a record was useful and this was valued more than the various export options. With regard to the facets there was a unanimous

dislike of the publication date option displaying in order of the dates with the largest number of "hits" and they all would prefer a chronological order to select from.

General comments

"What would be the advantage of this interface? When would we recommend it? Seems like a loss of precision and not so easy to find specific items."
"Good for people who have not used such facilities before"
"Easier to use especially for foreign students"
"Like it a lot – more obvious"
Looked at advanced search option. How do you get back to the main menu if you decide not to do this?
Advanced search not as useful as the facets. Also when there are a lot of pages to go through could be handy if you could type in the page number to go to.
"Could advanced search be used like a limit? Need to get used to the facets, but one you do it makes sense – useful"

Observations

The general view was that users liked the searching features and the layout of the displays. A couple of users even asked when they would be able to use this for real!
The item information made it easy identify class numbers and locations. At present our item information is static and is not provided via a live link from our catalogue. We would need to have up to date availability data and would hope that if we are able to do this then the clarity of the information is retained.

There were one or two concerns. One was with the relevance ranking since the results which were displayed most prominently were not those which the user would have expected to see. In particular, it would be better to have more recently published items to the top of the list. One of my own concerns when creating the test was that I discovered a result being presented where the exact terms searched for were not in the record. So relevance/retrieval needs to be improved.
Note: the 'exact terms' concern arose because quotation marks were not used in the search and so stemming was used within the system.

Also, while users generally like the way information was displayed there were some comments about the individual record display being quite long before the availability was shown (this may simply reflect a different approach to our current catalogue, which now has the item information in the middle of the display) and thus the need to scroll down to get to the information which is most wanted. It was noted that there was quite a lot of "blank" space at the sides of the display and it was asked whether this could be used better to shorten the display.

Some useful comments were provided on the different facets which should allow us to refine these and make them more helpful.

Overall, the testing provided us with plenty of information which will be useful if we decide to continue developing our version of Blacklight.

DCL 15/11/10

Appendix 3: Licences