

How we FindIt@Bham using Primo

Stephen Bull, Library Services, University of Birmingham (s.a.bull@bham.ac.uk)

Edward Craft, IT Services, University of Birmingham (e.j.craft@bham.ac.uk)

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Introduction

The University of Birmingham is currently investing in its library and systems. A three year programme of activity, completed in Autumn 2013, has seen a review of all printed monograph material held by Library Services and the implementation of a new resource discovery solution, 'in-house' reading list software and a library management system. During this period, it has been announced that funding will be provided for a new Main Library which is due to open in Autumn 2016¹. Combined, this investment will allow the University to better support the University's learning, teaching and research agenda.

This article will focus on the resource discovery system (RDS) which was launched in September 2012². The article will consider why an RDS was required; it will give details about the implementation of the system as well as the extensive customisation which was made to the 'out-of-the-box' product. The value of user focus groups during the customisation process will be discussed as well as some technical tips and advice for anyone considering doing similar customisation. The article will conclude by considering the impact of the new system during its first year of operation.

The Need for a Resource Discovery System

Two key drivers for a resource discovery system were as follows:

- Improving discoverability of content
- Increasing the profile of our services

Library Services provides access to approximately 2.7 million items, 50,000 journals (electronic and print) and over 275,000 eBooks³. These collections are a major asset to the University in supporting teaching and research and so making the content discoverable to staff and students both on- and off-campus is important. Further, the vast range of resources available can be used as a showcase for Library Services. This is increasingly important for students who are expecting value-for-money from their courses as well as useful for potential students and parents in knowing what library resources are available.

Prior to installing the RDS, the University's library content was accessed via a traditional library OPAC and a Metasearch tool. A RDS would provide a new 'front end' and would significantly improve the end-user experience of searching for, discovering and accessing library content.

Following an extensive competitive tendering process, the University announced the purchase of 'Primo' a resource discovery system from Ex Libris⁴.

Implementation

The implementation project lasted six months and ran for the period May to September 2012. During the first 2.5 months, emphasis was on installing the software, receiving training on how it worked from Ex Libris, benchmarking against the resource discovery systems of other institutions as well as customising the interface of the University system. Between mid-July and the end of August a series of focus groups took place with feedback from each contributing to the system's final design. On 4th September, the service went 'live'. Documentation was produced and end-user staff training took place ahead of the start of the new academic year. Post-implementation monitoring and promotion of the service continued until the end of the October when the project closed.

The implementation project team consisted of eleven members of staff: three of whom were from IT Services' Digital Library Team, the remainder from Library Services. Table 1 shows the make-up of the team and the approximate percentage of time each member had dedicated to the project.

Table 1: Make-up of the Project Team

Role	Full Time Equivalent (FTE) on Project
IT Services	
Implementation Manager	0.1
Digital Library Specialists	0.7 and 0.2
Library Services	
Project Manager	0.5
Metadata Rep	0.2
Serials / eResources Reps	0.2 and 0.2
Library Customer Support Reps	0.2 and 0.2
Subject Librarian Reps	0.2 and 0.2

Customising the Resource Discovery Service

Customising the RDS to best meet the needs of staff and students at the University was an important aspect of the project to which significant time and attention was devoted. Numerous 'home pages' were considered. Features from each design that were liked by the project team were taken and used in the final interface design. These included:

- Strong University of Birmingham branding including image of the campus' iconic red-brick buildings
- 'Google-like' search box in a prominent, central location
- Brief description of what the service does
- Icons containing links along the bottom, rather than right-hand side, of the screen

- Text kept to a minimum

The name of the RDS was decided by a Library Services staff competition, for which 40 entries were received. *FindIt@Bham* was chosen as the winning name as it clearly links to the ‘Birmingham’ brand, it says what the service does and it is also the familiar name which has been used as the SFX link resolver⁵ for a number of years.

The final design and branding for the University of Birmingham Resource Discovery System is shown in figure 1. The backdrop features the University’s redbrick Aston Webb Building and Great Hall along with the iconic campus clock tower.

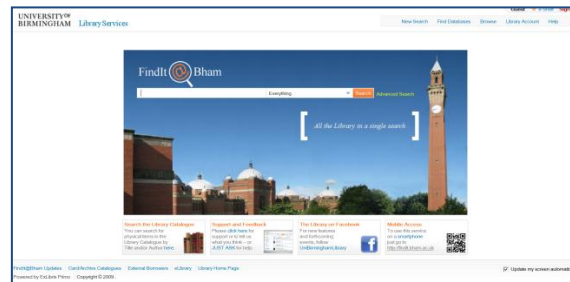


Figure 1: Final design for the University of Birmingham Resource Discovery System, branded *FindIt@Bham*

Focus Groups

An important part of the project was to gauge opinion of users on the customisation and usability. To this end, a number of semi-structured focus groups were arranged. There were six focus groups in total: four towards the end of July and two in mid-August. In each round of focus groups there was a student group and a staff group with representation from subject areas across the University (the former group contained students from all levels of study and the latter group were made up of academic, academic-related and support staff). In the July round of groups there were also two Library Services staff groups. Recruitment for these groups took place via a number of channels including recognised University e-mail channels, the Guild of Students, subject librarians, as well as posters around the library. Refreshments were provided for each group, with staff receiving lunch and student volunteers a £10 Amazon voucher. In total, approximately 70 volunteers took part.

As a result of the focus groups, changes were made to the system. Perhaps the most discussed item was the ‘drop-down’ menu (known as ‘scopes’) next to the search box. Feedback suggested that it wasn’t clear what the terminology of the scopes meant and that there were too many scopes (approximately 15 at the time of the focus groups which had been reduced by the project team from the approximately 30 which the ‘out-of-the-box’ product included). As a result of the focus groups, the terminology was improved, with a definition ‘pop-up’ which appeared when the scope was hovered over, and the number of scopes was reduced to seven. The default scope was set to ‘Everything’ rather than the more restrictive ‘Library Catalogue’ scope (which included only content that the University owned or subscribed to). This was to ensure that the extra content from the *Primo Central* repository⁶ would be readily discoverable. To ensure that material that was owned or subscribed to by the University were easily found, these results were ‘boosted’ towards the top of the results list.

Other changes which resulted from the focus groups included: ordering of the 'facets' (refine options on the results screen), making the 'Sign in' button clearer (required to access all available content and check library account) as well as create separate tabs within the 'Find Database' part of the system for 'Search by Name' and 'Search by Subject'. The Advanced Search was also customised further as a result of the focus groups.

The key benefit of the focus groups was being able to gain opinions from end-users and Library Services staff not directly involved with the project. The discussions were invaluable both in terms of gaining feedback and ideas as well as a gauge for whether suggestions/comments made were unique to one or two participants or whether they represented consensus of the majority. Finally, and perhaps most importantly, the focus groups provided an endorsement that, overall, *FindIt@Bham* met with user-approval.

Customising *FindIt@Bham* from a Technical Perspective

From a technical perspective, customisation began once a supplier was selected. Library staff were asked to visit existing web sites – commercial sites such as Google and Amazon as well as other institutions' RDSs both *Primo* and non-*Primo* – and feed back on what they liked and disliked about online searching.

The results of this and subsequent feedback from the focus groups was overwhelmingly positive; especially when compared with *eLibrary*, the previous RDS based on a pre-Metalib+ combination of *Metalib*⁷ and *SFX*⁵ which lacked Library Management System (LMS) integration. The overall workflow of *Primo*'s searching was liked, in particular:

- Being able to do searches on datasets without having to pre-authenticate
- Integration with LMS, Institutional Repositories and other data sources
- Limiting by search scopes
- The display and navigation of results including refining by facets
- The saving of searches and items to personal spaces once authenticated.

This was fortunate as there was neither the time nor resources for the sort of large-scale user interface (UI) redesign project that other institutions have undertaken.

However, as the implementation project proceeded it became clear that whilst a total re-design would not be needed, the number of trivial and not-so-trivial customisation requests would be substantial. These customisations can be grouped by increasing levels of complexity, increasing skill requirements and decreasing levels of support that can be expected from Ex Libris.

1. **Back Office Customisation.**

Primo includes a Back Office interface through which the administrator can control how and when *Primo* harvests data from sources, the rules by which that data is processed into a format searchable/displayed within *Primo* and the scopes and facets that enable results to be limited pre- or refined post-search.

All UI customisations done through the Back Office are created within administrator-defined 'views' and the view shown to a user decided either by the user's location (IP address), institution or defined as an URL parameter. This allows the University of Birmingham to present an OPAC view on dedicated library PCs which shows only an advanced search, omits links to online resources and has the University's site libraries as scopes. However the downside of configuring multiple views is that changes are not inherited from one to another – any subsequent customisation needs to be manually applied to all relevant views.

2. Static HTML and CSS.

Beyond the Back Office, customisation extends to the cosmetic layout of the UI. In the first instance this is achieved by editing the 'boilerplate' or static areas of the screen and the CSS (Cascading Style Sheets) which control page design.

As the name suggests, changes to the Static HTML result in fixed changes that apply to the whole site. For instance, changing the links in the footer will apply to all pages within *Primo*. It is not possible using this method to display different links depending on run-time circumstances.

Changes made to static HTML files are encouraged by Ex Libris and, as long as the files are localised (i.e. their filenames changed from the default values) the contents are safe from the effects of service pack updates.

The use of the Firefox browser's 'Inspect Element' functionality to preview and prototype changes was essential in *Primo* customisation. When viewing the *Primo* UI using Firefox, right-clicking on any part of the screen and selecting 'Inspect Element' shows where that element is created in the page's HTML and the CSS that dictate its appearance. Where this functionality excels is that it is possible to manually edit or add CSS rules and the amended page is shown in the browser without affecting other users.

The process for making *Primo* CSS changes was to use Firefox/Inspect Element to locally preview changes, then transfer that change to the *Primo* staging server to produce a prototype visible to Library staff. Routinely – after approval – the staging server configuration is migrated to the production server to make the change live to all users.

As well as changing the appearance of an element, the CSS attribute {display:none;} can be used to hide unwanted elements from view. This is recommended in Ex Libris documentation for the suppression of unused tabs, although it is both inefficient (the suppressed code takes time and network resources to load even if not displayed – of particular concern for users with low-bandwidth and/or mobile devices) and unsecure (any content hidden in this way can be uncovered by inspecting the source code of the page).

3. JavaScript/jQuery in Static HTML.

While changes to the HTML, CSS and images are static the alternative, dynamic changes – i.e. changes dependant on run-time circumstances – can be made by using JavaScript, a simple but powerful scripting language embedded within HTML as commands within the <script> ... </script> tags. This is then executed in the user's browser as the web page is loaded.

(One feature to be aware of is that, unlike server-side processing languages, the JavaScript source code is visible to all users and is not suitable for proprietary/confidential information.)

The *Primo* UI is made up of tiles: ones created by the *Primo* core code (such as the results list), ones created in Java by Ex Libris (in JSP (JavaServer Pages) such as the 'Find Databases' 'light-box') and the static HTML files discussed in the previous section. It is in this latter type of pane that institutions can add JavaScript code to create dynamic content.

The key to the use of JavaScript is to understand how the location within the UI of the static HTML tile dictates when a script is executed:

Header.html and **footer.html** files appear at the top and bottom of every page and so code in them is executed for every *Primo* page. Header code is executed before the page loads so is ideal for page redirection. Footer code, run after the page content loads, can be used for dynamic layout changes. However, it should be noted that footer code is executed before dynamic tabs are created, so it cannot be used to rearrange these.

The **featured.html**, **news.html** and **service.html** static HTML files are used to create the *Primo* Home Page. Code here is executed before the footer is created so should not be used to dynamically change the layout of that pane. In the University of Birmingham customisation these files are used to redesign the home page layout seen in figure 1.

A final static HTML file is **ideasbrief.html** which appears after each page of results. This customisation illustrates the difference between static and dynamic content. A static use would be to provide information on what to do after an unsuccessful search: the 'iRecommend' bullet point in figure 2 below. Alternatively JavaScript can be used to generate a dynamic links to external web searches - the other bullet points in figure 2.

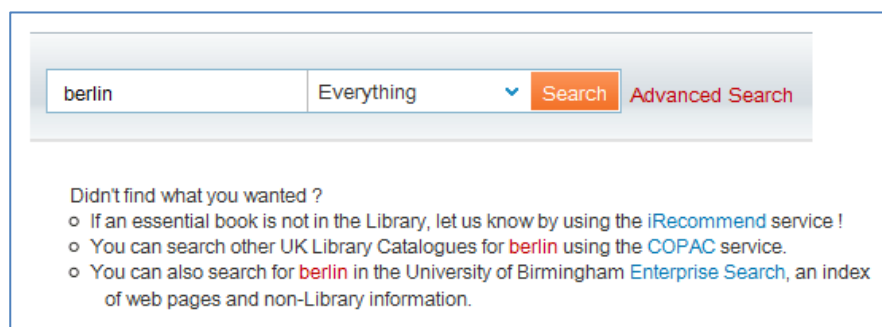


Figure 2: Ideasbrief.html with both static and dynamic content.

4. JSP editing.

In the previous section it was stated that in the *Primo* UI there are JSP (JavaServer Pages) tiles as well as static HTML ones. These are written by Ex Libris in Java rather than HTML and are not designed to be easily edited. As well as requiring a greater level of technical understanding, changing this code is not supported by Ex Libris and is not recommended unless administrators are confident in their programming skills.

However, there are customisations that are simply not possible without resorting to editing JSP. An example is users complaint of the default design of the Find Databases light-box being confusing. No customisation of this feature is possible through the Back Office, CSS allowed insufficient latitude in layout and there are no static HTML files in which to embed JavaScript.

Instead this customisation was achieved by directly editing the search_db_cdata_content.jspf JSP file to rearrange the search box's fields into separate tabs and display or hide each section on tab selection. Some CSS editing was also required to 'smarten up' the redesigned page. It is essential, when editing JSP files, to save copies of files AFTER changes are made as well as before as they are not safe from Ex Libris' service packs.

In addition to customising the look and feel of the user interface, local changes were made via the Back Office to the data harvested by *Primo*. This was done both by adding further data sources (including the University's research publications in PURE⁸, electronic theses in the EThOS repository⁹ and the in-house developed Reading Lists system) and extending the data displayed for existing data sources by editing Normalisation Rules.

As an example of the extension of the template Normalisation Rules, *FindIt@Bham* produces useful links within an item's details tab (as shown in figure 3 below where the highlighted parts of the corresponding URLs are dynamic and derived from the *Primo* data) to provide direction to:

- Search beyond the University of Birmingham using COPAC, a combined catalogue of over 70 UK national, academic and specialist libraries.
- SUNCAT, the Serials Union Catalogue for the UK research community; this is obviously only applicable to serials - items with an ISSN.
- A persistent link back to this item in *FindIt@Bham*. Users are recommended to use this link to reference any items that they find in *FindIt@Bham* or if they need to embed a link to resources in third party web pages or the university VLE. By using this link instead of the 'Link to Resource' URL, *Primo* will ensure that the correct URL is always presented and any authentication is correctly configured using a combination of Shibboleth, EZProxy and/or embedded credentials depending on the resource requirements.

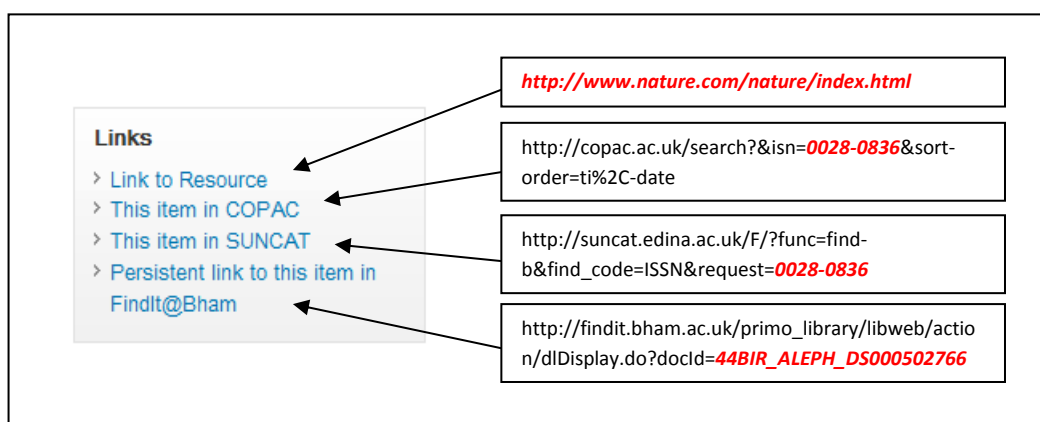


Figure 3: The Links section for a journal (Nature [0028-0836]).

Impact

The full impact of *FindIt@Bham* has yet to be studied, however early indications from usage and feedback are positive.

The number of visits for 'resource discovery' at University of Birmingham (resource discovery is defined as: *FindIt@Bham* and *eLibrary* – the predecessor to *FindIt@Bham* which was the portal to journal and eResource access) almost doubled (a rise of over 96%) between January 2013 and May 2013, compared to the same period in 2012 before the introduction of *FindIt@Bham*. The number of visits on a month-by-month basis for both *FindIt@Bham* and *eLibrary* can be seen in figure 4.

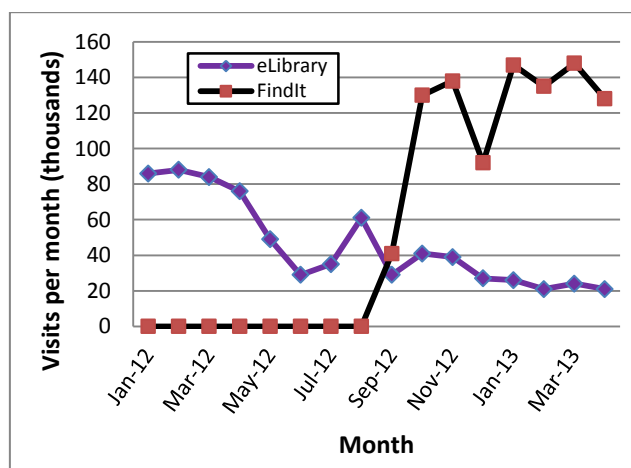


Figure 4: Number of visits per month for resource discovery at the University of Birmingham

Comments from the PTES¹⁰ and PRES¹¹ student surveys which took place towards the end of the 2012-13 academic year, although not explicitly mentioning the service, are suggesting a positive impact too. For example, the four free-text comments below each refer to the 'online library':

- 'Excellent online library resources'
- 'The availability of online and printed resources were particularly commendable, and the research facilities provided by the university library search facility and access to vast number of journals is excellent'
- 'Access to online library is fantastic'
- 'As a PT student I am mainly working from home and self-directed, but the online library facilities are superb'

The Future

FindIt@Bham has continued to evolve since its launch with further enhancements implemented. During summer 2013, *FindIt@Bham* was 're-pointed' to Library Services' new Library Management System (*Aleph*, from Ex Libris¹²). With the new Library Management System, further enhancements to *FindIt@Bham* are likely. A more detailed evaluation of *FindIt@Bham* is anticipated during the 2013-14 academic year.

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