OLE project end-user interface: Issues to consider
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1. Introduction
This document is intended to provide some thinking points and direction for the OLE project in terms of the end-user (library patron) interface. The work here is based on work done developing user interface specifications for Swinburne University of Technology Library’s Request for Tender for a new library system, and is grounded in our experience of our users, and existing research on information seeking practices of lay users.

This document is not intended to be a full user interface specification—indeed, it cannot be since it is not known yet what form OLE will take; however we believe it does present the most important considerations when designing not just the user interface, but what functionalities are available to end users in OLE.

2. Key requirements
These requirements are not exhaustive, but we believe they represent the most important factors in providing a satisfactory end-user experience with OLE.

1. Single point of search
It is clear from the research literature about information seeking that library users do not differentiate between the various types of content provided by the library, and they do not wish to (or in many cases even know how to) search different interfaces to find various types of library holdings. Insofar as it is possible, given the peculiarities of subscription databases, users should be able to search all library holdings—electronic and physical—from a single search box.

2. Result usability
A huge part of Google’s search market dominance (which exists even among academics) is its excellent result ranking. It is well known that users rarely look beyond the first page of search result, so for a search engine of any kind to be effective, the most useful results must be in the first page. We understand that it is difficult to present results from different sources in a way that combines them effectively to allow users to select those most useful to their purpose, nonetheless for

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OLE’s interface to present a viable alternative to Google for library resources some solution to this dilemma must be found.

In addition to presenting highly relevant results, the OLE interface needs to deal with the three major search result patterns that stymie end users: No results, too many results, and the wrong kind of results.

The “no results” problem can arise from a variety of causes, including inappropriate limits applied to a search before it is run, spelling or typographical errors, or entering too many words (thus rendering the search too specific). Regardless of the cause, when this happens there must be a “way out” for users that can help them run a search which will return (hopefully relevant). In the absence of a way out, many users simply give up in frustration.

When users get large result sets, it can result in information overload, particularly if relevant results are interspersed with not-relevant results. Relevance ranking can help to deal with this problem, as can allowing user to apply search limits both before and after a search has run, however there is no one way to deal with this problem, and OLE has the opportunity to deliver innovative solutions that could be of great benefit to end users.

The problem that users face when they get the wrong kind of results is one that even Google does not handle very well; it occurs when there are many possible ways to solve an information problem, or multiple ways to interpret a query, and the most favoured results in relevance rankings do not meet the searcher’s information need. Facets are one possible way to help users refine results, but suggested search terms may be helpful as well. Again, this is an area where there is dramatic scope to improve the lot of searchers.

Having a single search box isn’t enough to provide good search interface usability, and it certainly doesn’t explain Google’s search dominance all on its own. Results must also be usable, including adequate relevance ranking, a clear and useful display, and assistance for users when things go wrong.

3. Pleasant, engaging, satisfactory user experience for all users

At Swinburne we have found from our user surveys that our users’ opinion of our OPAC is decreasing while OPAC remains the same. This is because the OPAC has kept pace with neither technical innovations, nor visual design, and as such looks and acts dated. Good user experience, though, is not just a matter of presenting a fancy interface with all the bells and whistles; library users are a diverse group of people with diverse abilities, and insofar as is possible all users must be catered to.

Having great design and accessibility on its own is not enough, however. The ability to integrate OLE’s interface into a wider library or institutional web site, and to readily update both the interface and technical capacities of OLE to meet changing trends is imperative for a viable alternative to the traditional ILS.

4. Reflection of human information-seeking behaviour

Human information seeking behaviour encompasses finding material to meet very specific needs (for example “what is pi and how was it discovered”) to more vague
needs (“I want a good book to read”). Specific needs are fairly readily dealt with using search interfaces; however this represents only a small fraction of information behaviour. Browsing is an integral part of information seeking behaviour, and is not well-catered to my current ILS interfaces.

Not only is browsing an important part of information seeking in its own right, but major studies of how humans look for information show browsing and searching to be interleaved activities, and the design of the OLE interface should reflect this.

5. Engagement and customisation
Library users are increasingly used to being able to customise their information environments; setting up feeds of interesting information, rating information sources and classifying information with tags are all increasingly common activities on the web. Even those unused to social media are likely to be accustomed to interacting with online systems insofar as changing passwords and user names.

At Swinburne we have demonstrated that the vast majority of users will interact with online library systems if it is to their advantage to do so; our online renewals system has had significant uptake, for example. This reflects the wider picture in social media—the amount of effort required to engage in an activity is inversely proportional to the number of users who will do so (this means that many more users will assign ratings and tags than will write reviews, for example).

Users are also more likely to engage in customisations that benefit them, so for example tags are often applied by a user so they can “re-find” the information later, or to pass it on to a colleague. Nevertheless, all of these customisations have benefits beyond the individual user; tags increase general findability, and ratings and feeds can be used to generate recommendations. While not all institutions will choose to use such rich interactive functionalities, it is important to provide for those institutions who do wish to provide rich opportunities for engagement with content.

6. Simple path from search results to resources
Often the path from search results to actual access of chosen resources is tortured—this is true for both online and offline resources. Online resources can be difficult to access because of the sense of dislocation many users feel upon leaving the library system (to their minds) unexpectedly, or because databases and online collections require complex actions to reach the relevant resources from the point of entry from a catalogue search. Offline items can be hard to access for users who are away from the library if hold functions are not immediately apparent. For those users in the library, call number systems are not always obvious and easy to understand, and in a large library knowing the approximate physical location of an item can save users considerable time. Insofar as is possible, OLE should ameliorate the access problems that come after relevant items are found in search results by providing paths to resources that are as clear and straight as possible.

7. Seamless interaction with browser technology
Browser technology, while reasonably stable, does undergo changes from time to time (the most recent widely-adopted change being the introduction of tabbed browsing). Moreover, users are used to how browser technology works, and make use of their web browsers’ navigation functionality frequently and automatically. This has two
impacts on the OLE project: whatever the end user interface is, it must assume that users will use the navigation options available in their browser in preference to anything available in OLE, and it must not break them, also, it must not depend on users using OLE’s native navigation functions to get full use of OLE.

3. Scenarios to consider

The following scenarios are adaptations of scenarios developed with an academic library in mind, however scenarios 1, 2, 3 and 4 address problems that would also affect public library users (conceivably 5 does as well, if we imagine someone looking for the latest book by their favourite author, someone with a special interest, or someone who always reads some of the magazines to which the library subscribes).

These scenarios should not be used as specific testing implements for OLE, but rather as things to think of during the design and development of the system.

**Scenario 1: A wanted item is “in” when the user isn’t.**
Julie lives approximately 45 minutes away from her primary campus. She travels to campus three days per week when she has classes, Tuesday, Wednesday, and Friday. On Sunday afternoon before the end of term, Julie is looking for information on psychology and computers for an assignment that the whole class has to complete. She finds one copy of “The Psychology of Everyday Things” is available at the her local campus library, and feels it would be very useful to her studies, but does not have time to work on the assignment until Tuesday evening anyway. She is worried that someone else will find the book, and take it out before her. How will OLE help Julie?

**Scenario 2: Difficult search terms**
Martin has just seen a documentary on the financial plight of African nations, and is interested in the impact of foreign aid on local production in Africa. What kind of search results will Martin get if searches for ‘aid africa’.

**Scenario 3: Abusive user generated content**
Joe is a computing student who has just failed a course that he feels he did not deserve to fail. In a rage, Joe attempts to add user content to the books used for the subject, including obscenities and racial slurs about the lecturer, who is a different ethnicity from Joe. Because Joe has a computing background, he assumes there is likely to be a filter on user generated content, so he also uses some inappropriate words in Swedish, a language he learned on exchange, and some “creative spellings”. How will attempts to add abusive content be dealt with? Assuming that some offensive content does make it through and is noticed by another library user, what happens? If Joe were to become a persistent offender, what actions would be possible to deal with this problem?

**Scenario 4: Query refinement**
Ella is a sociology student in her first year. She needs to write an essay on the social costs of adolescent binge drinking in New Zealand, so she types ‘social costs of adolescent binge drinking in New Zealand’ into the search box, and gets no results—how will OLE help her generate more helpful search terms?
Ella changes her search to just the words ‘binge drinking’, and gets a large result set, but in skimming the first page, she notices that many of the articles are about adults, or non-New Zealand contexts. How will Ella refine her result set?

Ella has selected several excellent papers for her essay, but is worried that she hasn’t found everything useful, and tries to think of other query terms that might return useful results. What help will OLE provide in coming up with these?

Scenario 5: Keeping up to date
Xia is a neuroscience student in her first year of graduate studies whose advisor has recommended she read the journal ‘Science’ regularly. How will she find this journal using OLE? Xia finds she very much enjoys the articles in ‘Science’ and would like to read other journals and books that are similar. How will OLE help her find these resources? Xia finds she has trouble remembering when new issues of ‘Science’ are due to come out, and also discovers that she is searching quite frequently for new materials in her area. What can OLE do to help Xia stay up-to-date?

Scenario 6: Unsearchable databases
Chandra is a third year business student doing a course on workplace relations. He is working on an essay on industrial relations in Canada, where he needs not just books and scholarly sources, but legislation and case studies. He vaguely remembers a librarian saying something about legislation not being searchable from the normal search box on his first year library tour, but he cannot remember what he was supposed to do about it. How will OLE help Chandra find all the resources he needs?

Scenario 7: The multidisciplinary researcher
Dr Jones is a researcher in computing who has well developed search skills in his field. He is writing a paper with one of his graduate students and a colleague from another institution about using mobile phones as an aid in pedestrian navigation. He knows all about interaction with small screens in many environments, but knows little about the history and development of technological aids for navigation (for example car GPS), nor about the human psychology/neurology surrounding navigation. He needs some background of the psychology and neurology aspects of the problem, and he needs the most cited and most cutting edge articles about human navigation and navigation technology. He searches for ‘human navigation’ and ‘navigation history’, and gets results that are unsatisfactory; he knows little more about the psychology of navigation than when he started, and the history of navigation has lead him to learn about longitudes and sextants, but not GPS interfaces. What will OLE do for Dr. Jones?

4. Final remarks
Typically open source products have not had good usability. There are a number of reasons why this may be the case, from “feature creep” (more and more functions haphazardly added to an interface) to the do-it-yourself culture around many open source products (programmers design interfaces for programmers—and programmers and laypeople need very different things from an interface).

Nonetheless, there are a number of open source products with good user interfaces (for example the Mozilla suite), and some of the currently available open source
library products are more end-user focused than many of their commercial counterparts. The OLE project is ideally placed to design and develop a product that makes for an excellent user experience for both librarian users and end users, however this result requires deliberate planning—interfaces that are not planned are rarely user-friendly. Given that OLE will be open source, it is also advisable to have a plan for maintaining or improving usability into the future of the project.

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