How do users search?

Examining user behaviour and testing innovative possibilities within the CREE project

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Introduction

• The CREE Project
  • Part of the JISC Portals Programme
• User evaluation
  • How do users want to search?
• Technical development
  • Portlet development using JSR 168 and WSRP
CREE: a JISC Project

- Joint Information Systems Committee
- UK Government Agency supporting post-16 education
  - Network (SuperJANET)
  - Content
  - Advice
- Development
- $1.4 million per year on portals
A range of portal development projects

Each supports:

- Resource discovery across distributed multiple resources
- Presentation
- Use of open standards e.g., Z39.50, OAI, RSS

Each has its own discrete website
Where does CREE fit in?

- Portals have assumed user will come to them
  - Better taking the portals, or portal functionality, to the user
- Embedding in institutional contexts
- CREE
  - Investigating whether users find this valuable
  - Testing portal technologies to enable embedding
PORTAL project

• Presenting national Resources To Audiences Locally

• Examined the presentation of external content and services within an institutional portal

• Very keen, particularly on library resources

• Purpose and selection needs to be clear
Extending PORTAL: CREE

- Contextual Resource Evaluation Environment
- Evaluating the use of resources
  - Specifically Internet search tools (portal and non-portal)
- Placing these in different contexts
- Institutional portal context at Hull is uPortal
CREE: a partnership

- e-SIG, University of Hull
- OUCLS, University of Oxford
- EDINA, University of Edinburgh
- Archaeology Data Service, University of York
- Newark & Sherwood College
- instructional media + magic, inc.
User evaluation

• How do users want to search?
• How do they currently search?
• What requirements do users have for searching?
• How might different contexts affect searching?
CREE Survey

• National survey carried out
• September - October 2004
• >4500 responses
• 2500 of them came from Oxford!
• Used Multimedia Flash-based card sort toolkit
If you were able to search more than one online resource at a time, what priority would you give to the order in which your search results were displayed?
CREE Focus groups

- 13 groups held: 6 staff and 7 student
  - >60 people from across disciplines
- University of Hull and University of Oxford, Newark and Sherwood College
  - Including online focus group
- Testing results from the survey
- Gathering experience and views in depth
What did the survey find?

- 85% used Internet search tools daily
  - 61% used them daily for learning, teaching or research
- 67% used subject-specific resources
- 68% used the local library catalogue at least weekly
  - 54% used other library catalogues at least monthly
What search tools are used?

- Google!
  - Used frequently by over 90%
  - Yahoo!, Ask Jeeves, Altavista also used
- Nationally maintained subject-specific resources
  - Second in popularity to Google
  - Users are very aware of them
What search tools are used?

• Focus groups found that:
  • Google is used by everyone
    • Usually as first choice and starting point
    • Sometimes as last resort!
  • But users are aware of and use more specific search tools (especially electronic journals)
  • Choice of tool is according to need
Further focus group findings 1

- How search tools are used depends on purpose of search
- Assignments - whatever can be found
- Research - more considered approach
- Quick use can lead to later advanced use
Further focus group findings 2

- Two search strategies are used
  - Discovery - when nothing is known
    - Google, bibliographic databases
  - Location - when item is known
    - Library catalogue, local and other
- Preference for searching only those resources that are available (i.e., can be located)
Simultaneous searching?

Would you find it useful?

- **Always**
- **Depends on search**
- **Never**

Catalogues and Internet search tools:
- Always: 21
- Depends on search: 72
- Never: 7

Library catalogues:
- Always: 45
- Depends on search: 51
- Never: 5

0 25 50 75 100
Simultaneous searching

- Focus groups agreed that simultaneous searching was a good thing, but with caveats
- Saves time
- Google and others!
- Needs to be done well, or results are not usable
- Depends on type of search
Search tools and the LMS

Do you use Internet search tools whilst using an LMS?

- Never: 31%
- Not very frequently: 30%
- Frequently: 31%
- Every time: 9%
Do you use library catalogues whilst using an LMS?
Searching whilst using an LMS

- Users with greater familiarity of using an LMS showed a higher frequency of using search tools
- Large proportion of users do not use search tools whilst using an LMS
Searching from within an LMS?

Would you find it useful?

- Always
- Depends on search
- Never

Searching resources from within an LMS

- 25
- 65
- 11
Searching whilst using an LMS

- Focus groups had a strong preference for multiple windows
- Allows control of the search tools used
- Considered to be as quick
- Access to quick reference tools considered useful, though
- Dictionary, thesaurus etc.
Displaying search results

What priority would you give to displaying different results?

- Relevance: Very important - 70, Important - 27
- Subject: Very important - 27, Important - 43
- Internet resources: Very important - 30, Important - 36
- Local: Very important - 13, Important - 42
- Other: Very important - 19, Important - 17
- Date: Very important - 10, Important - 23
Displaying results in the LMS

Would you like search results to appear within the LMS?

- Yes: 46%
- No: 17%
- I don't know: 37%
Focus groups were more concerned with the way results were displayed, not the order.

Preferred results sets to be separate, not a single list.

If a single list, then de-duplication is a priority.
Keeping informed

Would you like to be notified of new resources as they become available, and how?

- By email (46%)
- Through local LMS (15%)
- Through local portal (16%)
- Not of interest (12%)
- I don't know (11%)
Technical development

- Test out how users wish to interact with portal search tools in different contexts
  - Institutional portal
  - LMS
  - Outside of formal frameworks
- Creation of interactive search interface demonstrators for users to view
Testing portal standards

- For testing in portals and related frameworks
  - Developing portlets using open standards
- JSR 168
- WSRP
- Examine the relationship between these
Re-purposing existing tools

- JAFER - Z39.50 engine for searching library catalogues (and other) - Oxford
- GetRef - Metasearch engine for searching bibliographic databases - EDINA
  - Including GetCopy - OpenURL resolver - EDINA
- Archaeology Data Service Z39.50 search
- Google
Development path

• All project partners concluded that JSR 168 was the simpler development route
  • JSR 168 portlets developed for all so far

• JSR 168 portlet is basis for WSRP portlet
  • JAFER the first example of this
  • ADS now working via this route as well
  • Google being developed
CREE portlets screenshot

JAFER portlet

Search Library

Title

Author

Submit Clear

ADS Portlet

ADS: ARENA Portlet Search:

This portlet has been designed to search the ADS: ARENA Target.

Please choose When and What to search in and around the city of York, UK.

When: Neolithic

What: Religious, Ritual and Funerary

Search

Google Portlet

maximized help

GetRef portlet

Please enter a term for searching GetRef

Title

Submit
Your search has found 116 records: viewing records 11 to 20

- Philip Larkin and English poetry /Whalen, Terry.
- Philip Larkin of England /Weatherhead, A. Kingsley1923-
- Philip Larkin :after symbolism /Everett, Barbara.
- James Larkin :Irish labour leader, 1876-1947 / by Emmet
  LarkinLarkin, Emmet J., 1927-
- Philip Larkin :his life and work ; catalogue of an exhibition
  held in the Library of University College, London, 4 November
  - 5 December, 1986 /Dyson, Brian.
- The Labour Archive at the University of Hull /Saville,
  John.
- Philip Larkin /Brownjohn, Alan,1931-
- Larkin at sixty /Thwaite, Anthony.
- Philip Larkin and English poetry /Whalen, Terrence
  Anthony,1944-
- Poets in their time :essays on English poetry from Donne to
  Larkin /Everett, Barbara,
- Philip Larkin :his life's work /Rossen, Janice,1955-
**Author:** Whalen, Terry.

**Title:** Philip Larkin and English poetry /

**Publisher:** Macmillan,

**Description:** x, 164 p ;23 cm

**ISBN:** 0333398165

**Locations:**

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<tr>
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<th>Shelfmark</th>
<th>Status</th>
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<tr>
<td>Bodleian</td>
<td>27961 e.899</td>
<td>In place</td>
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<tr>
<td>Bodleian</td>
<td>SE.12L 18. 7</td>
<td>Available</td>
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<tr>
<td>English Fac.</td>
<td>P57.71WHa</td>
<td>Available</td>
</tr>
<tr>
<td>Hertford</td>
<td>M 70 LAR/WHa</td>
<td>Please check shelf</td>
</tr>
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</table>
1. An image analysis approach for automatically re-orienteering CT images for dental implants
   Computerized Medical Imaging and Graphics, vol 28 (2004), issue 4, pp 185-201
   Cucchiara, Rita; Lamma, Evelina; Sansoni, Tommaso

2. The signal to move: D. discoideum go orienteering.
   Science (Washington D C), vol 300 (2003), issue 5625, pp 1525-1527
   Kimmel, Alan R.; Parent, Carole A.

3. Respiratory gas exchange and lactate measures during competitive orienteering.
   Medicine &amp; Science in Sports &amp; Exercise, vol 35 (2003), issue 4, pp 682-689
   Smekal, Gerhard; Von Duvillard, Serge P.; Pokan, Rochus; Lang, Karl; Baron, Ramon; Tschank, Harald; Hofmann, Peter; Bachl, Norbert

4. Analysis of performance in orienteering with treadmill tests and physiological field tests using a differential global positioning system
   Larsson, Peter; Burlin, Lennart; Jakobsson, Erkki; Henriksson-Larsen, Karin

5. Two cases of tularemia after an orienteering contest on the non-endemic island of Bornholm
   Scandinavian Journal of Infectious Diseases, vol 34 (2002), issue 1, pp 76
   Hansson, Christer; Ingvarsson, Tom

6. The use of dGPS and simultaneous metabolic measurements during orienteering
   Larsson, Peter; Henriksson-Larsen, Karin
Title: An image analysis approach for automatically re-orientering CT images for dental implants
Authors: Cucchiara, Rita; Lamina, Evelina; Sansoni, Tommaso
ISSN: 0895-6111
Language: English
Abstract: In the last decade, computerized tomography (CT) has become the most frequently used imaging modality to obtain a correct pre-operative implant planning. In this work, we present an image analysis and computer vision approach able to identify, from the reconstructed 3D data set, the optimal cutting plane specific to each implant to be planned, in order to obtain the best view of the implant site and to have correct measures. If the patient requires more implants, different cutting planes are automatically identified, and the axial and cross-sectional images can be re-oriented accordingly to each of them. In the paper, we describe the defined algorithms in order to recognize 3D markers (each one aligned with a missed tooth for which an implant has to be planned) in the 3D reconstructed space, and the results in processing red) exams, in terms of effectiveness and precision and reproducibility of the measure. (C) 2004 Elsevier Ltd. All rights reserved.
Subjects: Radiation biology – Radiation and isotope techniques
ADS search

Heirport Lite

Search:
Please enter What, Where and/or When search parameters:

What: 
Where: 
When: 

Search
ADS preferences

HEIRPORT lite

Edit:

Please make your choices from the following options. Remember to click the 'Commit changes' button found at the bottom of the page for the changes to take effect!

Choose your resources:

<table>
<thead>
<tr>
<th>Database</th>
<th>Speed</th>
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<tbody>
<tr>
<td>ADS Catalogue</td>
<td>medium</td>
</tr>
<tr>
<td>NMR of Scotland</td>
<td>fast</td>
</tr>
<tr>
<td>Portable Antiquities</td>
<td>medium</td>
</tr>
<tr>
<td>SCRAN</td>
<td>fast</td>
</tr>
<tr>
<td>HEIRNET Register</td>
<td>slow</td>
</tr>
<tr>
<td>Excavation Index for England</td>
<td>slow</td>
</tr>
<tr>
<td>Durham SMR</td>
<td>medium</td>
</tr>
</tbody>
</table>

How many results to fetch? 50

How many results to display per page? 10

Commit changes
Google JSR 168 portlet

- im+m CREE partner development
- Uses the Google Search API
- XSLT for presentation layer
- Role based presentation
- Includes View, Edit and Help Modes
- Unlimited paging of search results
Google portlet - view mode

Search results are in View mode
Role based view

Different view according to role
Google portlet - edit mode

Can change parameters for the portlet
Google portlet - help mode

Contextual help during search
Portlet functionality

- Searching
  - Library catalogues, bibliographic databases, subject-specific resources
  - Single and multiple targets
- Target and preferences selection
- Saving and exporting results
- Link to other portlets
How will this be used?
CREE Scenario 2

My Permeable Portal

Threaded Discussion

Term/Concept/Thing?

Google

LibSearch
CREE Scenario 3
CREE Scenario 4

My Permeable Portal

Threaded Discussion

Term/Concept/Thing?

Google Results

Book/Journal

LibSearch
CREE Scenario 5
Demonstrators

- Institutional portal
  - Google, library catalogue, GetRef, ADS, RSS feeds
- LMS (webpage mock-up based on Sakai)
  - Google, library catalogue, zetoc, ADS, Dictionary
- Webpage
  - Google, library catalogue, zetoc, ADS
- Resource Discovery Network
CREE outputs - out soon!

- Full survey and focus group evaluations
- Report on portlet development
  - Ongoing to incorporate new features and WSRP
- Literature review
- Results of user testing with demonstrators

http://www.hull.ac.uk/esig/cree/documents.html
Thank you

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http://www.hull.ac.uk/esig/cree