

The CREE (Contextual Resource Evaluation Environment) Project: evaluating contextual use of Internet search tools

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Introduction

The CREE project [1] is funded by the JISC within its Portals and Presentation Programme and is a partnership between the Universities of Hull, Oxford, Edinburgh and York, plus Newark and Sherwood College and the US consultancy, instructional media + magic. It is running until July 2005. The JISC Portals Programme [2] has developed a range of portals in the past 2-3 years, investigating different aspects of portal functionality and how different types of content can be presented through a portal. As part of these projects a number of user requirements assessments took place, and these were valuable in guiding the technical development. Most of these assessments, though, were focussed on the individual portal and based around the website that was the main, and often only, means of presentation for the portal.

During the time the portal projects were taking place, technology moved on to the stage where it has now become possible to embed portal and other search tool functionality across different technical environments and through different presentation environments. Search forms have long been able to be embedded within web pages, but standards have now also been developed to enable embedding within institutional portal frameworks, allowing them to be sited alongside learning, teaching, research and administrative activities. Embedding within virtual learning environments is also becoming possible. This changing technical environment required further investigation of user requirements to more fully understand the broader issues of presenting Internet search tools to users and the contexts in which it would be most useful to have access to these.

The CREE project is addressing both the user requirements and technical issues. The project is developing a number of search tools for use within an institutional portal so that access via this route can be contrasted to embedding within web pages and access directly through the home website of the search tool in question. User requirements are being evaluated through surveys and focus groups, plus the development of a range of demonstrators that users can see and respond to whilst undertaking a variety of search tasks.

Portals

The portals developed within the JISC Portals Programme are tools that are able to search content from disparate sources and aggregate this for presentation to the user. They are focussed on content that is available elsewhere and bringing this together. For example, projects covered subject-based, bibliographic, image, and geospatial content. Another looked at how portals can serve particular user communities. Institutional portal frameworks, such as uPortal [3], Oracle Portal [4], IBM WebSphere [5] and Sun JES Portal [6], allow an organisation to aggregate and personalise content that is largely, though not necessarily exclusively, available inside the organisation. The CREE Project is, in part, investigating the boundary of these two different types of portals, allowing external information to be surfaced alongside internal information for ease of access to both.

User requirements

To gain an initial baseline of views and requirements of using Internet search tools a national survey was carried out during September and October 2004, receiving over 4500 responses from across HE and FE, and across staff and students [7]. Eleven focus groups have also been held across project partners, backing up the findings of the survey in greater detail. Full results of both the survey and focus groups are available through the project website.

This body of data has provided an excellent grounding. It has clearly shown that Internet search tools are used a great deal, for work as well as leisure. Over 80% of users made regular use of them on a daily basis (covering both Google and subject-oriented resources) and two-thirds used such tools regularly as part of their learning, teaching or research. The survey has also provided initial opinion on the idea of presenting such search tools within alternative environments as opposed to through individual home websites. Without being able to see this in action, many preferred to express curiosity and a 'maybe' approach to what such resource access might mean, though there was clear interest. A similar, though stronger, curiosity and interest was expressed on being able to search multiple resources at the same time. It is through the second and main part of the user requirements work within CREE that these findings are being tested further, using demonstrators.

Technical development

A number of different search tools are being adapted for presentation within an institutional portal environment and for use within the demonstrators. These are:

- The JAFER toolkit [8] – this tool from the University of Oxford provides access to z39.50 and SRW-compliant resources, both individually and across multiple resources. CREE is making use of JAFER for access to library catalogues. Searching across these was regarded to be highly desirable within the survey and focus groups.
- GetRef [9] – this tool from EDINA at the University of Edinburgh also makes use of z39.50 to search across multiple commercial bibliographic databases. This complements access to library catalogues. This type of multiple resource access was also considered desirable in the focus groups, but with reservations about how it would be presented to the user.
- HEIRPORT [10] – a subject-specific cross-search engine focussing on historic environment and archaeological resources, originating within the Archaeology Data Service at the University of York. This specific type of search tool will be contrasted against the broader searches provided by the other tools.
- Google – the ubiquitous web search engine was, not surprisingly, the most highly recognised and used search tool within the survey. CREE offers the opportunity to site this alongside the other search tools to investigate how users interact with them when presented together.

Adaptation of these tools has involved their development as portlets, individual services that can be presented alongside each other and other services within an institutional portal framework. Two specifications exist to enable this adaptation:

- JSR 168 [11] – this Java-based specification lays down a standard way for the portlet to communicate with the portal framework. Tools with a JSR 168 interface are thus able to talk to the portal framework and be presented for use. JSR 168 is primarily aimed at the presentation of local services within the portal and is limited to Java-based portal frameworks.
- WSRP [12] – the Web Services for Remote Portlets specification enables tools and services to expose themselves using a Web Services interface. The portal framework can connect to such services and present these. WSRP is designed for the presentation of remote services and can be used within any portal framework that is WSRP-compliant.

Both specifications are being used within CREE, in order to best assess which one suits the type of tools we are working with. Initial work favoured JSR 168 [13], though subsequent development of a WSRP toolkit to enable JSR 168 portlets to be themselves exposed as WSRP portlets has also enabled use of the latter. Developments are ongoing to establish what level of functionality can be effectively delivered via a portlet when compared to the native tool.

Summary

The CREE project is aiming to discover both how users make use of Internet search tools and the contexts in which this use will be most beneficial. The user requirements investigations are providing a thorough base upon which further investigations can take place in assessing these two aims. The technical development work has allowed the project to carry out this user requirements analysis using the latest technologies and to test a range of environments within which Internet search tools could be placed. This evidence will inform the future development of library services and the way in which Internet search tools are presented to users generally.

References

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