Building Institutional Repository Infrastructure in Regional Australia

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Introduction

The RUBRIC (Regional Universities Building Research Infrastructure Collaboratively) Project began in late 2005 and has been tasked to meet the needs of smaller and regional universities in Australia and New Zealand in developing sustainable infrastructure for the deployment of institutional repositories. To achieve this task the RUBRIC project is working with five core partners in the evaluation, testing, development and deployment of institutional repository infrastructure. In working with the core project partners, the FOSTER (Facilitated Online Sources Toolkit for Establishing Repositories) toolkit is being developed. The development of FOSTER, its anticipated use and outcomes thus far are the focus of this paper.

The need for FOSTER

Early in the project, the RUBRIC team recognized, based on previous experience, the need for a resource which could assist an institution in establishing institutional repository infrastructure. A sizable task to any institution, the establishment of such a repository is especially daunting to small and regional universities who do not typically have the resources to spare for such a project.

RUBRIC also found that some institutions were not familiar with institutional repositories and their use. This led to some of the partners needing a business case to put to the institution as to why that institution needed an institutional repository. Circumstances such as IT department restructuring and implementation of new learning management systems caused confusion as to the need for yet another system. RUBRIC recognized that these types of difficulties would not be unique and that the resources in building such a business case would be useful to the broader community.

RUBRIC decided that a collection of resources such as the ones needed for a business case would be not only useful, but of great importance to a fledgling institutional repository. Not only the resources though, but also the mentoring in using these resources would be extremely important. This is particularly the case for smaller and regional universities for whom the project is a greater risk.

Some of the key difficulties faced by regional and smaller universities may include "reduced capacity for risk-taking with experimental or immature technologies; limited infrastructure resources; limited staffing resources [...]" (Lowe, 2006). However, there are also some advantages that smaller and regional universities may

have over larger institutions including "greater agility for adopting innovations with less bureaucracy; well integrated intra-institutional infrastructure which facilitates the delivery of projects that require a range of skills from different departments; [...] close links between research, learning and teaching as the practical application and dissemination of research [being] of major importance to regional universities..." (Lowe, 2006).

The development of the FOSTER concept is being designed to assist the RUBRIC Project partner institutions in understanding not only the types of software packages available for this purpose, but also what is required to implement a successful institutional repository and what is needed to ensure sustainability beyond the project.

FOSTER Development

The FOSTER (Facilitated Online Sources Toolkit for Establishing Repositories) toolkit is being developed in response to a need which was identified by the RUBRIC Project in early 2006, of having a centralized, accurate collection of resources for assisting in the establishment of institutional repositories. In particular, the focus is upon the establishment of institutional repositories in regional and smaller universities.

FOSTER Information Days

Keeping in mind the primary aim of mentoring partners, FOSTER Information Days were created as a means by which RUBRIC Central team members and project partners could join together to share information and experiences. These days have allowed the group dynamic to bring out issues important to the partners, and not surprisingly, there are similar issues for each university. By identifying these issues and establishing their priority in such a project, the development of resourcing the issues is able to progress. The Information Days have allowed such discussions to take place and following the Information Day, issues discussed are written into the RUBRIC wiki.

Another feature of the Information Days has been the development of group trust between RUBRIC Central team members and the project partners. The development of this trust has been of significance in the progression of the project. By providing the opportunity for face-to-face interaction, the partner project managers are able to discuss their issues in an informal setting. The face-to-face interaction also facilitates brainstorming sessions, in which RUBRIC Central team members and partners are able to collaboratively decide on priorities and discuss issues.

The FOSTER Information Days have also provided an opportunity for RUBRIC Central to discover where strengths and weaknesses in the current levels of knowledge exist. Each partner institution brings different experiences to the project and the provision of face-to-face interaction provides an open forum for these experiences to emerge. Through this, RUBRIC Central has been able to find out which areas of institutional repository infrastructure development need the most focus, particularly for smaller and regional universities.

Collaboration

Since the early days of the FOSTER concept, collaboration with other more experienced bodies has been greatly valued. Efforts were made to talk to other parties who have been involved in institutional repository infrastructure development for a while. By discussing history, difficulties, and future plans with these other parties, RUBRIC was able to create a bigger picture for the smaller and regional universities who are the project partners. Being able to note the difficulties that may have been faced by other universities is of great value to a fledgling project.
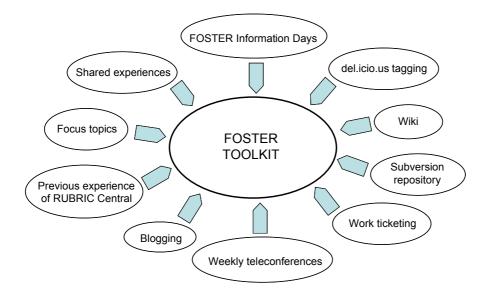
A common theme that emerged during talks with more experienced parties was the lack of documentation of best practice in the development of repository infrastructure within Australia. This lack means that smaller and regional universities are placed in the difficult position of not necessarily knowing which way is the best way for that individual institution to implement an institutional repository and yet also not having the resources to spare to find out.

Another aspect of the collaboration undertaken was a review of the previous experience of the RUBRIC team members. Most of this experience came from three members of the team who had previously been involved in establishing an institutional repository for the University of Southern Queensland. This project had been carried out over a period of 18 months and much had been learnt about the difficulties of implementing such a system at a small regional university.

The final aspect of collaboration has been discussions with the project partners. Most of the partners do not yet have an institutional repository at their university, so the information gleaned from these partners has included expectations, perceived needs and wants, and a review of the resource restrictions within which they are able to operate. As all the project partners are regional universities, the resources available to them are of a similar nature, however there are also unique needs for each institution which need to be taken into account.

FOSTER Tools

In developing the concept of FOSTER, RUBRIC is making extensive use of various communication methods which will eventually feed into the final Toolkit. The primary tools being utilised include a wiki, a subversion repository, tagging, and teleconferencing.

Using a wiki has emerged as a useful way in which to not only gather feedback, but also to further discussions. The wiki is also another way in which RUBRIC Central is able to mentor project partners in the establishment of institutional repository infrastructure. RUBRIC Central is able to direct and suggest discussions and topics which emerge from the wiki at the same time as encouraging participation by partners. The informal structure and writing style of the wiki mean that basic concepts and topics are able to develop relatively freely and with input from all. The wiki provides an environment in which the basics of the FOSTER Toolkit can grow throughout the course of the project.

The wiki also provides a test bed for issues involved implementation of this type of infrastructure and will enable the longer term product of the FOSTER Toolkit to be a more refined product, and better written. By using the wiki in this way, the best sources of the information gathered will be selected for the final product.

RUBRIC uses a subversion repository to house all documentation. An emphasis has been placed on documenting all possible procedures and guidelines produced by the project, in order to provide maximum assistance to project partners. The subversion repository allows RUBRIC Central team members and project partners to have centralised, versioned document storage. Although access to the subversion repository is currently limited to RUBRIC associated parties, it also contains a public section for technical reports which are freely available.
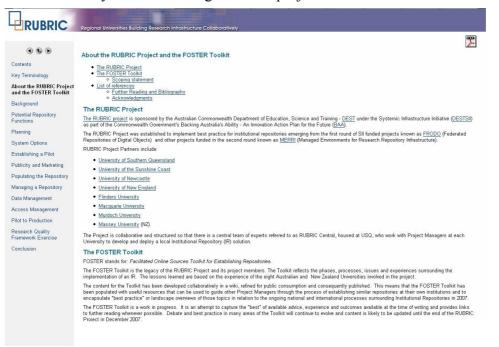
RUBRIC also makes use of social tagging by using del.icio.us (2006). Several main RUBRIC tags have been created and all project participants are encouraged to tag resources they find useful and informative with an appropriate RUBRIC tags. These tags can then be monitored by RSS feeds or similar, allowing all interested parties to share in the discovery of these resources.

Teleconferences are another important tool in use by the RUBRIC Project. The teleconferences are held weekly, or more frequently as the need arises. These allow project partners to stay in regular contact with RUBRIC Central when distance does

not permit and issues facing partners are regularly discussed and monitored. Monitoring of these issues and tasks involved in solving them is done by use of a work ticketing system, using Trac (2006). RUBRIC Central team members may be assigned tickets involving further research into an issue, or troubleshooting of a system. Each of these tickets can then be tracked by interested project partners to the point of resolution. This allows transparent and interactive communication, while also providing historical documentation as to the work being carried out by RUBRIC Central.

Intended Use of FOSTER

The use of the final product FOSTER toolkit is anticipated to be primarily by regional and smaller universities, but may also be of use to larger institutions who are undertaking the establishment of institutional repository infrastructure. The FOSTER toolkit will have a primarily Australian and New Zealand focus, however may be of use to the broader international community. The collection of resources that it is anticipated will eventually make up the Toolkit will provide a valuable and succinct resource for anyone undertaking a similar project.

Ongoing development of FOSTER

The information sources which are being used in the development of the FOSTER toolkit are being gathered from across the globe. By utilising resources from such a broad pool, the FOSTER toolkit will be a valuable resource for the intended audience of project partners and other small and / or regional universities in Australia and New Zealand. The development of these resources into the final Toolkit will commence

closer towards the end of the project, when it is anticipated that the collection will be gathered together as a complete resource.

The categorisation of FOSTER will be based upon current perceived needs of the RUBRIC project partners along with emerging best practice requirements. It is anticipated that these categories will alter throughout the development of FOSTER, as the needs of project partners, and others, change.

Feedback is seen as an important part of the development of FOSTER, primarily because of the value of others' experiences. The utilisation of several tools by which feedback can be created and received provide methods for gathering of feedback. By using the wiki, the teleconferences, and face-to-face interaction, RUBRIC is able to regularly gather feedback from project partners. As the development of FOSTER progresses, feedback will continue to be sought from partners as to their perceptions of usefulness and relevance of emerging topics.

The continuation of the community of trust built up between project partners and the RUBRIC Central team will continue to be important. This includes open discussion at FOSTER Information Days and during teleconferences, as well as allowing for editing of and adding to other people's wiki pages. The emergence of important issues within each institution will continue to provide direction for the development of the FOSTER concept.

Difficulties faced in developing FOSTER

While developing the idea of the FOSTER concept was relatively simple, the resourcing of it has proven a challenge. The FOSTER concept was not in the original RUBRIC Project bid documentation and so was not planned from the outset of the project. The emergence of a number of issues coupled with the desire to archive and make publicly available any solutions the project found fuelled the beginnings of the concept. This also meant however, that the development of the concept needed to be resourced, including finding staff. Once the realisation came as to the potential impact of this resource, it was important to ensure the continued development. Staff on the RUBRIC Central team have in some cases had to expand on their normal duties to assist with the development. Research on the issues often requires extensive expenditure of effort and time, causing the need for staff to be solely dedicated to this task. While some information has been found as part of the normal progression of the project, there has also been the need to have someone available to research and document this information in an appropriate manner.

Another difficulty faced is the continued development of the tools being used. The use of the wiki and the del.icio.us tagging was not expected to be such a success and was therefore planned for use on a smaller scale. While the larger scale use is still conducive to the FOSTER concept development, RUBRIC Central can now see in hindsight that planning for their use on a larger scale would have provided greater flexibility for the future. At this half-way point in the project, it is possible that a re-think of the structure and use of these resources may provide this flexibility.

It is anticipated that the move from wiki- and discussion-based development to the more static Toolkit will require a different approach for the construction of the Toolkit. The end product FOSTER Toolkit will have a more structured format and will not provide for commenting mechanisms as are being used currently. Using this

different writing style will allow RUBRIC to accommodate the different audience for which the end product Toolkit is being developed.

Evaluation of FOSTER

The primary perceived usefulness for the end product FOSTER Toolkit is for smaller and / or regional universities in Australia and New Zealand. By having access to such a resource, staff involved in the implementation of an institutional repository would be able to gain a succinct picture of the processes involved, as well as requirements that may face an institution, allowing for better planning of new institutional repository infrastructure.

The full effectiveness of final FOSTER Toolkit is yet to be seen, however initial indications are that the FOSTER concept is a particularly effective tool, especially for its intended audience of smaller and regional universities within Australia and New Zealand. The effectiveness of the tools being used has emerged regularly during the project in facilitating communication and knowledge sharing amongst project partners and RUBRIC Central.

By measuring the importance of the FOSTER concept by the use of the feeder resources and tools, RUBRIC Central is able to monitor the effectiveness and make changes where necessary. Both partners of the project as well as RUBRIC Central make regular use of these tools and the importance of these has been rated highly by all involved. With the dissemination of this information into the final FOSTER Toolkit, it is anticipated that the concept could develop into a resource which could become an important part of repository infrastructure establishment within the broader community as well.

The use of the wiki to facilitate the development of the FOSTER concept has been supported from many of the project partners. In particular, comments have been received as to the usefulness of being able to discuss a topic in a teleconference and then pursue it further through the use of the wiki. The end result of these discussions and wiki topics will then be able to feed into the Toolkit. The dynamic nature of the wiki has been mentioned, and the benefit that is created from having a resource that is not static. While it is anticipated that the Toolkit will be a static resource, the dynamic nature of these feeder resources enables thorough documentation of experiences and knowledge gained during the life of the project.

The varying rates of progress at each institution have revealed another benefit of the wiki, in that the information there can be built on at different times by different people, from the varying perspectives. All these things come together to allow the wiki to develop as an important tool in the development of the FOSTER concept.

Future directions

The FOSTER toolkit is not a static resource, and accordingly may never reach a fully 'completed' state. As the area of institutional repositories continues to develop, and further generations of appropriate solutions emerge, the FOSTER concept and later, Toolkit, will also continue to develop.

Local circumstances and changes to these will continue to influence the development of the FOSTER concept. Possible changes in national reporting workflows, such as the proposed Research Quality Framework (2006), will affect the outcomes of FOSTER.

The use of a wiki, subversion repository, tagging and teleconferences will continue to enable thorough investigation into useful resources which will be included as part of the Toolkit. Further developments in the areas of research and institutional repositories will continue to be monitored, particularly in regards to their effects on the development of the final Toolkit. The development of the FOSTER concept will continue to assist RUBRIC Central in its role as mentor to project partners.

The various stages of development of FOSTER are providing indications of the need for such a collective resource as this. The need for a centralised resource which is particularly focused on smaller and regional universities is essential. As the concept continues to develop, the resources feeding into it will also continue developing, allowing for the establishment of a thorough and effective tool for use by smaller and regional universities within Australia.

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