Final Readings: UPEI's Virtual Research Environment (VRE)

by Lise Brin

School of Information Management, Dalhousie University

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Supervisor: Mark Leggott

Introduction

The following are my assessment and impressions of the University of Prince Edward Island's Virtual Research Environment (VRE) based on my brief participation on the VRE Dev Team, from January to April, 2008.

The VRE Concept

> "an integrated suite of web-based tools supporting a full spectrum of bioscience research, conducted by individual or distributed groups, from initial conceptualization through to the dissemination, publication and archiving of results" (Leggott, 2007, p.2)

Context

The VRE is a concept that has been under development in a number of research institutions (including Oxford) for the past few years, mainly as a means to foster multidisciplinary and collaborative research, particularly as seen in the development of e-science. According to Fraser (2005) it is the very embeddedness of the VRE within an existing framework for research (rather than as a stand-alone offering from an outside provider) that gives it its clout, and offers the possibility for increasing access and results rather than creating yet

another opportunity for digital assets to be lost in an ever-expanding web (parag. 1-2).

The VRE concept is in part a reaction to the rise of Open Access, and a means to controlling the production, distribution and access to scholarly research within those research institutions that create them, with a focus on applying the standards and best practices of that particular field of knowledge to the framework for delivery. Another key point of departure is the assertion by Humphrey (2006) that there are gaps between the various stages of information production within the research process, and that support is needed throughout the entire research cycle to manage the creation, preservation and access of said information to prevent its loss.

Open Source in Libraries

The UPEI VRE initiative not only attempts to redefine the academic library model through support of the entire research cycle, it also embraces Open Source software as the means for achieving this goal. This, despite the documented resistance to Open Source in many institutions, including the academic realm. In a recent article in *Computers in Libraries*, "What Librarians Still Don't Know about Open Source," Chudnov describes one of the most common assumptions, that OSS necessarily implies taking on the customization of software in-house, thereby requiring a set of skills that may not be present in their organization. They do not realize that providers are often available to take on that role in such cases and that many vendors deal in Open Source as well as proprietary software (2008, p.40). Chudnov also recommends that libraries familiarize themselves with the benefits of OSS if only to better understand their options and gain more leverage when negotiating with vendors, when it comes to proprietary software, for example by requesting a clause that requires the vendor to hand over the code should the product be discontinued (p.42).

By contrasting the VRE meetings I have attended with such examples of OSS discussions within mainstream library publications, one quickly realizes that the climate at UPEI's Robertson Library is far from the norm. The very makeup of the team indicates that a different kind of philosophy has taken hold, with librarians and systems and staff working along computer programmers and engaging in experimentation in a variety of directions at once, much of which is as yet unclear.

Chudnov's recommendations are clearly meant for institutions that are just planning a leisurely visit to explore the attractions of Open Source, but are not seriously thinking of settling down into the Open Source community's core principles. Robertson, however, has from the start built into the VRE timeframe the possibility of hosting conferences and hackfests, eventually sharing the code to the VRE and in the meantime participating openly in the larger VRE community. This is not a climate that exists everywhere, and clearly requires buy-in at upper levels of an institution.

Observations on the Progress of the VRE

1) Drupal/Fedora Integration

It is unclear to what extent the integration of Drupal and Fedora (the cornerstone of UPEI's VRE project) has been realized. Display options for items in Fedora collections and their corresponding metadata and bitstreams are vastly improved, but it is as yet uncertain whether the desired seamlessness (with ease of use, search and access as direct consequences) are within reach. Only once this is implemented in an active research project and feedback is collected will we know what work remains.

2) Standardized Design

The standardization of the design and layout for the VREs (using the *NewsFlash* skin, now implemented in the Dev VRE) has been a lengthy process, and has finally achieved a much-needed simplicity. The Dev VRE breadcrumbs are a particularly handy addition when considering that there will likely be users of varying comfort levels, and that site navigations may become complex once a community of users is left to its own devices. As well, the isolation of the outward-links menu (About/Community/Training/UPEI) in the top right-hand corner is excellent, as the previous main-menu placement generated a certain level of confusion when these links took you to pages outside the VRE.

At this point, consistent placement of main menus seems to be a good idea that will simplify the creation of new VREs, but user feedback should determine whether there are larger issues at play that may affect this decision.

3) Training

Since the February 25th User Feedback Session, in which there were a number of requests for additional hands-on training, a number of positive steps have been taken in this direction. The Training VRE has been created and will hopefully include valuable learning objects before long. A number of training sessions at beginner and advanced levels are also in the works for May and June, and a promising “Need Help with Your VRE?” button has been announced, with Cindy taking on the role of liaison who will receive emailed comments sent using this button.

4) Communication Technology

What with the advanced technology being discussed in the context of this initiative, it seems ironic that communication technology (in this case the use of Skype for including out-of-town team members in Dev Team discussions) has been such a hindrance in the past few months...

User Satisfaction

My experience with gathering user feedback for the VREs was interesting in that certain patterns emerged, and a number of additional questions surfaced through this process. It became clear that many concerns were not necessarily generalizable to the whole population of users, but that by and large members of research teams were eager to have their feedback heard.

There were varied responses in terms of early expectations and whether or not these expectations had been met. Some respondents indicated that it was still too early to tell, while others showed some frustration with the learning curve required to become a proficient user of Drupal, not to mention trying to teach it to their user base. Some users responded that it was difficult to get participants to contribute while another suggestion prompted the recent Dev Team effort to allow for postings to forums by way of email rather than through the site. Hopefully this tool will be subject to user testing in order to determine whether it does indeed suit the needs (and user habits) of the research teams.

During the February 25th User Feedback Session, a brief discussion took place regarding the challenge of modifying people's communication behaviours (for example in terms of exchanging documents via VRE rather than through email or other current means), This discussion will be a crucial aspect of research in VRE implementation, and one where feedback and experimentation from the Administrators will be priceless. Encouraging them to think of themselves as vanguard explorers in the expanding area of e-research and making them feel that they are part of the larger VRE research team may help in bringing about such experiments and feedback.

Suggestions and Ideas

1) Relationship Between Dev Team and Users

Based on my participation in the team and mostly on the comments garnered during the User Feedback Session and by way of the user survey, I would say that one of the key elements that needs to be addressed in the short term is to identify and promote a member of the team to take on the role of liaison with the VRE users. Team members reported that there has not been regular contact with the various user groups, and several users reported in their survey answers that they were unaware of any particular person or "guru" they could contact with questions and difficulties using their VRE.

The recent idea of a "Need Help with Your VRE?" button is definitely a big step towards this goal, and hopefully initiatives such as this one will be implemented in the near future. Similarly, the upcoming training sessions will go a long way to cementing this relationship between users and developers. The success of the VRE initiative is tied to its use by researchers. It is therefore paramount that this relationship be maintained and prioritized at all cost.

In addition to becoming a consistent and reliable access point for users, the person taking on this liaison role should ideally undertake another important function while forging this relationship with users: he or she should use this regular contact to test out changes and ideas for interfaces and tools on a set of live, trained subjects. While fresh, untainted subjects might be more beneficial for certain aspects of testing, there nevertheless needs to be more interaction with the various groups of users (not just the most demanding ones) in order to determine the success (or in some cases unexpected complications) of implemented changes. An iterative design model seems ideal for this situation (what with the existing groups of users who have already voluntarily signed up for an experiment in virtual research), whereby every decision is tested out using real subjects and feedback is collected at every step of the way.

Fraser (2005) warns of the risks in trying to develop such an infrastructure too quickly, with active users waiting in the wings with a level of expectations that may not always be achievable (parag. 39-40). Clearly, this is a situation that needs to be monitored and responded to on an ongoing basis.

The one training element that does not seem to have been tackled as of yet is in terms of strategies for Administrators to train or provide support to their own users. A package of resources that can be tweaked to reflect the needs of a particular VRE would be a useful tool to have on hand. It is likely that a small percentage of Administrators are at the stage where they would benefit from this suite of training materials, but as more VREs join on, and as more of them progress, this will become essential.

2) Assessment Form for New VREs

Mark Leggott has suggested that the February 2008 User Survey be adapted to serve as an assessment form during the initial phase of new VREs. This idea seems extremely feasible and promising, especially if the generated goals identified during this project are regularly revisited and reassessed. It is likely that adopting such a process with a number of VREs might bring to the surface patterns in variance between initial and later-stage objectives of VREs, and could help better prepare for such changes in future VRE implementations.

3) Copyright and Intellectual Property Rights

This is an area to which Robertson's Research Librarians may wish to devote some time and energy. The institutional repository model uses a contract that requires the submitter to declare that he or she owns the rights to the material being included prior to uploading the digital object, but to my knowledge the VRE does not implement this sort of document. At the very least, there should be a clear understanding of who is responsible for ensuring adherence to

copyright law between the Dev Team and each VRE Administrator. Support should also be provided to the Administrators to ensure that they maintain a similarly clear communication with their users. As aspects Open Access and Internet copyright law continue to be defined, these will be key areas of which research librarians will need to be cognizant.

4) Privacy and Security

Another area which will need to be thoroughly investigated on a continuous basis is that of data security. The discussion on this subject during the February 25th User Feedback Session highlighted how important a matter this is to researchers who need to safeguard their data. This should become one of the key questions in a new VRE assessment: identifying the type of data to be included, the level of security required and the means for achieving this, whether this be encoding, training of users contributing data, or meticulous and regular verification of the security of the data included in the VREs.

5) Community

It would be beneficial to extend the thinking of the Open Source community to include the members of the research groups, and build in more opportunities for exchange and mutual support among them.

Conclusion

It is still early to predict exactly how this experiment will unfold. Some of the participants' questions at the User Feedback Session and in the User Survey indicated that they wished to hear from other users that the VRE was making a positive contribution to their research project. For the time being, this does not appear to be possible. Those researchers who feel rewarded by their participation seem to be enjoying the process and exploration of new territory in the realm of digital scholarship. It seems uncertain that a seamless, complete VRE (one that supports the entire research life cycle) will be achieved in the

short term. Rather, when one thinks that similar initiatives are being pursued in several other institutions, it seems more likely that by coming together in a year or two and comparing the progress of these separate institutions, a collaborative mash-up of some of these implementations may offer the best results.

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