Building a Virtual Research Environment for the Humanities

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http://bvreh.humanities.ox.ac.uk

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What is a Virtual Research Environment?

Definition of a VRE:

“A set of online tools, systems and processes interoperating to facilitate or enhance the research process within and without institutional boundaries.”

Mike Fraser - OUCS
What is a Virtual Research Environment

- A framework into which tools, services and resources can be plugged, rather than a free-standing product
- More loosely aggregated than a typical VLE
- Joining together existing components in addition to developing new
What is a Virtual Research Environment?

- Research administration
- Resource discovery & access management
- Data creation, use and analysis
- Collaboration and communication
- Research publication, curation and preservation
VREs at Oxford

- Part of UK wide JISC programme
  (~15 projects)
- Three projects at Oxford
  - Sakai VRE
  - Integrative Biology VRE
  - Building a VRE for the Humanities

http://www.vre.ox.ac.uk/
Sakai VRE Project

- **Sakai**: OSS Portal framework originally for VLE use
- **JISC project to extend and adapt for VREs**
  - Lancaster, Daresbury, Oxford, and Portsmouth
  - Oxford integrating Shibboleth authentication system

(Research Technology Services, OUCS)
Integrative Biology

- EPSRC-funded Integrative Biology (IB) e-Science Pilot Project led by Computing Laboratory
  - international consortium; large-scale complex specialised research

- Development of the Grid Infrastructure to support modelling of complex systems relating to cancer and heart disease ‘in silico’
IB VRE: Project to support this with a fully fledged VRE
Building a VRE for the Humanities

- 15 month project (started last summer)
- Capturing user requirements from researchers across the division
- How do the Humanities differ from large scale Science?
- No predefined technology (ground up approach)
- Build 3 to 4 prototypes/demonstrators
Interviewed a broad range of humanities researchers, research projects, libraries and a number of IT support staff.

Interviews covered all IT use as it relates to research:

- Current work practice (libraries, collaboration, finding funding, publishing research)
- Current IT use for above
- Use of local and external tools
User Requirements Survey

Generic Services

- Finding other people and resources
  - ‘does anyone have equipment to scan my slides?’
  - ‘is anyone else interested in...’

- Support for grants and funding

- Information on conferences, seminars, lectures
User Requirements: Tools for research

- **Communication tools:**
  - Video conferencing/Access Grid
  - VoIP
  - Chat facilities/IM

- **Collaborative document editing**
  - Keep track of multiple versions of a draft manuscript
User Requirements: Tools for research

- Locating research material:
  - Search on-line databases
  - Cross Search multiple sources
  - Retrieve and Integrate data from multiple sources (DataGrids)

- Provide a Front End to ease this rather than replacement for existing sources
User Requirements: Tools for research

- A personal working space
  - Store
  - View
  - Organise
  - Annotate

- Share work space to enable collaboration
  - personal collection and notes
  - view/edit remotely
User Requirements: Tools for Research

- Bibliography Management
- Assistance in Publishing online
  - Personal Content Management System
- Links to Institutional Repository
Technology: Portals

- Most common technology for current VREs

- Standards exist:
  - JSR168
  - WSRP (SOAP)
  - enable reuse across portals (or should)
Technology: Portals

But...

- Commonly deployed Portals use own API and...

- VREs not synonymous with Portals
  - Richer applications
  - Desktop widgets (Google Desktop for researchers)
  - Physical devices
  - Mobile devices
Enabling Interoperability

- Metadata
- W3C Standard - Semantic Web technology
  - Resource Description Framework (RDF)
- Annotations
  - e.g. Annotea server
- Describe logical structure with taxonomies/ontologies
  - Web Ontology Language (OWL)
Demonstrators

Currently building the following demonstrators:

- Eighteenth Century Workspace (Jane Austen)
- Application of Physical Tools
- Virtual Workspace for the Study of Ancient Documents
- Research Discovery Service
Eighteenth Century Workspace

- To support a study of Jane Austen’s work
- Current thinking to integrate four online resources:
  - Samuel Johnson, A Dictionary of the English Language (1755)
  - Eighteenth-Century Collections Online (ECCO)
  - Chadwyck-Healy Literature Online
  - British Fiction 1800-1829: A database of production, circulation and reception
Physical Tools

- Physical tools such as communication and novel user interface devices such as digital pen and paper (Anoto) and Personal Interface to the Access Grid (PIG)

It’s all about keeping track of 669 845 157 115 773 458 169 very small dots.
Virtual Workspace for the Study of Ancient Documents

- An interface allowing browsing and searching of multiple image collections, including tools to compare and annotate the researcher’s personal collection.
Research Discovery Service

- Medical Sciences and ACDT project
- Database of researchers and research interests across the division
- BVREH adapting for the Humanities
Where does this fit within our institution?

- Links to Central Admin/Research Services
- Institutional Repository
- Use of Standards to allow interoperability
- VREs need to interoperate between universities too!
What might this mean for a faculty?

- Need for interoperability at unit level
- e.g. RDS
  - collect/maintain information locally
  - exposed for reuse/aggregation within a VRE component
  - could be via web services (SOAP or REST)
  - or even a regularly submitted MySQL dump
- For this to work, data structures need to be compatible
  - probably means coordination at divisional level
What might this mean for a faculty?

- Many projects producing electronic research resources based across the faculties
- Local ITSS well placed to promote interoperability when offering technical advice
  - if we can integrate at technical level (plumbing) and at semantic level then resources will plug into larger research environments providing greater benefit to researchers

or department!
What next?

- Currently just demonstrators
- Any continuation in conjunction with OeRCEoRCEoRC
  - Acting as a hub for e-Research at Oxford
Feedback/Questions

- Keen for feedback
  - to fill in gaps
  - pointers to humanities research projects we might have missed

- Any questions?

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