Personal repository space via the personal portal

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St. Paul



Introduction

uPortal at the University of Hull

The RepoMMan project

Bringing the portal and the repository together

Linking in the course management system (Sakai)

Linking in library services (CREE)



uPortal at the University of Hull

University of Hull

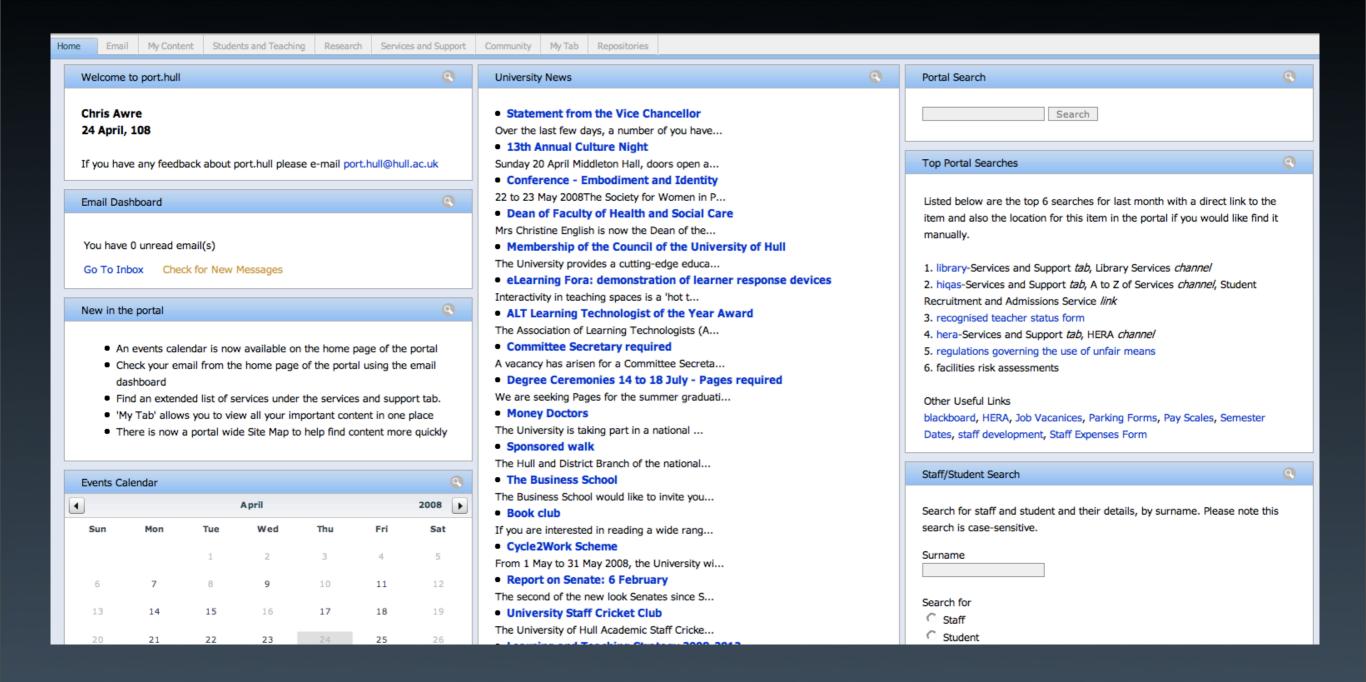
- Mid-sized UK University
 - ~2,000 staff
 - ~21,000 students

uPortal live since September 2003

- Now running 2.5.2
- Staff and student portals
 - Staff average monthly logins: 4158
 - Students average monthly logins: 35061



University of Hull portal - port.hull



Focus on personalised services

Portal acts as a central source of University information

Services are geared towards serving personalised needs where feasible

These personalised services are built around the portal knowing who you are when you log in

Login information is linked to your University record



Personalised services I

Services based on your departmental/faculty affiliation

Departmental Content

Academic Services

Academic Services general

Computing Services

Corporate Systems

e-SIG

Library Services

Staff development

Academic Services Review

Change Programme

Personalised services II

Services geared towards individual interaction

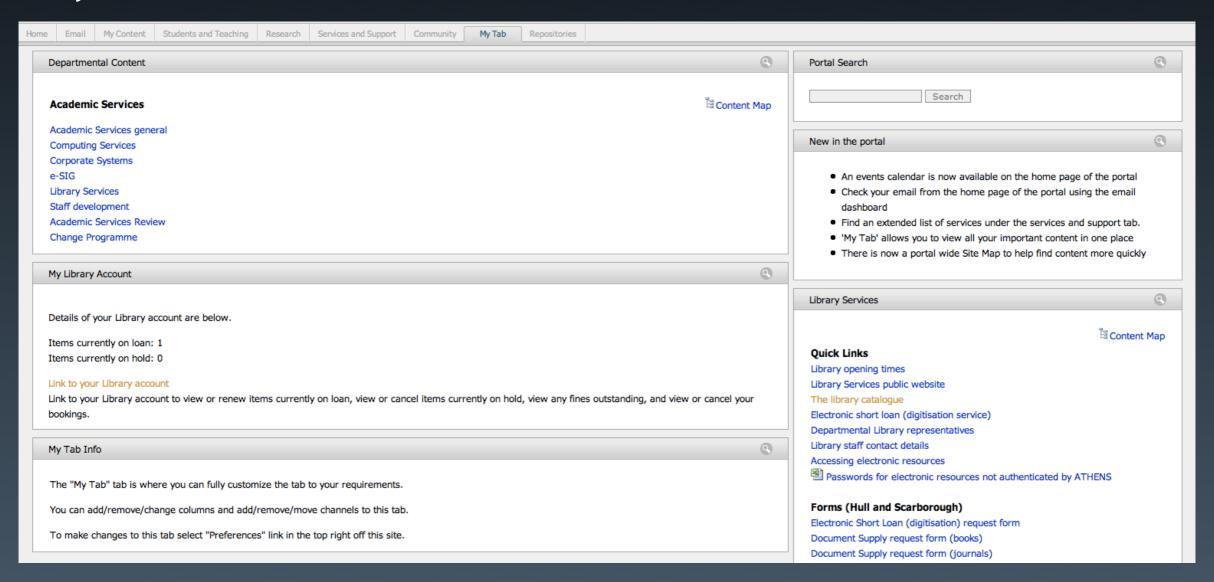
- Email
- Library account
 - Number of loans and holds, plus link to library account
- Staff and student personal details
 - View and edit
- Exam results students
- Content management system
 - HyperContent



Personalised services III

Flexibility of presentation within the portal

MyTab



Digital repositories

Often associated with the management and presentation of digital collections

- Image repositories
 - e.g., ArtSTOR, UK Visual Arts Data Service
- Open access research repositories
 - e.g., arXiv, institutional repositories
- Learning object repositories
 - e.g., MERLOT, UK Jorum
- Digital archives
 - e.g., Encyclopedia of Chicago
- Data repositories

All predominantly delivered through their own repository interfaces



View of a repository

Repositories are often

- Centrally managed
- Geared towards completed materials
- Focused on the collections, not the creators

This is good where existing digital content needs managing

The approach has led to a number of challenges where content exists but the need for its management is not as clearly recognised

- Lack of submission
- Lack of provision for materials in development
- A perception by authors that repositories are distant



The University of Hull repository

All digital content is important

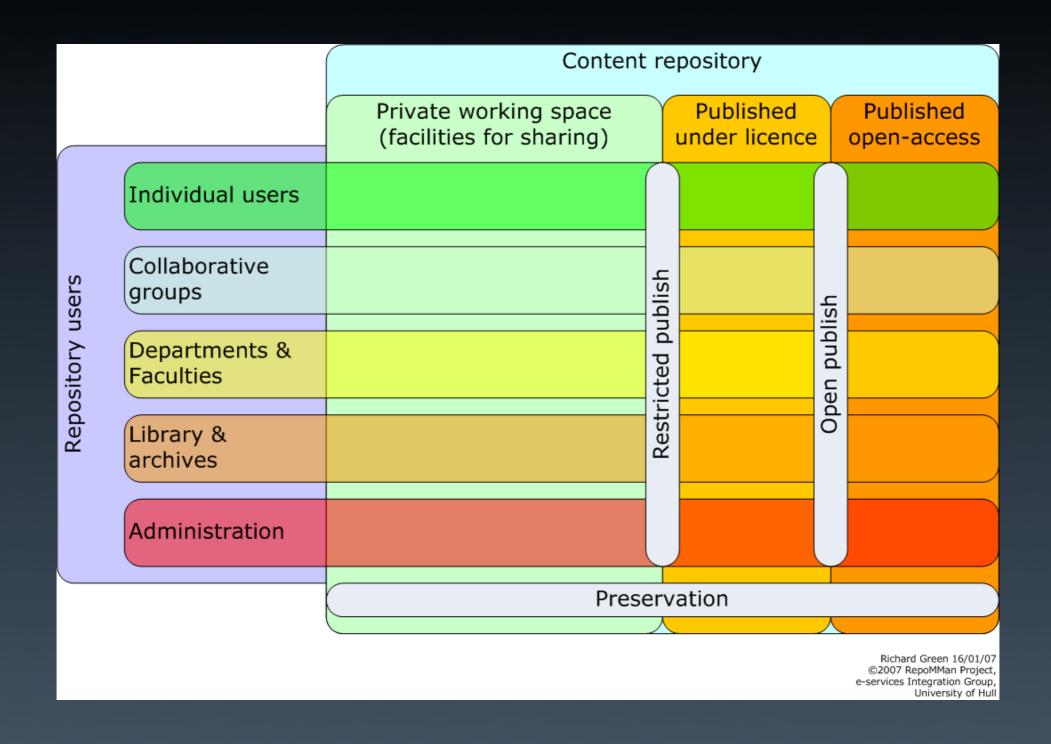
- There is a need for mechanisms to meet differing and flexible needs, throughout the lifecycle of the content
- There is also a need to manage many different types of digital content, and relationships between them
 - Working across institutional and content silos

University of Hull requirements

- Scaleable
 - Digital content is only going to grow
- Standards-based
 - To be able to integrate with other institutional systems



The repository vision



Fedora

Powerful digital object model

Extensible metadata management

Expressive inter-object relationships

Web Service integration

Version management

Configurable security architecture

OAI-PMH conformance

Preservation worthy



RepoMMan project



Repository Metadata and Management

- JISC-funded project, 2005-7
- Part of the JISC Digital Repositories Programme

Two strands

- User needs gathering
 - What do our users need a repository for?
- Technical
 - Develop a BPEL and Web Services based workflow tool for Fedora
 - Investigate and test the automated generation of metadata

Presentation of the repository was tested through uPortal and Sakai



The aim of RepoMMan

RepoMMan development is aimed at

- Enabling users to interact with a repository in the context of their existing workflows
- Facilitating the management of digital content by its creator throughout its lifecycle
- Assisting in the creation of metadata to effectively describe content, aiding retrieval and long-term management

These aims seek to achieve and enable personalised information management through a personal repository space



BPEL and Web Services

Business Process Execution Language

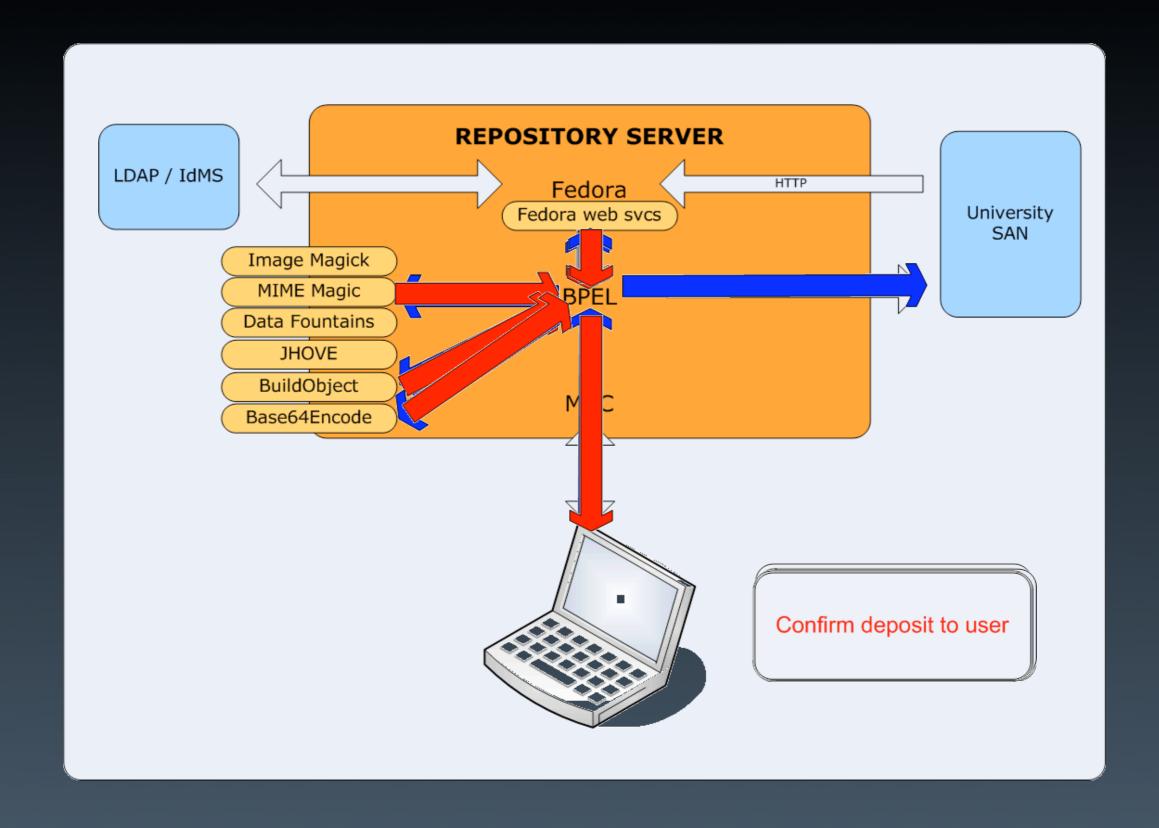
- OASIS standard, currently at version 2.0
- A language for specifying business process behaviour based on Web Services
- A mechanism for orchestrating Web Service interactions between systems
- BPEL can draw on any available Web Service, local or external

BPEL has been used to coordinate interaction between Fedora and other institutional systems via Fedora's Web Service interfaces

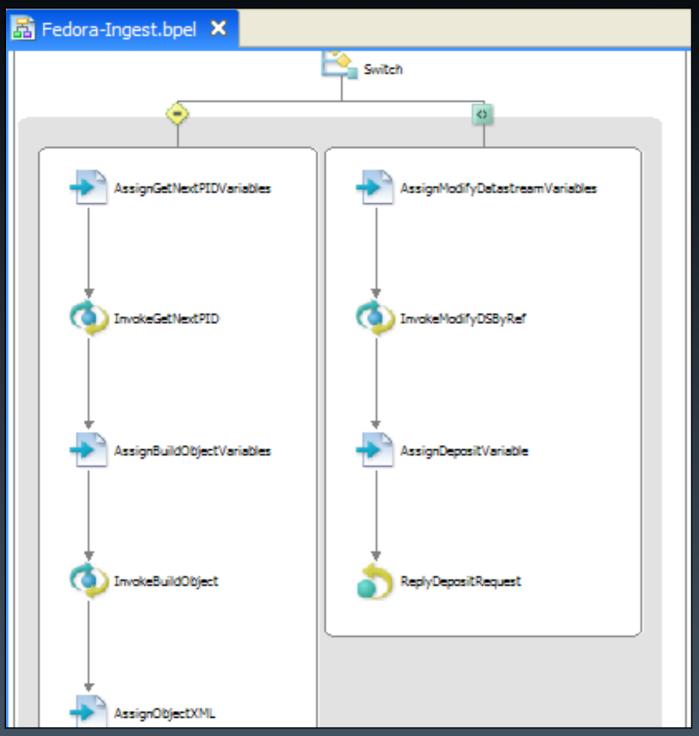
• API-M, API-A



Three-tier stack



'Putting' a file



Part of the BPEL process diagram (Active Endpoints visualisation software)

- switch depending on whether object already exists
- the left hand side branch creates a new object
- the right hand side modifies an existing one
- each of the globes with a 'swirl' round it is a Web Service call

Creating an interface

There is a need to create a user interface to the BPEL processes

- This acts as the user interface to the repository as well
- Addresses the lack of standard user interface to Fedora
 - But takes advantage of flexibility to build our own

Interface follows Rich Internet Application approach

- Uses Adobe Flex
 - Flex understands Web Services
 - Easy to plug in BPEL processes
 - Richer interaction interface for users



Embedding repository interaction

Need to map to existing activity

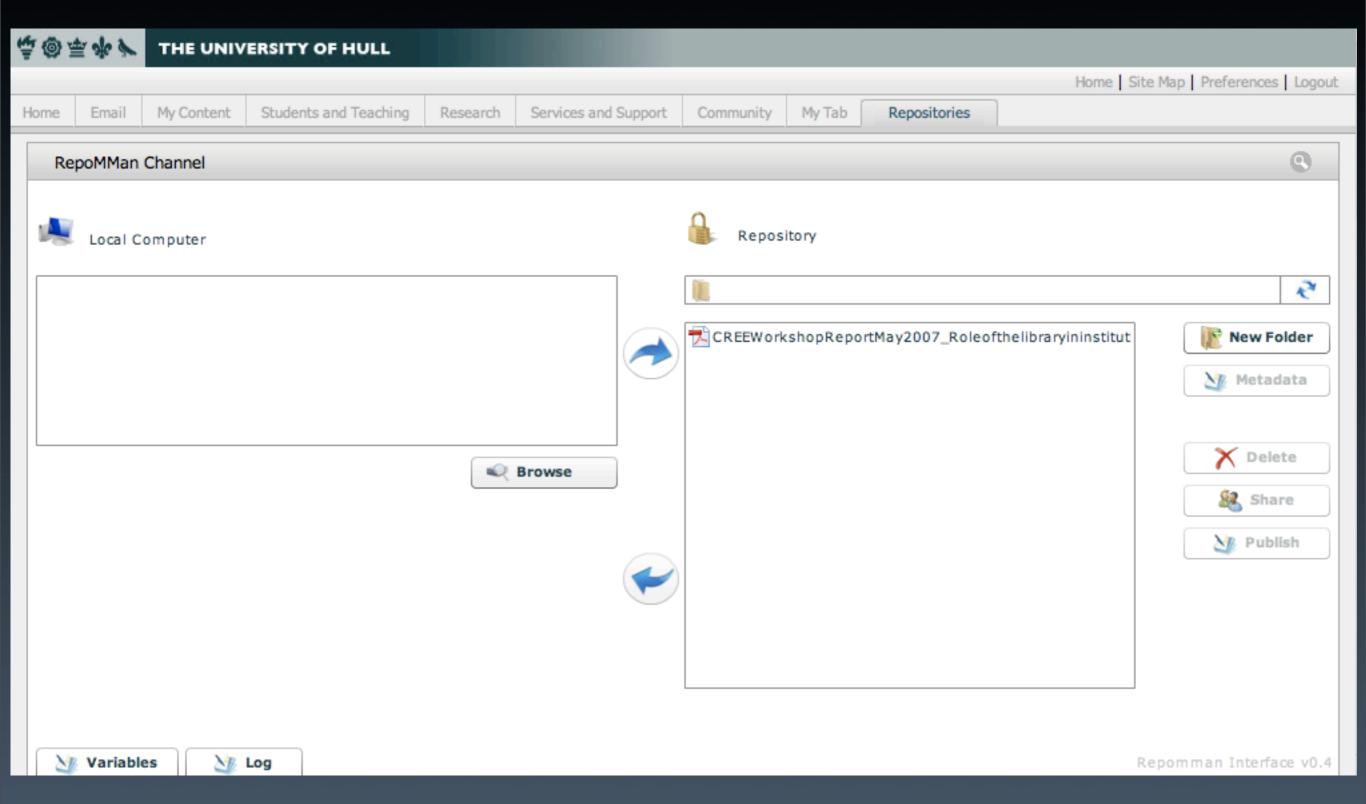
File management and FTP paradigms

Basic workflows

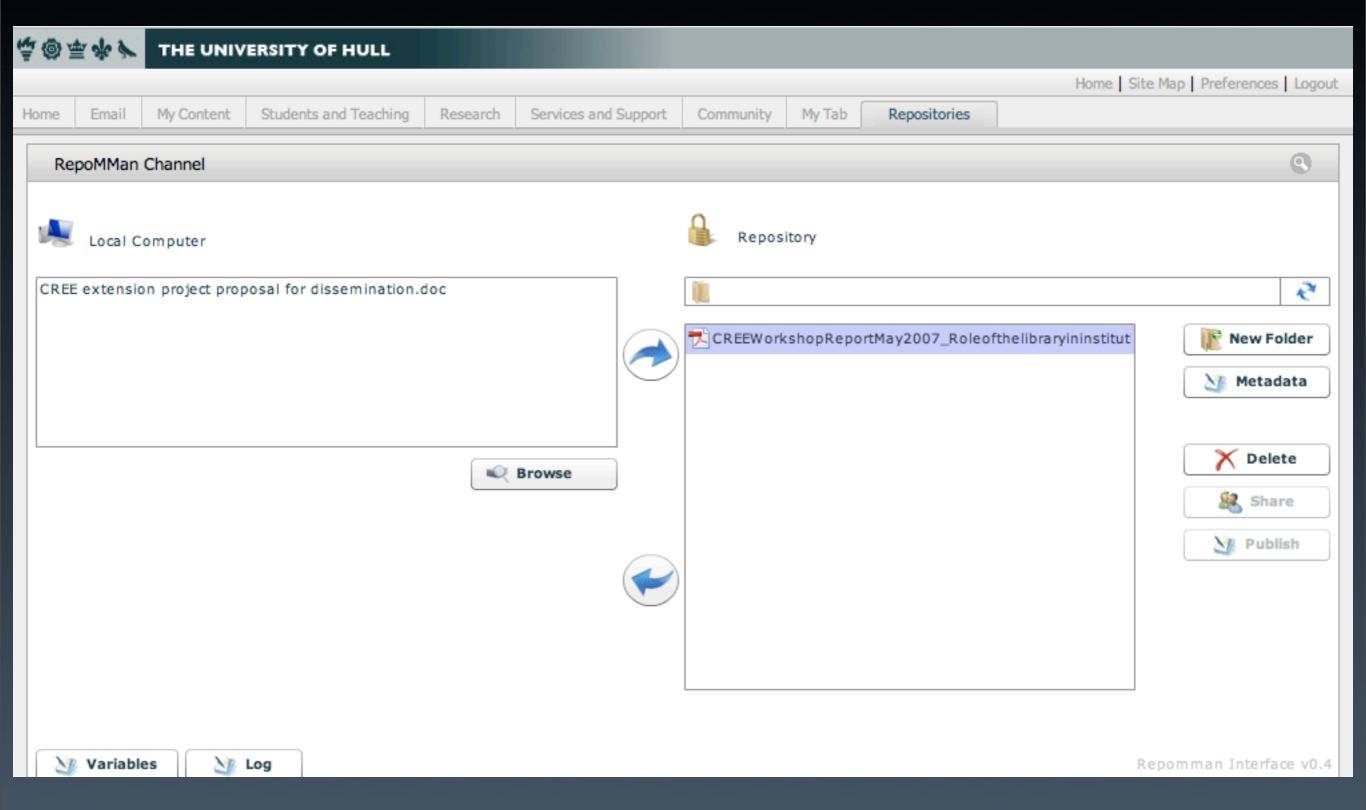
- Put object in repository (within identifiable structure)
- Get object from repository
- Delete
- Add metadata
- Share
- Publish
 - Move from personal repository to public one



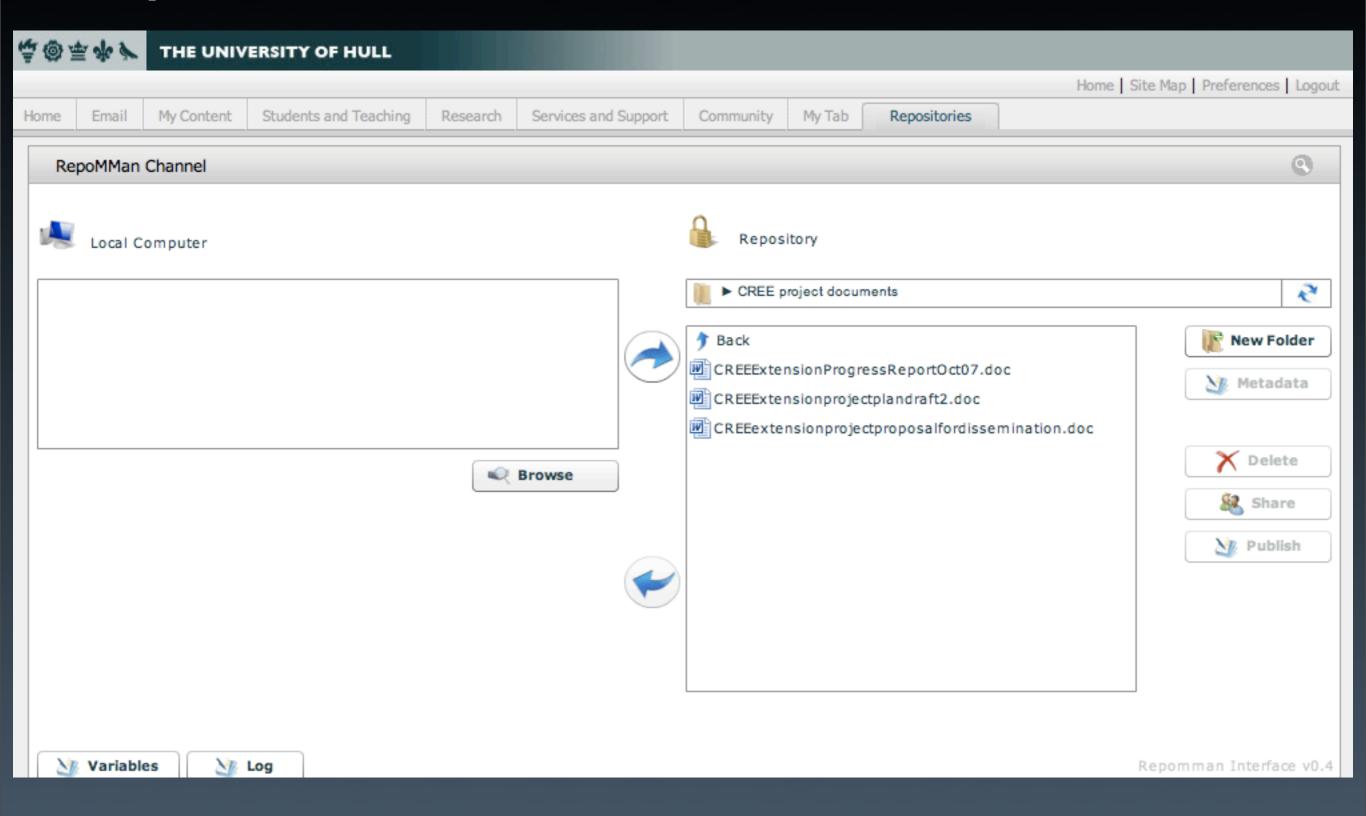
The repository in the portal



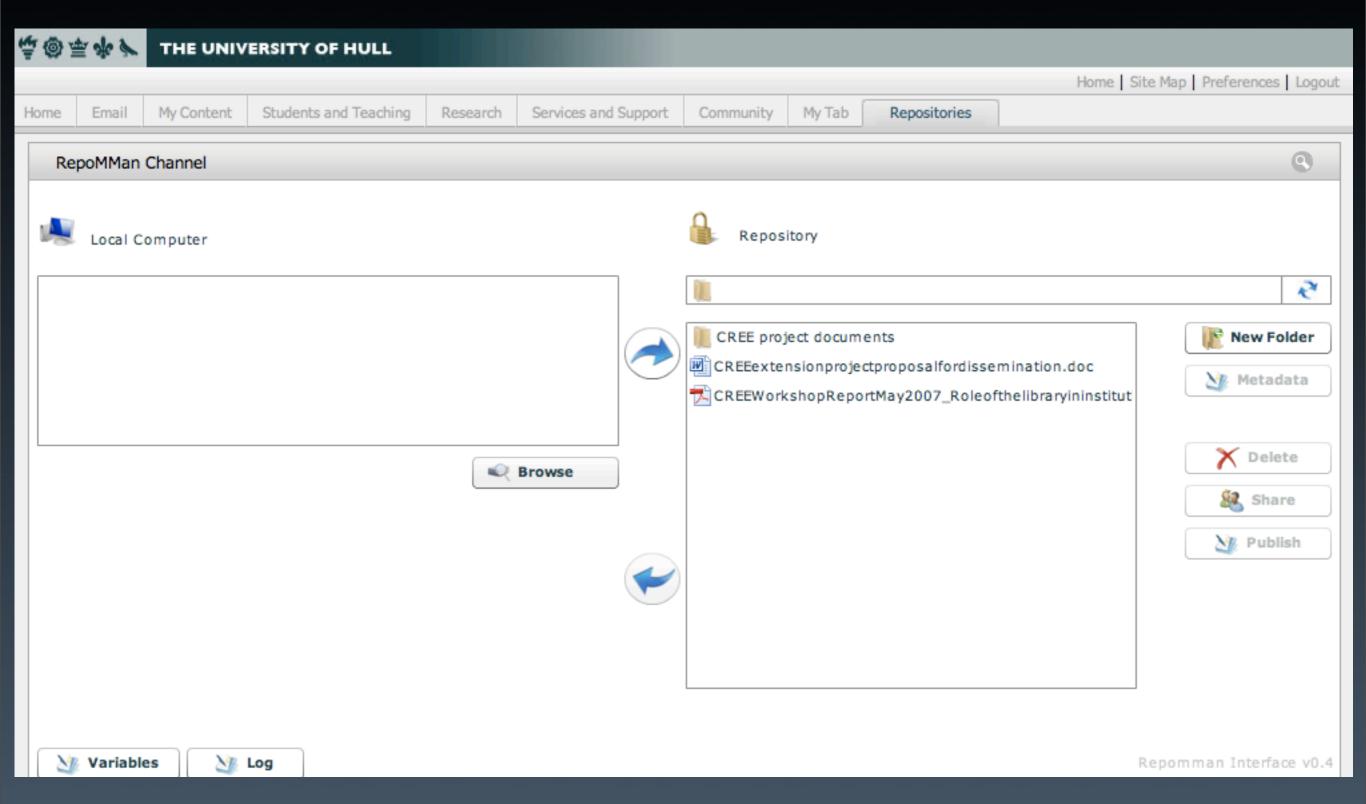
Putting objects in the repository



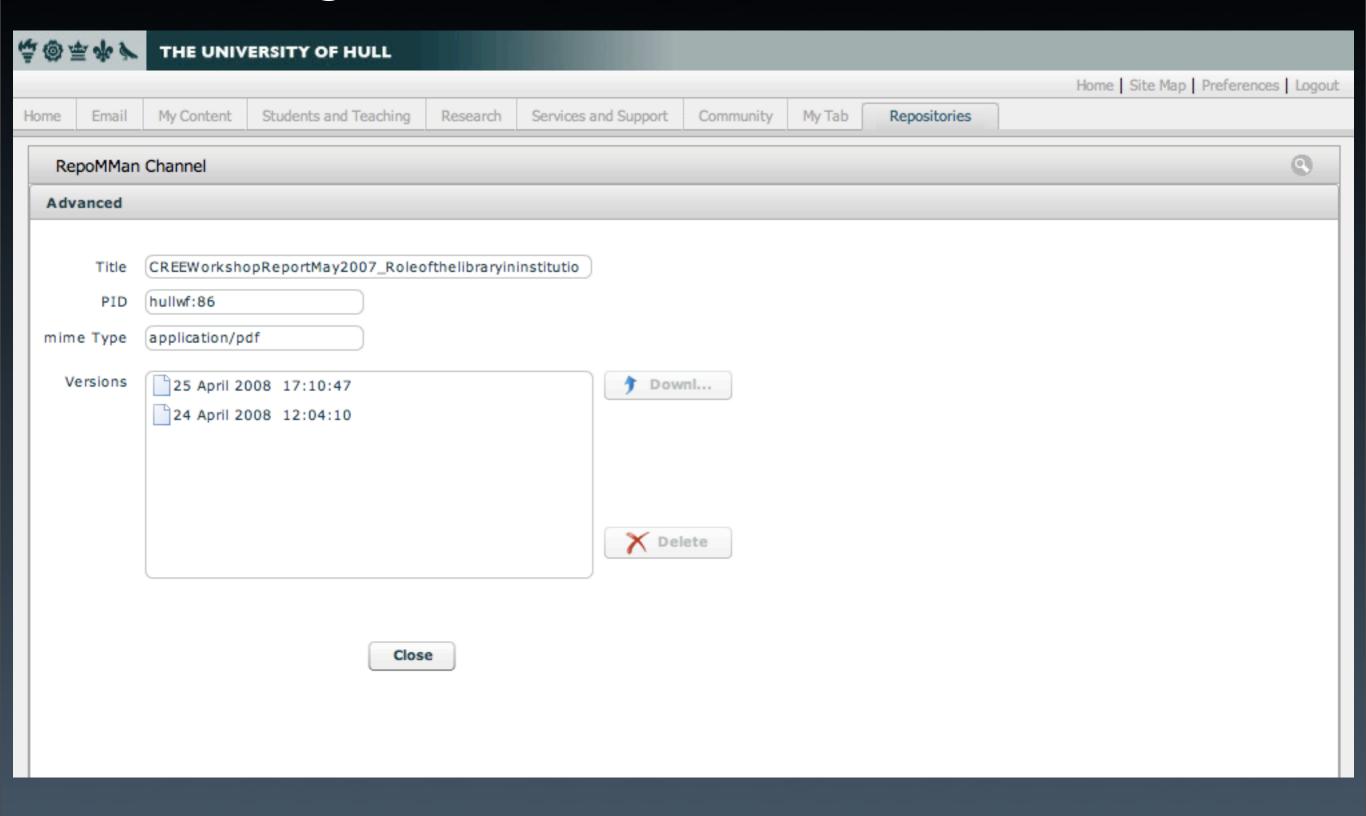
Separate folders



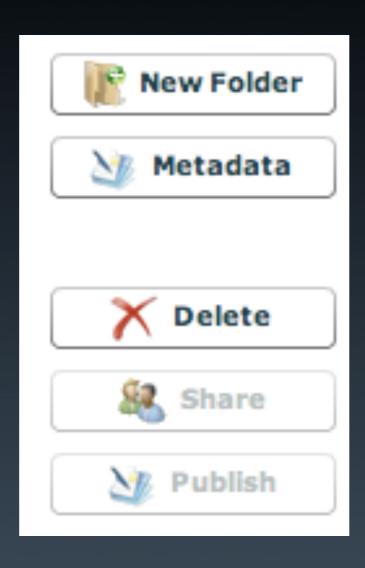
File system paradigm



Versioning



Repository options



Making the join

The repository channel is called on loading the page

- It associates objects with the user information provided by the portal
 - This is remembered for future interaction
- No separate authentication at this stage
 - This will be developed in the future
- Personal information can be used as metadata for the digital content

Delivery is via an adapted channel

• JSR 168 portlet delivery is, though, available (see Sakai integration)



Sakai integration

Sakai is being implemented as an institutional course management system at the University of Hull

- eBridge
- JSR 168 compliance enables surfacing of the repository
- Demonstrates re-use of repository interfaces
- Presentation where user requires it

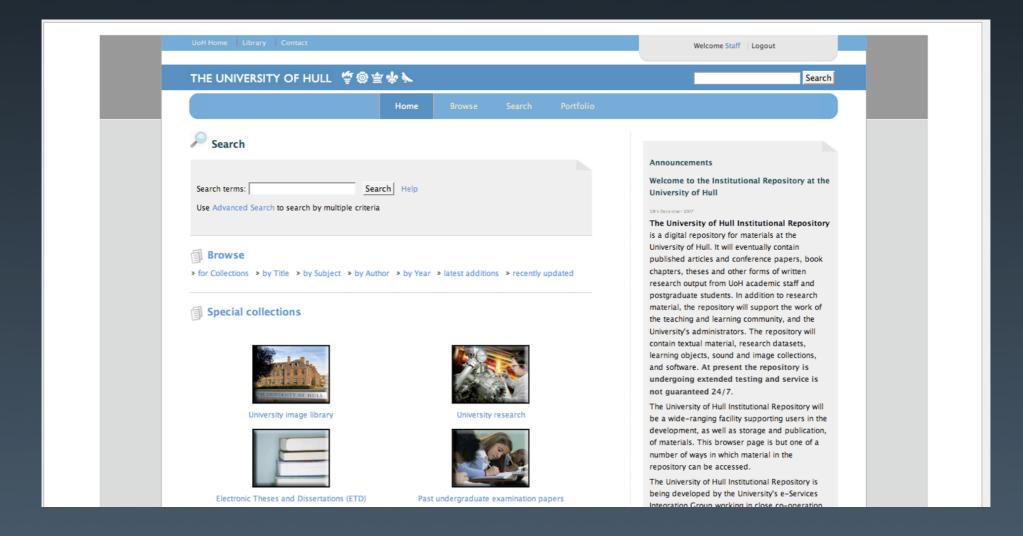


Public-facing repository

Uses Muradora as Fedora front-end

Available via the portal (in-line frame) and standalone

http://edocs.hull.ac.uk



Repository and the Library

The repository is a means of discovering information about locally held collections and digital content

- This is one strand of developing library-related services within the portal
- Additional search tools of external sources is also being investigated
- Linking in library account information complements these

These are ways in which to take the Library out to the user

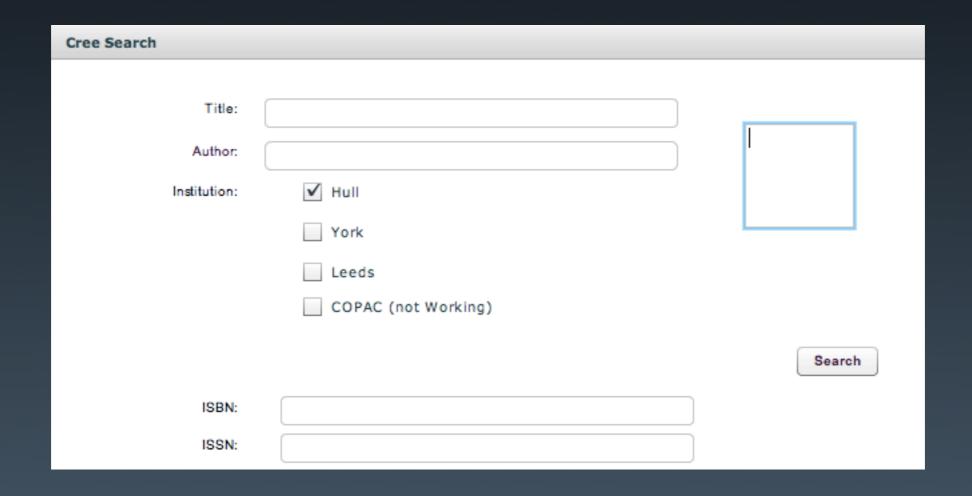
- Different to expecting the user to come to the Library website or OPAC all the time
- Increasing the role of the Library in a personal information landscape



CREE project

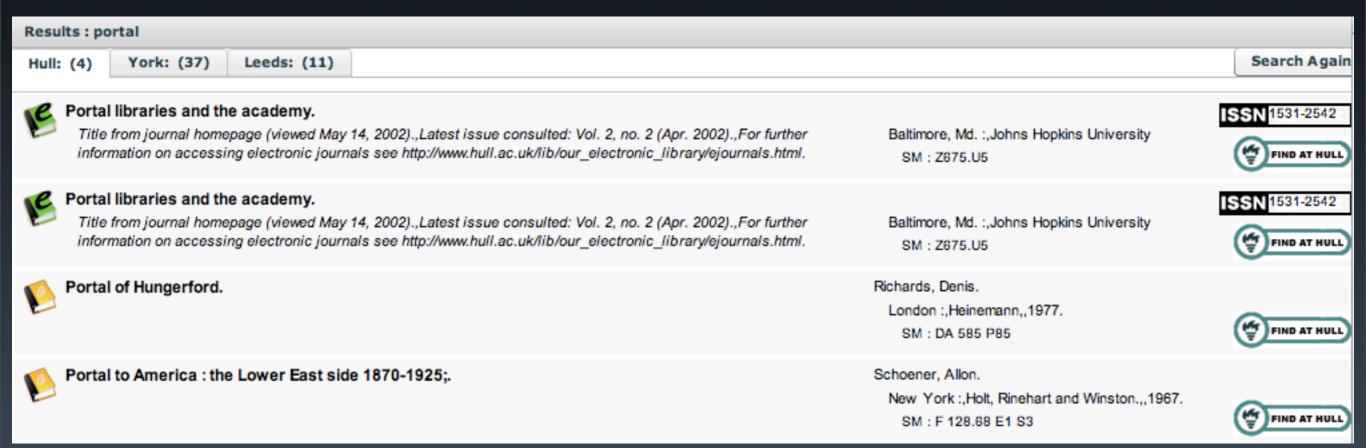
Embedding search tools within the portal

Sits well alongside the repository



CREE results

Uses Flex to seamlessly switch from search screen to results





Summary

Personalised services add value to the use of a portal

Digital repositories can assist in managing digital content of all sorts

Linking the repository into the portal facilitates personal digital content management

BPEL supports repository interaction for personal use

Adobe Flex works with Web Services to present the repository through rich interface

Development can also be used in the context of Sakai

Repository enhances other library-related services sited alongside



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- Fedora Commons, JA-SIG

Projects

- RepoMMan http://www.hull.ac.uk/esig/repomman
- REMAP http://www.hull.ac.uk/remap
- CREE http://www.hull.ac.uk/cree

