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YODL2: Developing a search interface for multimedia content at the University of York

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Overview

- YODL: York Digital Library’s multimedia search interface to Fedora
- JISC funded, code named YODL-ING
- Our requirements, design decisions and challenges faced implementing the new search interface – YODL2, focusing on the image search aspect of our multimedia repository.
YODL holds ~10,000 objects - largely images to support teaching within the History of Art department

Digitisation of local content (19th C glass lantern slides and collections from Borthwick Institute for Archives)

While audio content is being prepared for digitisation and should be added shortly
Scenarios for image searching

- Search by period, search by single period
  eg. 'early 14th century' and multiple periods
  for instance 14th and 15th century

- Narrowing the returned results by categories
  like type, artist, location, date period
Requirements

Scenario for viewing images

- View detailed description of each image
- To assist the detailed study images for instance examining the details of an engraving, being able to zoom and pan with an image is required
- Manuscripts, books and other types of images will need be viewed in a sequence
Reasons for choosing Muradora

- Out of the box UI to Fedora
- Search and Indexing facilities
- Advanced collection level, resource and datastream level access control, beyond the basic fedora 2.2.4 offering – see Muradora/Drama
Reasons for moving away from Muradora

- Muradora development was halted
- York has specific requirements for delivering multimedia content, which was not satisfied by the default Muradora UI
- Performance issues reached with just 10000 objects
A new beginning

- Drawing on the good architecture principles, a light weight bespoke interface for York’s needs is being developed

- An initial prototype in ASP.NET MVC in C# was produced followed through with migration to a Java based technology stack

- Demo
Technical architecture

- Apache Solr
- Spring Source
- MVC Web framework
- XML/JSON
- REST API – JAX-RS through Jersey
- Web services abstraction layer
- Mulgara External
- Fedora RI Search
- Fedora REST API
Survey of RIA plug-in technology to implement these viewers

- Page sequence application
- Zoomable user interface and supporting server components
- Relationship discovery
<table>
<thead>
<tr>
<th>License</th>
<th>Accessibility</th>
<th>Cross platform</th>
<th>Technical Features</th>
<th>Development tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>JavaFX</td>
<td>Runtime is proprietary. NetBeans plugin is released under GPL v2 &amp; CDDL</td>
<td>Basic features using community plug-in “fxaccessible”. No vendor lead initiatives.</td>
<td>Runs on top of native java runtime, plug-in based installation on browsers. Cross platform support inherited from Java Runtime Environment, works on Linux, Mac and Windows.</td>
<td>Web services support REST and SOAP, along with Basic Auth. for REST. XML and JSON formats are acceptable. Unit testing framework available, extended from IDE. Limited IDE support with Netbeans or eclipse. JavaFX author to be released later this year.</td>
</tr>
<tr>
<td>Flex</td>
<td>Runtime – Proprietary Flex SDK – Mozilla Public License</td>
<td>Vendor lead initiatives present, set of accessible components available. Some assistive technologies concerns on non windows platforms eg Mac OS X.</td>
<td>Good cross platform support inherited from the Adobe Flash player run time environment, works on Linux, Mac and Windows. Plugin based installation – 97% of pc’s purported to have this installed.</td>
<td>Web services support REST and SOAP. along with Basic Auth. for REST access. Basic unit testing framework in place. Adobe Flexbuilder is the fully featured development tool.</td>
</tr>
<tr>
<td>Silverlight</td>
<td>Runtime – Proprietary Some components – Microsoft Public License</td>
<td>Accessibility initiatives present, although a little dispersed. Limited to a few working examples like AMP and online tutorials.</td>
<td>Cross platform support is good albeit a little limited, works on Windows and Mac. Linux support is limited to an open source alternative called moonlight. Plugin based with about 30% of pc’s having this installed.</td>
<td>Web services support REST and SOAP, along with Basic Auth. for REST. XML and JSON formats are acceptable. Unit testing framework available, extended from Visual studio. Visual studio and Expression blend are the recommended development environments.</td>
</tr>
</tbody>
</table>
Ruben Swieringa flex component for book

Open source component

Simple atomic content model; each page is stored as its own object in Fedora with sequence information in RDF

Initial prototype queries Mulgara iTQL endpoint to gather the sequence information

Demo
Prototype at present, for production release we hope to

- migrate to a composite data model in Fedora
- backed by a METS profile for describing pages and sequences such as the profile for DFG viewer
Image zoom can be implemented a number of ways:

- a single resolution image being downloaded and zoomed/panned by the client
- streamed images
- progressive download via tiled pyramid of images
A survey of zoomable user interface solutions:

- **Zoomify** – Hosted streaming service - proprietary
- **IIPImage** – Client server streaming solution, open source
- **Djakota (J2K)** – Client server streaming solution, open source – fedora integration
- **Seadragon Deep Zoom** – open standard
IIPImage recently added support for TIFF delivery as Zoomify and DeepZoom compatible protocol.

- Allows data to be viewed in many client viewers from OpenZoom flash viewer, Seadragon ajax interface and viewers on the iPhone/iPad.
Acuity have developed a vocabulary service which exposes Getty ULAN data as RDF SKOS.

Translation between structured ULAN and SKOS is assisted by tools output from the JISC funded MultimediaN's project.

The services can queried by SPARQL or iTQL over HTTP GET/POST.
This service has three key aims

- Assist in cataloging process, by drawing terms from Getty vocabulary
- Enrich the underlying VRA metadata by drawing additional data about a creator
- Encouraging the discovery of relationship between terms

Demo
Schlemmer, Oskar
German painter, sculptor and scenographer, 1886-1943

Role: Artist
Nationality: German
Gender: Male

Notes
Born 4 September 1886. Oskar Schlemmer worked as an apprentice in a marquetry firm in Stuttgart from 1903 to 1905. From either 1906 to 1910 or 1905 to 1909, he studied at the Stuttgarter Academy of Fine Arts and returned to the school from 1912 to 1914. He served in the German Army from either 1914 to 1916 or 1918. Schlemmer taught sculpture, mural painting, figure drawing, metalwork and theatre at the Bauhaus, Weimar, and the Bauhaus, Dessau, from 1920 or 1921 to 1929. In either 1919 or 1922 he choreographed the Triadischen Ballett which was shown at various theatre halls in Germany, France and Switzerland from 1922 to 1936. From 1923 to 1927 Schlemmer created stage scenery for theatre companies in Berlin and Magdeburg, Germany, and conducted set design classes at the School of Arts and Crafts in Breslau, Germany, from 1929 to 1932 or 1933. He worked at the Kunstgewerbe in Berlin-Charlottenburg from 1932 to 1933. He completed wall murals for Dieter Keller's house in Stuttgart and the Martin factory in Offenburg, Germany, in 1940. German artist and designer, Bauhaus professor.
Summary

YODL2
- Presented an overview, architecture and demo
- Requirements for image viewing
- Our design decisions
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Any questions?