Short Report on Other Fedora Usage
VITAL Update:
Streaming Media & Authority Control

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Customer Projects

a. Virginia College of Osteopathic Medicine
b. Kansas City Public Library
c. Queens Library
d. Enhanced Authority Control
Customer Projects

a. Virginia College of Osteopathic Medicine
   • Creating VCOM-TV
   • Recording Lectures for students to play back
   • Adding extras for students to watch in addition to class
   • Future: Pay-for-access to videos

b. Kansas City Public Library

c. Queens Library

d. Enhanced Authority Control
VITAL : Using Cloud-Based Streaming

The VTLS VITAL Architecture

ACCESS PORTAL

Public Interface
- Object Displays
- Hi-Res Image Navigator
- Document Navigator
- RSS Feeds
- Citations Export (with QuikBib)
- Statistics

Administrative Tool
- Object Management
- Reporting
- QuickEdit XML
- Access Control
- Vocabulary Lists
- Contribute Objects

VITAL SERVICES LAYER

Fedora

VITAL Content Manager
Batch Submission Tool
Online submission tool VALET

Index Services
- SOLR/Lucene
- THUMBNAILS
- FULLTEXT
- JHOVE
- PREMIS
- HANDLES ASSIGNMENT
- METADATA SYNCHRONIZATION
- STATISTICS

VTLS OAI Provider

Cloud Streaming Services

Streaming Requests

Authentication and Search Requests

Users
The Birth of VCOM TV

- The program started 15 months ago
- Customer: The Edward Via Virginia College of Osteopathic Medicine (VCOM) in Blacksburg, Virginia
- Goal: to create an effective teaching and learning environment for medical students
- Within one year
  - the content increased tenfold
  - usage increased 800-fold
  - More than 1,000 different lectures are now available
An example of VCOM TV recording

CORE PEDIATRIC COMPETENCIES

- Acquisition of the basic knowledge of growth and development from birth through adolescence.
- Development of communication skills that will facilitate the clinical interaction with children.
- Development of clinical problem solving skills.
- Understanding of the influence of family, community, and society on the child in Health and disease.
- Development of strategies for health promotion as well as disease and injury prevention.
- Recognize the role of the Physician to serve as an advocate for child and family in health care.
- Development of competency in physical examination from birth through adolescence.
- Acquisition of knowledge necessary for the diagnosis and Initial management of common acute and chronic illness.
- Understanding of the approach of pediatricians to health care of children and adolescents.

Play-stop-volume Controls

Navigation Controls
The creation process uses a multi-channel, video recording system. Whereas the system supports more than two channels – only two are used.

- One channel shows the faculty member and the other shows a PowerPoint (or any other activity – like lab experiments).

- These channels are automatically synchronized, which allows students to "jump" around in the content from either channel as needed. It lets students navigate and review small portions of a lecture (for exam preparation) from anywhere using a standard browser.
The Creation Process

- In addition to being a consistent teaching tool, the system is an effective learning tool.
- Students can review small portions of a lecture from anywhere using a standard browser.
  - enhanced exam preparation
- Except for the lecture preparation itself, the creation process is simple
  - after the first time, can be handled by the faculty member without any outside help.
- An operator loads the data into the institutional repository.
There are three options available for recording:
1. Live in the classroom
2. Pre-recorded in a studio (controlled environment)
3. Pre-recorded using portable studio
   - This can be taken to a lab or an operation room
   - The first two options can be self-service
   - The third option requires operator assistance.
   - VCOM does all its own recordings
Creation Process – Portable Studio

Components:
1. Back Drop
2. Light Source
3. First Channel: Camera
4. Second Channel: Laptop
5. Synchronizer & Recorder
All this can be packaged on a single cart.
The management process is simple

- Completed recordings may be edited
  - This step is optional
- Created content is loaded into the VITAL repository and a metadata record created
  - The content is immediately available to users
- The content is loaded to the cloud based streaming service provider
  - metadata is kept locally
- Google analytics are set up to monitor usage
- The normal VITAL/Fedora backup-recovery-version control features are invoked
Result: Tremendous Growth (1 of 3)

Visitors for VCOM TV

Chart showing the number of visitors for VCOM TV from November 2009 to October 2010.
Result: Tremendous Growth (2 of 3)
Result: Tremendous Growth (3 of 3)

VCOM TV GB Transferred

Nov-09 Dec-09 Jan-10 Feb-10 Mar-10 Apr-10 May-10 Jun-10 Jul-10 Aug-10 Sep-10 Oct-10
Customer Projects

a. Virginia College of Osteopathic Medicine

b. Kansas City Public Library
   - Using VITAL API + Drupal
   - Creating a “one-stop-shop” for all research about Kansas City

c. Queens Library

d. Enhanced Authority Control
Customer Projects

a. Virginia College of Osteopathic Medicine

b. Kansas City Public Library

c. Queens Borough Public Library
   • Creating a repository from archives
   • Documenting natural, social, economic and political history of Queens, King, Nassau and Suffolk counties
   • Using VITAL API + Drupal

d. Enhanced Authority Control
Three components

- VITAL Web Service API
- VITAL Services module (a Drupal module)
- VITAL Web Display module (a Drupal module)
VITAL+ Drupal

- VITAL Web Service API
  - Simple API that provides filtered FOXML
- VITAL Services module
  - Provides the communication infrastructure
    - Makes Drupal nodes of type ‘vital’ appear to contain FOXML
    - Makes the web services connection to VITAL
  - Utility functions
    - Drupal ‘apachesolr’ module integration
VITAL+ Drupal

- VITAL Web Display module
  - Provides the data display infrastructure
    - Templates and preprocessing functions
    - These interpret and display data provided by the VITAL services module
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Authority Control - Overview

- Provides standard, consistent ("authoritative") references in metadata
- Allows more accurate search
- Assists in accurate cataloging
- Traditional in Integrated Library Systems
- Librarians are used to it, want it in digital repositories also
- Unlike traditional ILS, in a digital repository authority control must be extensible to all metadata datastreams in their various schemata
VITAL Authority Control

- Objects stored in Fedora
  - ‘repository’ objects: objects dealt with by normal users
  - ‘authority’ objects: special VITAL system objects
    - “special” because of how VITAL uses them
    - In all respects, they are regular Fedora objects
    - Managed by administrators
    - Only their effects are visible to normal users
Authority Objects stored in Fedora

- Have a specific content model
  - `vital-system:authorityCM`
- Have a MADS datastream
  - The primary datastream for VITAL authority information
- Can have other authority metadata datastreams
  - these can be synchronized with the MADS datastream during indexing
VITAL Authority Control

- Authority Objects in VITAL
  - can be created from authority metadata in MADS or other formats
  - transformed into MADS when indexed
  - just need to provide XSLT to transform to MADS
  - VITAL comes with MARCXML to MADS transformation
VITAL Authority Control

- indicated in the RELS-EXT (bidirectional)
- metadata rewritten in controlled metadata datastreams
  - facilitates portability
Authority Control Challenges

- Authority information is stored MADS -- but repository object metadata is stored in anything but MADS.
- Enormous mismatch between the MADS XSD and its intended semantics.
- No way to tell from a MADS document what it's about.
- An `<authority>` element may contain all of `<name>`, `<titleInfo>`, `<topic>`, `<temporal>`, `<genre>`, `<geographic>`, `<hierarchicalGeographic>`, `<occupation>`. 
Authority Control Challenges

- An `<authority>` element may contain all of `<name>`, `<titleInfo>`, `<topic>`, etc.

- is it about Mark Twain, *Huckleberry Finn*, or Hannibal, MO?

  - traditional: ‘Mark Twain’ in `<name>`, other information in `<note>` field

  - problem: want to use real MADS markup so the data is machine readable
VITAL Authority Control - Solution

- Classify authority objects by ‘authority type’ based on specific attributes of the MADS data
- Out of the box, VITAL defines the “traditional” authority types (i.e., Name, Title, Name/Title, Subject, Genre, Geographic)
- Can be modified or extended by the customer
- Provides some organization to the madness
VITAL Authority Control - Solution

- VITAL provides an interface for authority object creation that enforces constraints beyond simple MADS 1.0 validity
  - single `<mads>` element
  - a `<related>` element must refer to an existing authority (or a “blind” authority is created dynamically)
  - an `<authority>` element cannot be a `<variant>` of an existing authority
- VITAL provides a powerful interface for merging authorities
- VITAL authority control is comprehensive and configurable (but optional!)
VITAL Authority Control Options

- basic authority control of metadata
- authority control with suggestions
  - new authorities (based on ingested repository objects)
  - authority assignments to repository objects
- authority control with automatic authority creation
  - can be restricted to specific authority types
- authority control with automatic authority assignment
  - independent of automatic authority creation
VTLS VITAL

- Streaming media
- Drupal integration
- Authority control

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