Why NJVid?

Digital video creates a multisensory experience that immerses the user in both information and context. A digital video lecture enables a student to “relive” a classroom experience, using video and audio cues to identify key concepts in the lecture and classroom discussion.
Why NJVid?

Problem:
The technical barriers in digitizing and making digital video available to users remains significant for smaller institutions. A statewide digital video portal, with collections and services that address the wide-ranging needs of lifelong learners, educators and students, is a compelling venture, but also a complex task that requires great collaboration and focus.
Growing demand for streamed video

- Online information in various forms & formats has become an almost universal library staple, a service expected by most library users
- Increasing user expectations & demand for remote, 24/7 access to library resources
- Critical need to preserve and/or replace deteriorating collections of older media....VHS, etc.
- Budget limitations on purchase of multiple copies or replacements
- Pressures on library viewing facilities, equipment & services
Growing demand for streamed video

- Common use of online teaching/learning resources, such as Bb, WebCT, Sakai-compliant systems, which allow for media content
- Changing client demographics & changing educational programs to serve these clients (remote library services, etc.)
- General trend toward resource sharing among libraries & other educational and cultural institutions

Transition

Physical collection of media ➔ Service-based model of access to both non and licensed resources
Three types of Collections

Locally Owned Videos:

**Commons** access provides access to a shared-by-all collection that can include such videos as Organizational events (lectures, speakers, Labor Day Parade) Re-enactments and historic events (constructing an historic bridge over the D&R canal) NJN videos, Oral Histories, etc.
Three types of Collections

Commercial Videos:

**Login Access** provides a common platform for describing, storing and making commercial digital videos available for the participating institutions that purchase the rights. VALE, Virtual Academic Library Environment, will negotiate the rights for these videos and participating users can access these
Three Types of Collections

Learning-on-Demand

**Login Access** will provide a common platform for accessing Learning-on-Demand. These are educational videos that will make course lectures available for faculty and students to segment (create “virtual clips”), annotate, and make available within each participating institution. Learning-on-Demand will primarily be used in the K20 educational environment although other participants that host educational activities and courses may also find it useful.
Identity Management is key to NJVid

- Service depends upon:
  - Institution you are from

- One server needs to be able to verify this information for members of any institutions

- Requires “federated identity”
Key Concepts

- Establishing identity; levels of assurance
- Identifiers
- Authentication
- Authorization
- Directory services
- Policy and governance
- Federation
NJTrust

- Currently 13 institutions are part of NJTrust
- Website to assist in becoming a member of NJTrust
- Allows a common server to authenticate users based on an institution’s own IdM and finds roles and attributes to make authorization decisions
- Maintain user privacy
Federated Identity

- Enterprises are moving towards SOA - Users are accessing external systems and resources outside Institutional domains.

- Identity Federations - enable users of one domain to securely access data on another domain seamlessly using local authentication and authorization (A&A)
Trust Federation

- Trust fabric between Identity Providers [IdP] and Service Providers [SPs].
- Framework to collaborate with one another in a shared, secure and trusted manner.
- Process of adding IdPs and new SPs is simplified
- NJTrust
NJViD - One of the first services that is being offered via the Federation.

Videos available in the NJViD Commons are openly accessible

Licensed Commercial videos as well as Learning-on-demand need Authentication & Authorization
How to participate?

- Run your own Shibboleth Identity Provider (IdP)
  - Recommended and more secure

- Participate in the Statewide Directory System
  - Institutions without a directory server
  - Administrators can manage their Institutional User data using web front-end
  - For smaller organizations – K12s, Museums, Public Libraries
InCommon Federation

- InCommon, NCTrust, UCTrust
- We are not asking participants to join InCommon
Training and Support

- Shibboleth IdP VMs for Testing at www.njedge.net/shibboleth
- Instructions for joining NJTrust – http://federation.njedge.net
- Other Training Sessions
- Identity Management Survey www.njedge.net/idmsurvey
Questions?

Questions? Send them to shib@njedge.net
## Software Review

<table>
<thead>
<tr>
<th>Area</th>
<th>Software Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications/Web Interface</td>
<td>PHP / MySQL - based (developed in-house)</td>
</tr>
<tr>
<td>Journals</td>
<td>Open Journal System (PKP) (with in-house enhancements)</td>
</tr>
<tr>
<td>Search Engine</td>
<td>Amberfish (with in-house enhancements)</td>
</tr>
<tr>
<td>Workflow Management</td>
<td>PHP / MySQL - based (developed in-house)</td>
</tr>
</tbody>
</table>
## Software Review (cont’d.)

<table>
<thead>
<tr>
<th>Area</th>
<th>Software Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collection Services</td>
<td>PHP / MySQL - based (developed in-house)</td>
</tr>
<tr>
<td>Handles/Persistent IDs</td>
<td>CNRI Handle Server</td>
</tr>
<tr>
<td>Video Streaming Server</td>
<td>Darwin (Apple) (Possibly Flash in the near-future)</td>
</tr>
<tr>
<td>Digital Library Framework</td>
<td>FEDORA</td>
</tr>
<tr>
<td>OS/Web Server</td>
<td>Linux/Apache</td>
</tr>
</tbody>
</table>
Repository Architecture

What is FEDORA?

An Architecture for storing, managing and retrieving assets which are treated as Digital Objects

Supports not just storage and access, but preservation of these objects.

Part of the Duraspace community: aim is to provide leadership and innovation in open source technologies for global communities who manage, preserve, and provide access to digital content.
What is Fedora?

Provides us with event-based control of our digital objects
What is Fedora?

Conforms to the Open Archives Information System Functional Model (OAIS)

The OAIS Functional Model
http://nssdc.gsfc.nasa.gov/nost/isoas/
Digital Asset Management with the Workflow Management System (WMS)

Cataloging and Repository Object Control
Permits cataloging of digital objects, ingest and management of their collections and metadata
## Technical Metadata

### Operating System
- Version: [ ]
- Operating System: [ ]

### Format
- **Type**: Encoding
- **Version**: [ ]
- **Value**: [ ]

### Compression
- **Compression Scheme**: [ ]
- **Compression Ratio**: LZW, Uncompressed, Unknown, Wavelet
- **Color Space**: [ ]

### Sampling
- **Sampling Unit**: [ ]
- **Sampling Size**: [ ]
- **Sampling Word Size**: [ ]
- **Bits per Sample**: [ ]
Rights Declaration

Authority
- FS
- GS
- JS
- KA
- KA test
- NUDH
- RULIB
- Virginia Tech
- Local (free text)

Value
This object may be copyright protected. You may make use of the...

Copyright

Status: copyright protected

Notice

Note

Availability

Status: Open
An XACML Policy Example

```xml
<Subject>
  <SubjectMatch MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
    <AttributeValue
      DataType="http://www.w3.org/2001/XMLSchema#string">student</AttributeValue>
    <SubjectAttributeDesignator AttributeId="fedoraRole" MustBePresent="false"
      DataType="http://www.w3.org/2001/XMLSchema#string"/>
  </SubjectMatch>
</Subject>

<Resource>
  <ResourceMatch MatchId="urn:oasis:names:tc:xacml:1.0:function:string-equal">
    <AttributeValue
      DataType="http://www.w3.org/2001/XMLSchema#string">MOV-1</AttributeValue>
  </ResourceMatch>
</Resource>
```
For restricted files (Commercial Videos):

Streaming Protocol: MPEG-4 H.264 (Quicktime)

- 30 frames/sec, 640x480 resolution
- Data rate: 786 kbps to 1Mbps
- Progressive Download Not Supported
- Streaming video protected by Authentication
Video Delivery - Format Specifications

For non-restricted files:
Streaming Protocol: MPEG-4 H.264 (Quicktime)
  ‣ 30 frames/sec, 640x480 resolution
  ‣ Data rate: 786 kbps to 1Mbps

Progressive Download
  ‣ Flash Video (FLV with SWF wrapper)
    ‣ 24 fps, 640 x 480 - 512 kbps
    ‣ “Universal” but slightly lower quality
Front End Browse & Search Portal Systems

Permits visitors, researchers and end users to browse assets, search for items, and soon, annotate and remix content.
NJVid Year 2 Survey
Outcome Based Evaluation

Judy Jeng, Ph. D.
Digital Library Evaluation Consultant

NJVid Advisory Board
June 15, 2009
Evaluation Objective

- To gather feedback to refine NJVid appearance, functionality, and interface design.
Evaluation Methodology

- Online survey
- March 30 – April 24, 2009
- Convenience sampling among NJVid participants
- 16 completed responses
81% of survey participants have visited NJVid 2-5 times.

19% have made their first visit.
Purposes of Using NJVid

- 77% for browsing
- 8% for looking for specific information
Browsing

- 73% found it useful to browse by subject or by contributing organization.
Display

- 53% found it useful to arrange display by title or date.
- 79% said the essential data elements such as title, date created, description, duration, and target audience should be displayed on the hit list.
Suggestions

- We need more content for the NJVid digital library.
- We need clearer explanation of the purpose (for whom was it designed), process, and resources.
- Headings are ambiguous.
- It was not apparent that videos may be selected via the left-hand pane.
- We need to have more New Jersey history subject headings.
- We need longer display of search results.
- We need the ability to view brief segments, queue segments into a playlist of sorts, ability to download segments and incorporate into PowerPoint presentation.
- Better indication on “what’s new.”
Commercial Video collection

- Deposit and Digitization Master Agreement

- Benefits of this collection
  - No need for physical acquisitions
  - Shared cataloging
  - New possibilities for user access
  - Online access to some vendor collections for the first time
  - Overall reduction in staff workload and time spent
First Commercial Video collection

- Films Media Group
  - Signed Deposit Agreement
  - Negotiated reduced consortium pricing
  - Discussed technical requirements for hosting FMG collection
  - Acquired FMG’s video files, metadata and thumbnail images
Films Media Group Test

- Initial commercial video collection
- 25 titles chosen
  - Oft-licensed titles
  - Variety of subject matter
- 8 participating institutions
  - Existing or committed FMG licensees
  - Free access to 25 FMG titles for evaluative purposes
VALE Digital Media Committee

Charge:
To provide a vehicle for VALE member institutions to obtain streaming rights for digital media

http://www.valenj.org/committees/digital-media
VALE Survey on Licensing Videos

1. Do you currently stream videos?
2. What titles and/or distributors would you like VALE to begin negotiations with for the coming year?
3. If you are interested in streaming, but haven’t provided this service at your institution, do you anticipate that you will join in the coming fiscal year?
Commercial Video Today

- Over 1,000 titles
- Currently 5 Commercial Video Vendors
  - Ambrose
  - BioMedia
  - California Newsreel Collection
  - FMG
  - Media Education Foundation

http://njvid.net
3,573 visits came from 517 service providers

<table>
<thead>
<tr>
<th>Service Provider</th>
<th>Visits</th>
<th>Pages/Visit</th>
<th>Avg. Time on Site</th>
<th>% New Visits</th>
<th>Bounce Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>william paterson university</td>
<td>801</td>
<td>12.49</td>
<td>00:06:42</td>
<td>7.37%</td>
<td>53.31%</td>
</tr>
<tr>
<td>new jersey institute of technology</td>
<td>420</td>
<td>11.29</td>
<td>00:13:07</td>
<td>17.38%</td>
<td>25.00%</td>
</tr>
<tr>
<td>comcast cable communications inc.</td>
<td>399</td>
<td>5.30</td>
<td>00:05:55</td>
<td>39.70%</td>
<td>41.21%</td>
</tr>
<tr>
<td>montclair state university</td>
<td>187</td>
<td>0.30</td>
<td>00:04:18</td>
<td>46.52%</td>
<td>26.74%</td>
</tr>
<tr>
<td>verizon internet services inc.</td>
<td>181</td>
<td>3.70</td>
<td>00:03:08</td>
<td>78.45%</td>
<td>42.54%</td>
</tr>
<tr>
<td>optimum online (cablevision systems)</td>
<td>139</td>
<td>5.12</td>
<td>00:04:05</td>
<td>83.45%</td>
<td>40.29%</td>
</tr>
<tr>
<td>middlesex county college</td>
<td>94</td>
<td>3.51</td>
<td>00:00:54</td>
<td>28.72%</td>
<td>51.06%</td>
</tr>
<tr>
<td>rutgers university</td>
<td>90</td>
<td>4.72</td>
<td>00:01:58</td>
<td>45.56%</td>
<td>31.11%</td>
</tr>
<tr>
<td>fairleigh dickinson university</td>
<td>88</td>
<td>3.45</td>
<td>00:01:58</td>
<td>93.18%</td>
<td>76.14%</td>
</tr>
<tr>
<td>road runner holdco llc</td>
<td>71</td>
<td>2.45</td>
<td>00:01:34</td>
<td>88.73%</td>
<td>57.75%</td>
</tr>
</tbody>
</table>
## Visitor Loyalty Report

**Most visits repeated: 1 times**

<table>
<thead>
<tr>
<th>Count of visits from this visitor including current</th>
<th>Visits that were the visitor’s nth visit</th>
<th>Percentage of all visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 times</td>
<td>1,745.00</td>
<td>48.84%</td>
</tr>
<tr>
<td>2 times</td>
<td>267.00</td>
<td>7.47%</td>
</tr>
<tr>
<td>3 times</td>
<td>138.00</td>
<td>3.88%</td>
</tr>
<tr>
<td>4 times</td>
<td>94.00</td>
<td>2.63%</td>
</tr>
<tr>
<td>5 times</td>
<td>64.00</td>
<td>1.79%</td>
</tr>
<tr>
<td>6 times</td>
<td>52.00</td>
<td>1.46%</td>
</tr>
<tr>
<td>7 times</td>
<td>40.00</td>
<td>1.12%</td>
</tr>
<tr>
<td>8 times</td>
<td>37.00</td>
<td>1.04%</td>
</tr>
<tr>
<td>9-14 times</td>
<td>160.00</td>
<td>4.48%</td>
</tr>
<tr>
<td>15-25 times</td>
<td>157.00</td>
<td>4.39%</td>
</tr>
<tr>
<td>26-50 times</td>
<td>178.00</td>
<td>4.98%</td>
</tr>
<tr>
<td>51-100 times</td>
<td>121.00</td>
<td>3.39%</td>
</tr>
<tr>
<td>101-200 times</td>
<td>101.00</td>
<td>2.83%</td>
</tr>
<tr>
<td>201+ times</td>
<td>419.00</td>
<td>11.73%</td>
</tr>
</tbody>
</table>
What’s Next?

Learning-on-Demand
Learning on demand

- Quick upload of videos from their local computer
- Allows institutions to change access restrictions to their uploaded videos
- Native Support for Flash and H.264 (MPEG-4) videos
- Allows automatic transcoding from MPEG-1, MPEG-2, MOV, WMV using Encoding.com (encoding.com)
- Accepts content and metadata exported from lecture capture systems such as Camtasia Relay server and Echo 360.
LoD Administration hierarchy

**Super Collections Manager (SCM) (Statenet level)**
- Manages all videos, collections and permissions
- Can create ICMs

**Institutional Collections Manager (ICM)**
- Manages all videos and collections that belong to his/her institution
- Can create users and assign collections to each user
- Can view and delete videos by users of his institution
- More than one ICM per institution permitted (eg. departmental level).
- Manages Labels.

**Learning on Demand User**
- Can upload videos to assigned collections
- Manage their own content. Add/delete
- Can request access by going to the LoD site
- ICM will have to approve access.
LoD Access Restrictions

**Authentication**
Members needs to be part of NJTrust to access this service.
No need to manage usernames and passwords

**Authorization (permit/deny access)**
Authorization is handled by the LoD system. Users identified by their shibboleth ‘eppn’ (Netid’s or Userid’s) and shibboleth affiliation.
LoD Authentication Labels

- All videos uploaded into LoD are by default ‘private’. Video can be seen only by uploader.
- Labels can be used to enable access to
  - Institutional role (student@institution.edu etc) --OR--
  - NetIDs or UserIDs (jdoe14@institution.edu)
- A Video can have multiple labels
- Applying the ‘Public’ label makes the video accessible without any authentication.
- Access by private URL in the works
Adding Videos

Insert title

Click this button to upload videos from your computer

If video is in a ftp server or a website provide the link

Abstract or description of the video

Pick the collection you want the video to be ingested to

Pick one or more subject terms
Add one or more contributors

Pick language of the video

Pick one or more target audience

This is the date the video was created.

Pick the expiration date of the video. The video is inaccessible after this date.

If the video is in a format that is not standard, pick one of the presets for conversion (FLV or MP4)
Specify NetID or UserID of the User

Pick the collection(s) that the user can add videos to

Select ‘Yes’ if all videos will have to be approved before they are published.
Next Release

- New website that allows branding
  - Customizable website template for each institution.
  - Customized display of collections per Institution
- Upload from your webcam.
- Annotations of videos.

Future Release - support for streaming to iPads and iPhone
NJVid Annotation Tool

Features

- Use shibboleth for authentication/authorization
- Search NJVid for video
- Allow users to annotate video with text
- Create a playlist of annotations
- Share playlist with other users
- Publish playlist to NJVid repository
Home Screen

Content player

Management space

Playlist
Video Search

Playback of video

Searching for a video in NJVid
NJVid New Jersey Video Portal

Video Metadata & Annotation Ability

Annotation Tool
Messages Chat Feedback Preferences Logout

Video metadata

Annotation Icon
Annotating a Video

Annotation Window

Area to provide annotation

Larger playback space
Annotation added to playlist. Playback, further editing and copying available.
About the Tool

- Adobe Flash based tool
- Web Application
- Works on multiple operating systems in many web browsers
- Available late spring early summer
NJVid Links

- http://www.njvid.net
- http://www.fedoracommons.org
- http://shibboleth.internet2.edu
- http://www.njedge.net
- http://www.vale.org
- http://www.njdh.org

millers@wpunj.edu Sandra Miller
prupis@njedge.net Sheri Prupis