Digital Access & Preservation for Video: Best Practices?!

Sean Chen (@gugek) & Miguel Bordo (@miguelbordo) Duke University School of Law

CALIcon 2013 June 14, 2013

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Friday, June 14, 13

Background & Scope of Project



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Introduction to Presenters (Miguel & Sean)

Miguel Bordo: Media Services Manager Sean Chen: Digital Initiatives Librarian

Context (Miguel)

Where are we coming from.

- * Produce more than 100 events and smaller pieces a year
- * Huge number of tapes. 250 VHS;
- * 1000 or so DVCAM; about 100 or so MiniDV
- * More than 1000 DVDs

We've been in an intermediate period with physical media.

Eventual goal is to support a fully digital workflow.

Goals (Sean)

Preserve what we have.

Digitize for preservation.

Digitize for access.

Working closely with stakeholders:

- + Communications
- + Media
- + Library
- + Customers

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Introduce Video (Miguel)

Short introduction to Hollie and what why she is speaking here.

Hollie Video

- * Repository out of video
- * Working with stakeholders
- * Existing workflow
- * Preservation Tiers
- * Scope
- * Some of the things we are doing
 - * Checksums
 - * Format conversion
 - * Access

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Selection (Sean)

Process of selecting what is going to be digitized. Preservation and collection development policies.

Digitization (Sean)

Process of format conversion. Moving from analog to digital. Though this also includes format conversions from digital to digital such as DVD to file based. Or DVCAM to file based.

Description (Sean)

Metadata. Access points. Summaries. Important places where we think that our users and interested searchers will need to find, identify, select and locate our digital assets.

Ingest (Sean)

Placing into a trusted system. Recording data about this process. Setting certain preservation information such as our file location and checksums.

Storage (Sean)

Mechanical where this thing is going to live. How are we going to insure fixity. How is this thing backed up? How can we get it out.

Distribution (Sean)

Youtube and website and all the other places it goes

Other (Sean)

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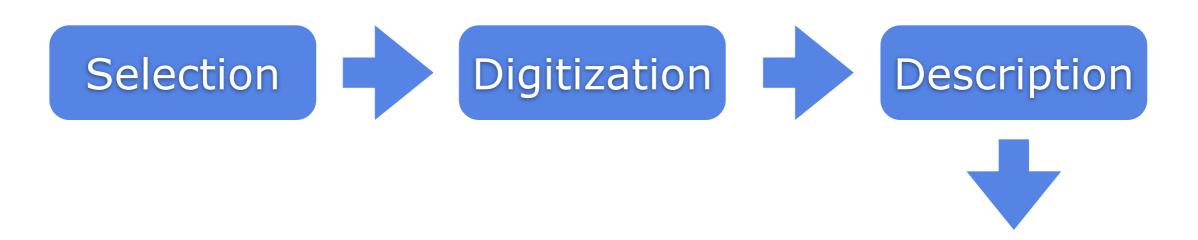
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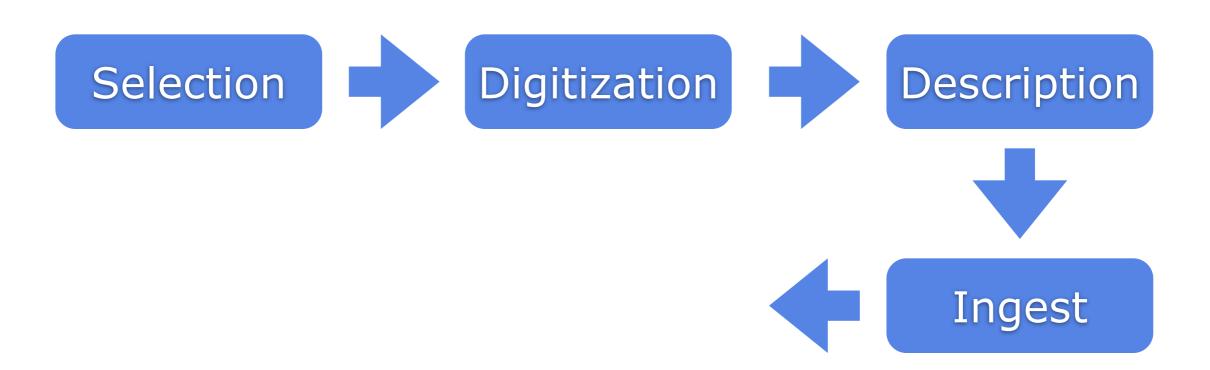
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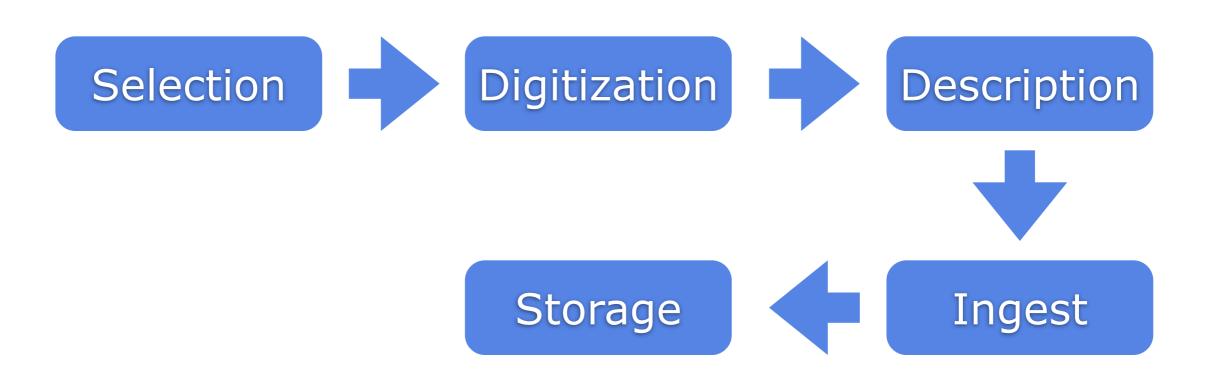
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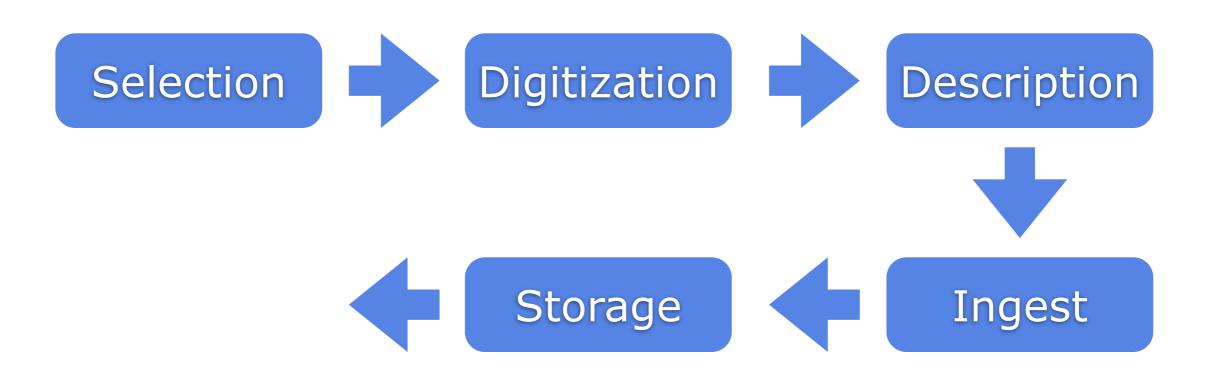
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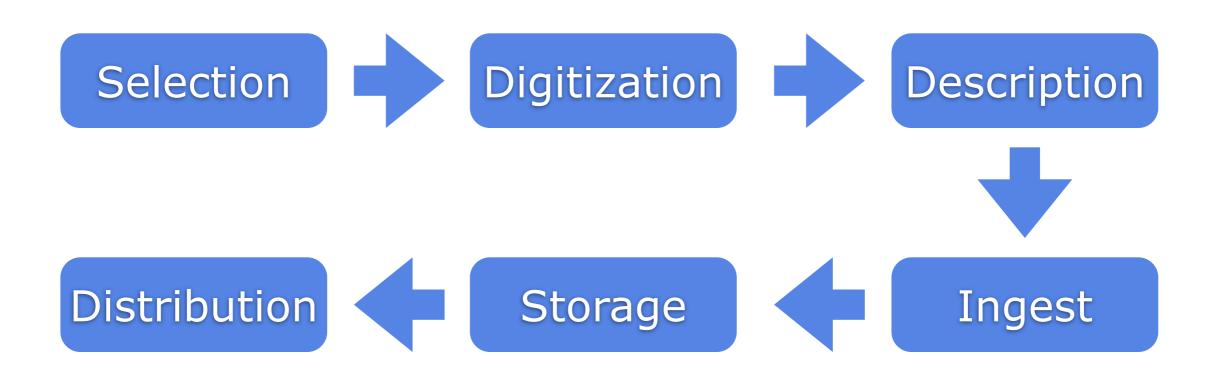
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Preservation & Collection Policy

Tier 1

Content

Recording type	Examples	Product preserved
High profile events	Events with notable speakers; strong faculty sponsorship	Final product only
Named lectures	Currie, Frey, & Bernstein series	Final product only
Oral histories	Alumni and Faculty	Final product and Raw footage
Faculty interviews	Demott discusses her amica brief	Final product and Raw footage
Produced materials	Sea turtles video	Final product only

Tier 2

Content

Recording type	Examples	Product preserved
All conferences	Journal, clinic, or center sponsored	Final product only
Student group organized events	Outlaw event; Federalist Society; Hardt Cup finals;	Final Product only
B-roll recordings	Outdoor shots; virtual tours	Raw footage
Short, one-off / promotional	Recordings requested by clinics, admissions, reunion weekend, holiday-themed video	Final product only

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Setup

What did we do to get here. Extensive process. Refer back to Hollie.

Tier 1

Stuff we want to keep indefinitely. Multiple cameras. Multiple shots.

Tier 2

Stuff we want to keep indefinitely; but, don't need to do at such a high quality. Single camera. Single wide shot.

Preservation & Collection Policy

Tier 3

Content

Recording type	Examples	Product preserved
Student produced materials	JDLM International Lives in the Law	Final product only
Social student events	Cultural Extravaganza; Book Final product only tour invitee talk; student leaders using Duke Capture	

Tier 4

Content

Recording type	Examples	Product preserved
Class recording	Civil Procedure 110.01	None

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Tier 3

Student produced materials Student social events

1 copy generally.

Tier 4

Not retained

Dark Storage

Separate issue from the tiers; if we didn't have releases for broadcast we feel that there is going to be some need for it we've created separate dark storage, which is managed similarly, but just not put in public accessible spaces.

Outgoing

Introduce Allye

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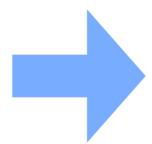
Allye gives an overview of her process.

Includes checking in tape into a spreadsheet.

And then creating a file and naming it.

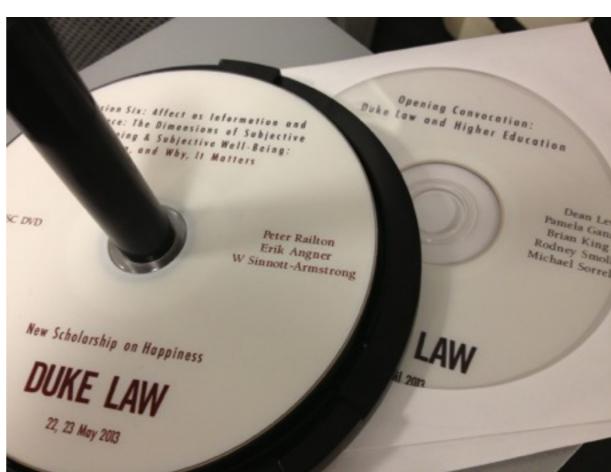
Putting into a holding area for subsequent description.

tape



DVD





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Ripping (Miguel)

Passing tape through DVD recorder.

VHS to DVD

DVCAM to DVD

MiniDV to DVD

Problems: Multiple stages of compression.

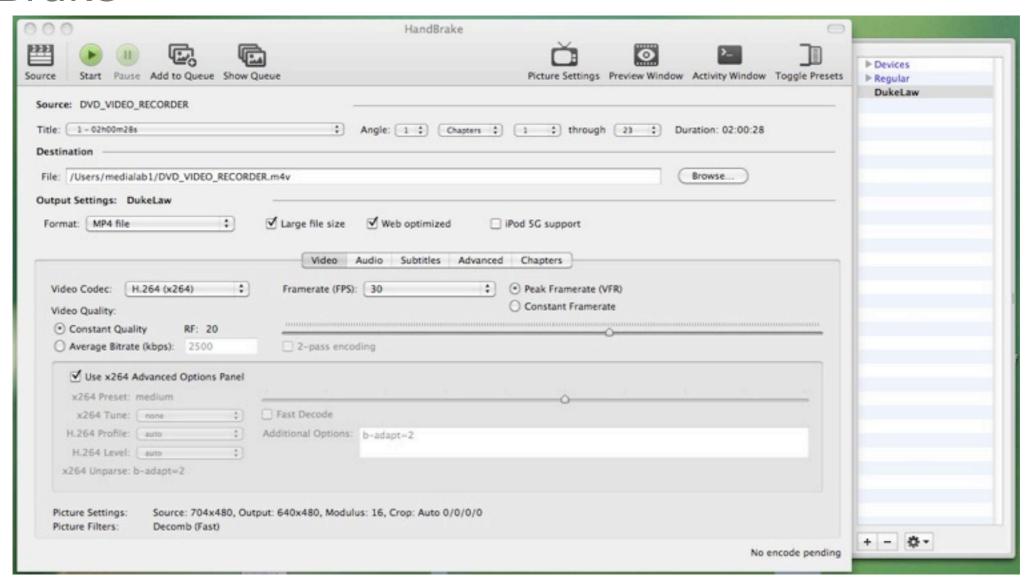
DVD is our intermediate format.

Talk about the variety of ways we recorded before: We had DVCAM and DVD Recording for a while at the same time.

Quality (Miguel)

High quality

HandBrake



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Digital Video Encoding (Miguel)

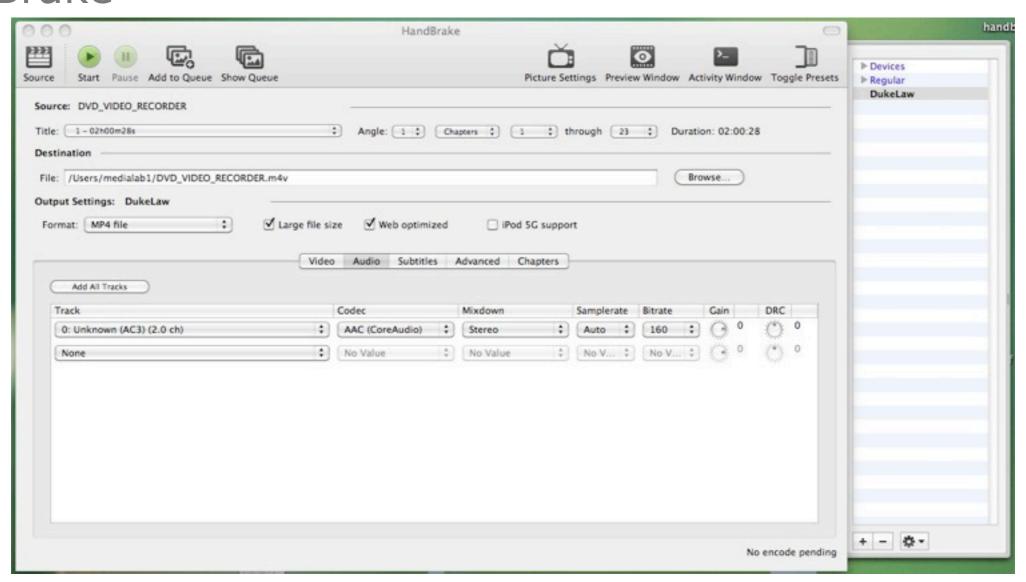
workflow - illustrated

Apple TV 3 preset in HandBrake as the base, then created the Duke Law profile with our desired specs

Another level of compression: Still OK in Quality.

Feel as if our primary requirement: reuse by professionals in the future is more than possible.

HandBrake



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Storage (Sean)

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Networking (Sean)

This storage array is in the building which solves a lot of issues we had before. Our link to the campus infrastructure is limited to a single 1 gbit connection and could be easily saturated if we were moving a lot of files between campus hosted services. This was a consideration.

Part of our upgrading was a move to network storage throughout our video production. Making sure we had the best speed available to write to a network disk is extremely important. Having it in a network device lets us manage redundancy, saves costs, and lets us manage backing up better.

Backup

Tivoli. In seperate building and infrastructure. The system backs up files nightly and preserves cannged files for a specific retention period of up to 6 months in our policy. This lets us go and retrieve a file in the event something fails an integrity check, which hasn't happened in the four months we've been doing them.

Services (Sean)

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We try to keep things fairly lightweight. Concentrating on working directly on the filesystem rather than abstracting things through an application or other iterface.

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- * Description: Worldcat & Aleph ILS
- * Distribution: Google Docs, YouTube & Drupal

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Google Documents (Sean)

Managing workflow. Keeping track of information from a whole range of people who have been working on the project.

The one thing that was invaluable for using in a project that involved a number of people working on the same data at the same time was Google Documents

This is the glue that kept our project together.

We had separate worksheets for each format as we digitized. We have a master spreadsheet with file level information for each file we want to check in and ingest.

We included information like release status, source origin, filenames, titles, identifiers, dates in the workflow, preservation actions etc.





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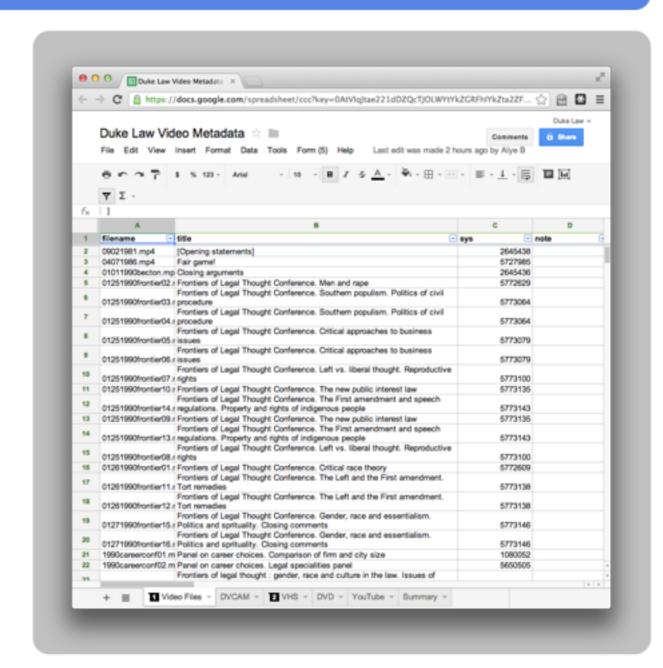
The one thing that was invaluable for using in a project that involved a number of people working on the same data at the same time was Google Documents

This is the glue that kept our project together.

We had separate worksheets for each format as we digitized. We have a master spreadsheet with file level information for each file we want to check in and ingest.

We included information like release status, source origin, filenames, titles, identifiers, dates in the workflow, preservation actions etc.

* How? Spreadsheets!



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Friday, June 14, 13

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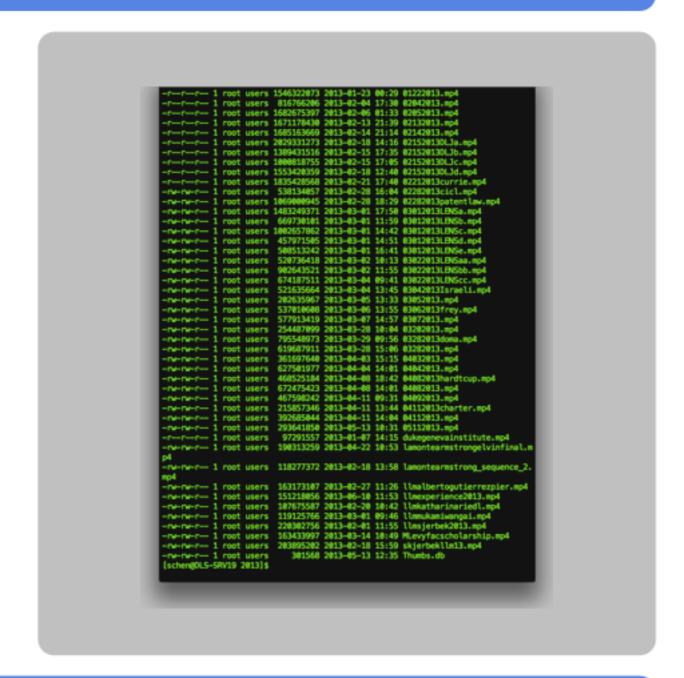
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Preservation

- * Filesystem
- * Python
- * Identifiers



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Preservation

- * unique identifier on filenames
- * filesystem
- * MD5s on files periodically
- * Auditing of the files
- * Backing up

Description

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Data Sources (Sean)

So a principal concern of our preservation plans included thinking about where the data about our videos existed already and in turn aligning it with what we think we could support in the future.

Catalog Data (Sean)

Until the point we decided to dive head long into this project the Library had already been devoting resources to describing the content that Media services had been creating for the last ten years. In a variety of ways including:

Adding physical manifestations to library collections Cataloging streaming manifestations of the video.

This existing body of data for more than five hundred individual videos already and

Duplicative of these efforts was a long standing workflow which provisioned the access of the videos through the library website. This included working within the Law School website's content management system to include information about videos on a specific video archive page.

However this was known to be redundant and and a non ideal way of doing this sort of work. And did little to ensure the long term preservation and access to this content.

Calendar & Event Descriptions

We had information from scheduling in our various calendar systems both on the web and in our email systems. This has let us reconstruct the existence of videos along with information about who appears and when something occured.

In our current workflow for current productions however this is becoming more and more important since we need this information in order to improve accessibilty and identification later on in the process.

Physical Objects

Tapes and discs had a surprising amount of information about the events they corresponded to. But often they had misleading information. But it was helpful when describing and identifying what was being shown in a video.

Description

Catalog Records



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- * Catalog Records
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- * Website

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Physical Objects

- * Catalog Records
- * Calendar & Event Descriptions
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- * Website
- * Releases

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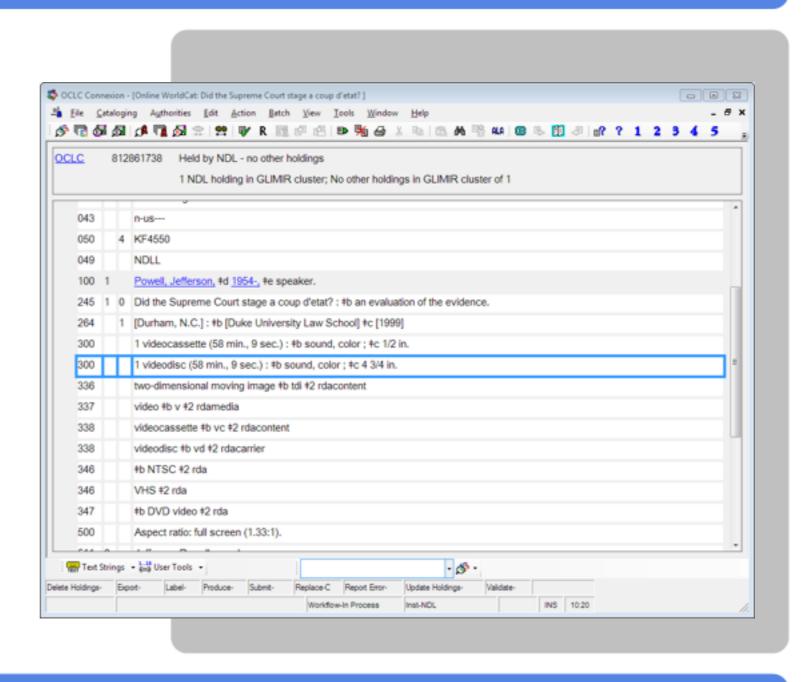
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MARC & RDA (Sean)

We used existing staff and training in order to describe and provide access and metadata about our videos.

But more importantly there already existed a layer of interaction which we could program services against each of these data sources. For our integrated library system we could identify information about source and inventory and location.

We had other considerations which made the leveraging of the existing catalog and ILS tools important. These included:

- * controlled vocabularies for subject access
- * Authority control for people appearing and contributing to videos.
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- * Permanence as data sources (we know we aren't moving away from these tools since the library still needs them).

This is expensive and time consuming but is important to us since this is unique content.

Worldcat and Connexion

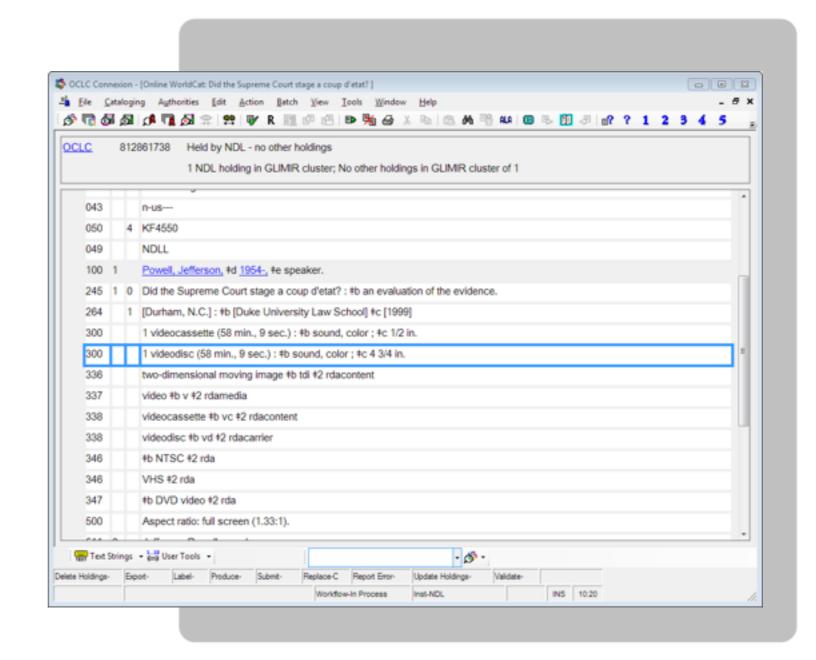
Vocabulary control (National Authority File, LCSH).

Unique identifiers for our works. Exposing in other places.

ALEPH

Information about our instantiations.





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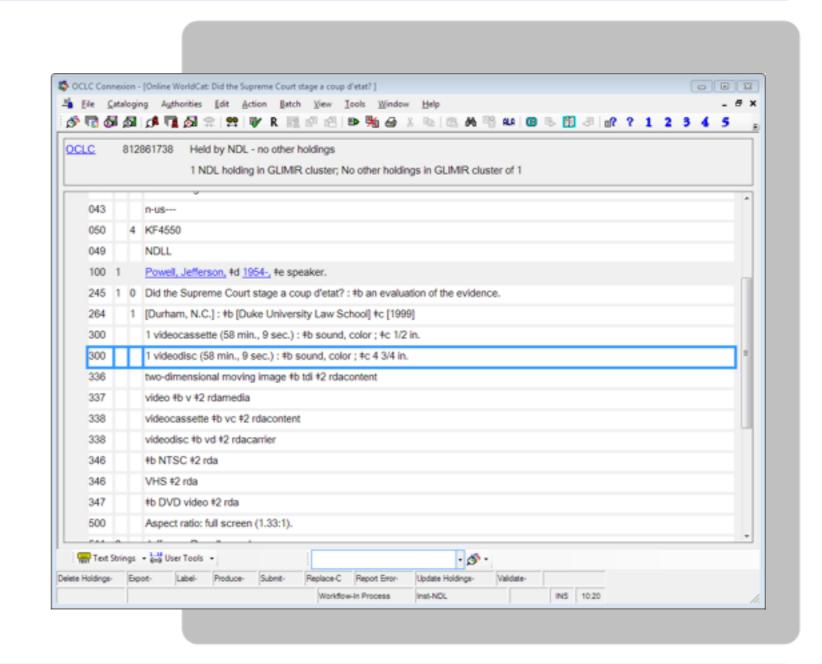
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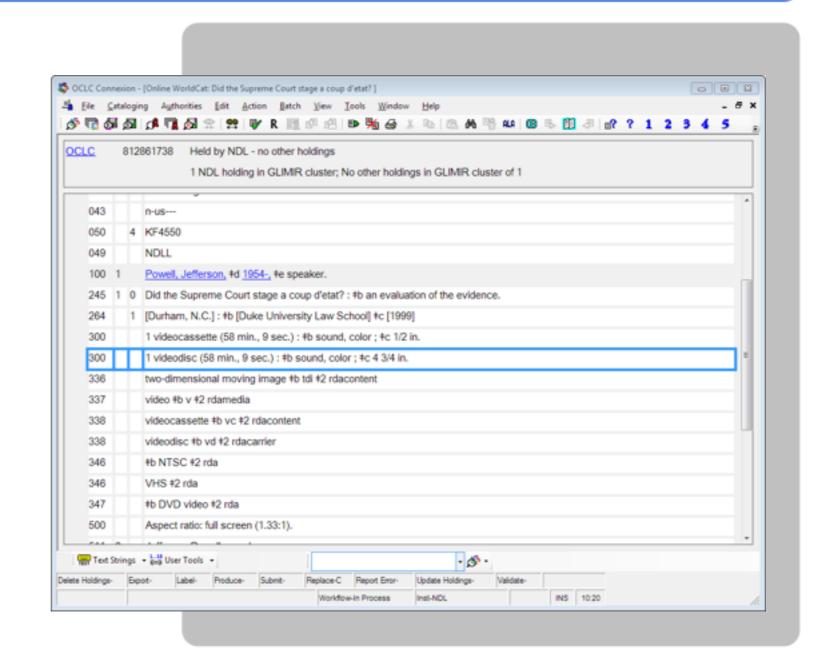
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- * Aleph ILS



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Access

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Friday, June 14, 13

General Architecture (Miguel)

One of our biggest changes was getting out of the streaming server business.

For many years we have operated our own streaming media server. Helix Streaming server. Getting out of the streaming server business.

Reasons for not operating our own:

- + Media isn't IT
- + Hard to reuse
- + Hard to manage content

Live Streaming (Miguel)

DukeStream and uStream

One is used for other higher impact events.

Not using YouTube Live yet.

Data Interoperability (Sean)

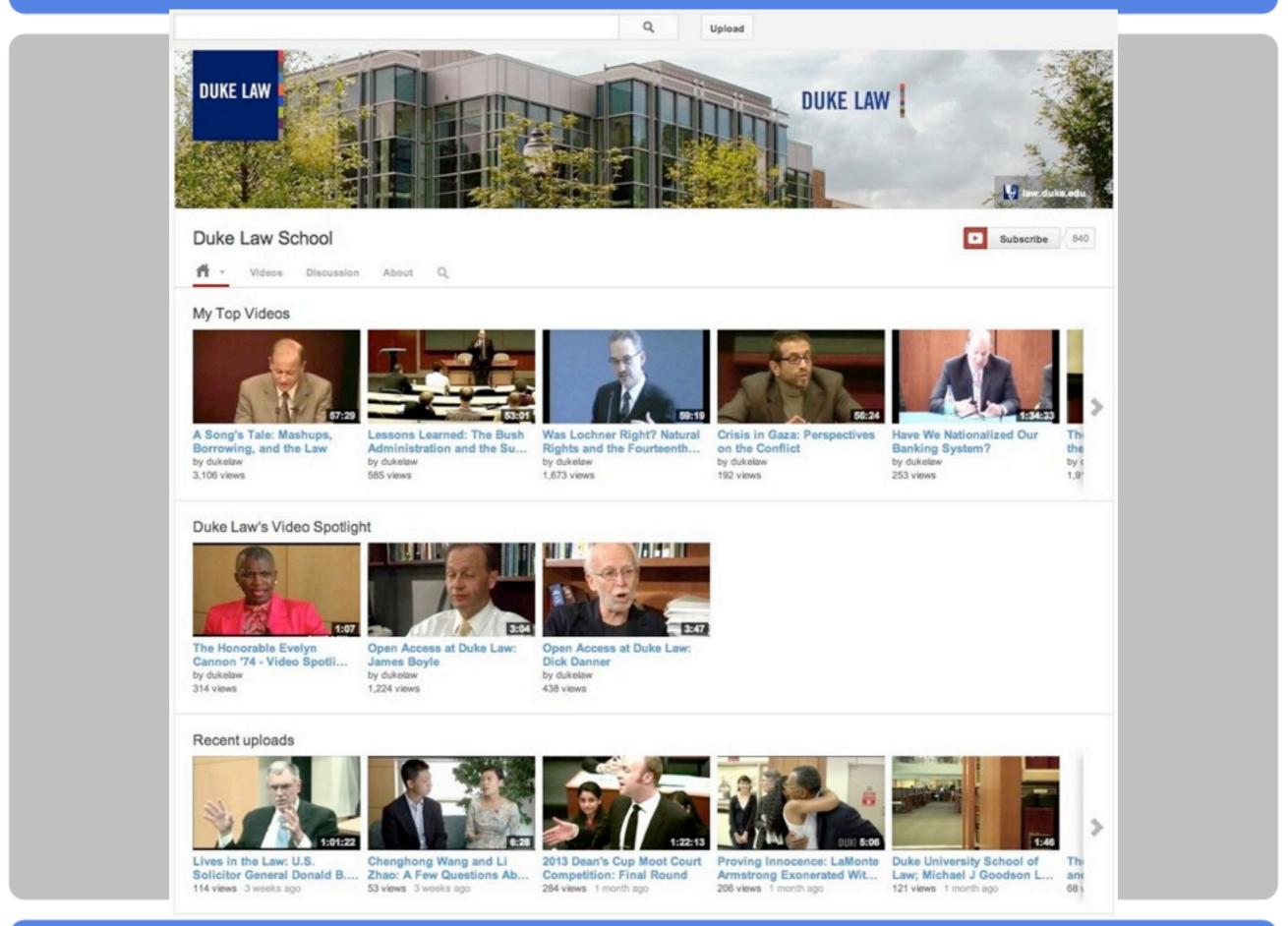
Our data flows from the catalog for our preserved material. However the data flow as we mentioned in our description section is significantly different in our production workflow.

Alternatives

We looked at other video content management systems:

There are some great options now:

+ Kaltura



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Manual Uploading (Miguel)

Video gets into youtube in a couple ways.

For our production workflow however, timing is more of an issue and media services loads videos directly into YouTube as part of their workflow.

A review step for our communication staff.

Google APIs (Sean)

We can use the various YouTube APIs, Older Google Data API and the newer Google API to automatically push video based upon whatever data into youtube.

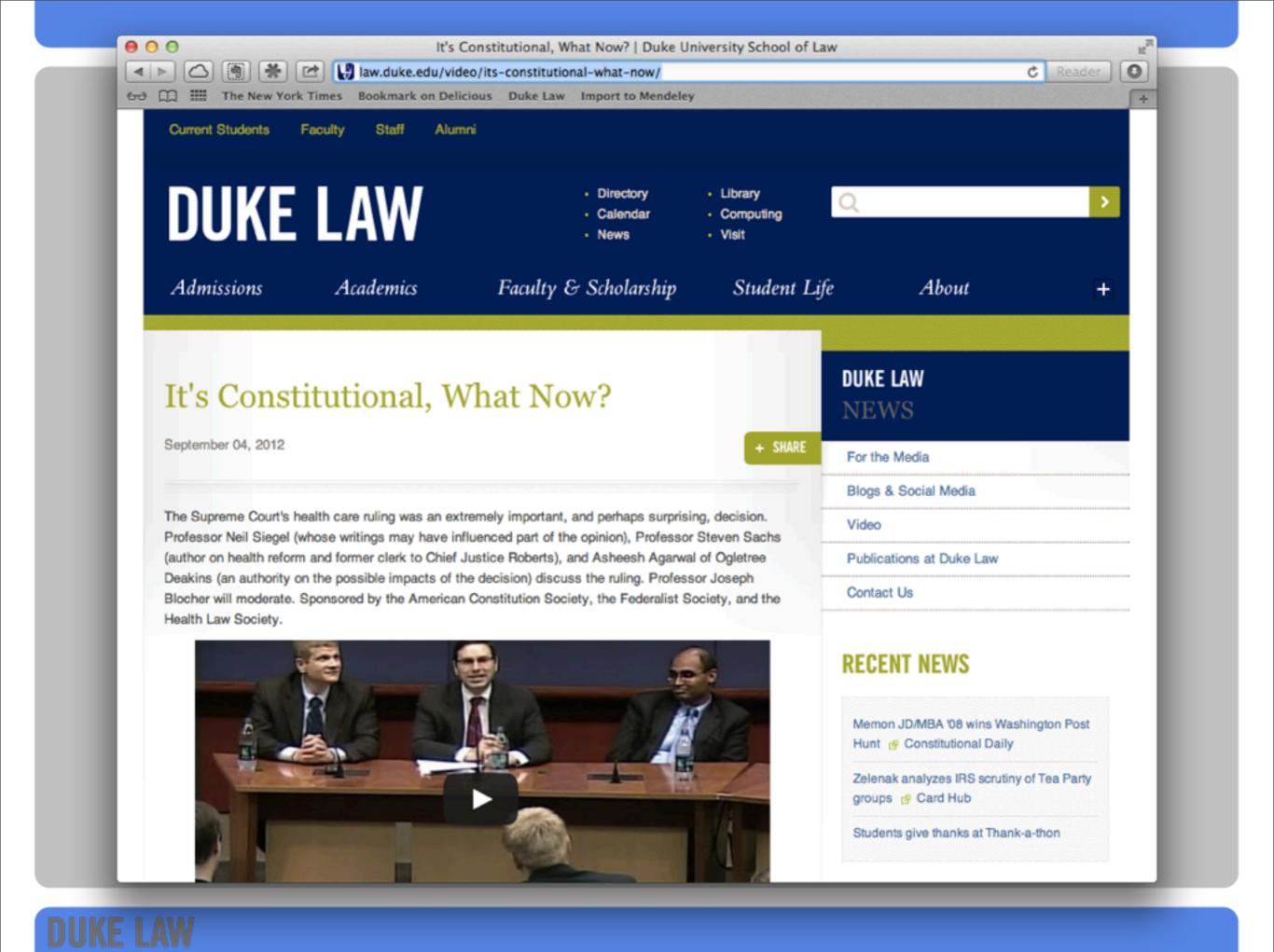
Terms of Service (Miguel)

Were not terribly burdensome to us. We aren't streaming class content or reserve content.

Getting more access > 15 minutes for educational institutions. Just need to ask.

Limitiations (Sean)

There are some issues with identification and findability. Titles are limited to 150 characters. Similarly descriptions are limited to 5000 characters. Keywords are limited to 500 characters total. With any particular keyword only being 30 characters. Through the API also you can't upload a tag with a comma in it (it breaks on commas). Just some gotchas we had.



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Importing into Drupal (Sean)

Programatic harvesting of data from YouTube.

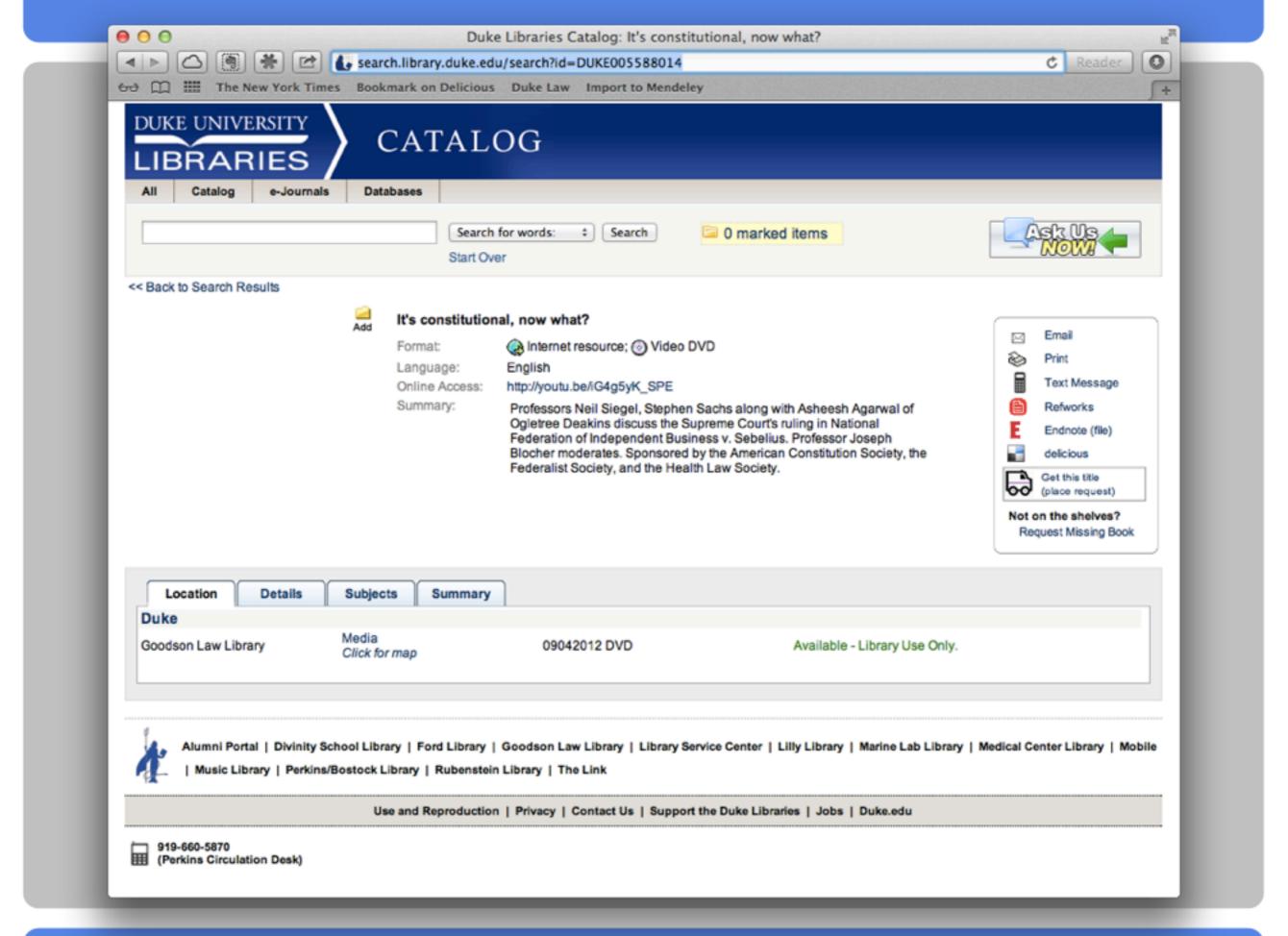
We have a thin PHP script that creates a sorted XML for the Drupal feeds module so it can create and update nodes based on the data being exposed by YouTube.

Drupal

We get nodes within our website which get indexed and in turn point back to YouTube. Again it was a minimal amount of work getting it onto the website. It is the content, descriptions, tagging and production of the video which is the hard part.

YouTube Embed

It just works for us. We can pull in the relevant code from the the provided XML feed and generate appropriate surrogates and players within our website.



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Library Catalog (Sean)

And yes we get it in our library catalog.

Authority Searching (Sean)

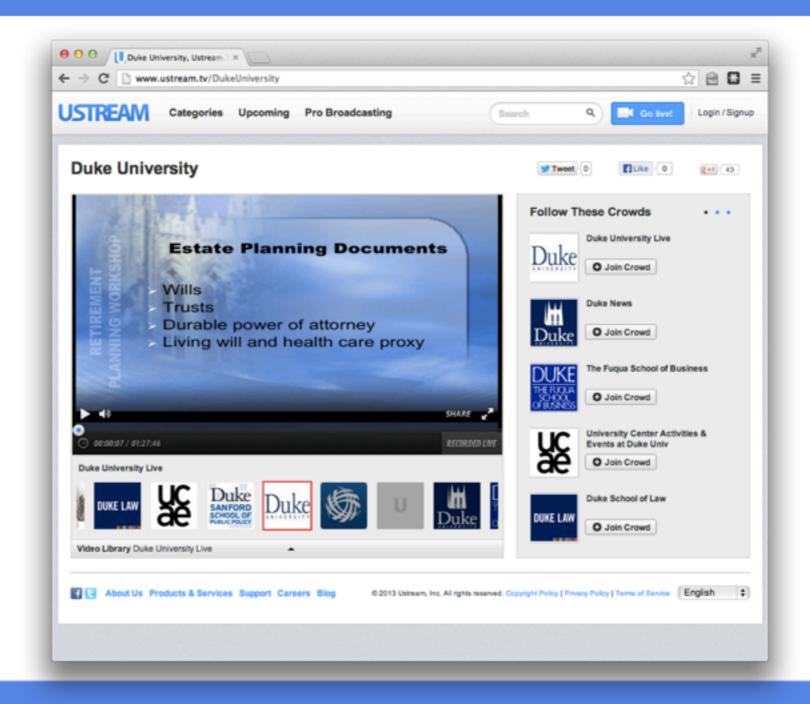
Does this matter? It probably doesn't. But this system gets us amazing ability to search and retrieve upon the rich data that we are creating for our content.

Durability of Systems (Sean)

And we are sure (well pretty sure) that it isn't going away.

This is versus the website where we have migrated three times in six years to different content management systems.

Streaming



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uStream (Miguel)

For events of interest to campus. Can support X number of users. Can stream through our website.

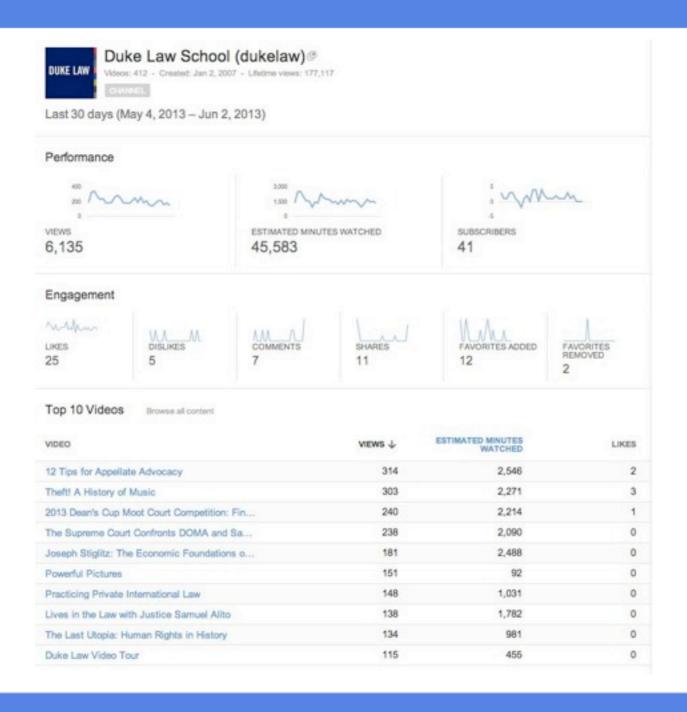
DukeStream (Miguel)

For other sorts of events. Can stream through law school website

YouTube Live (Miguel)

CALI does it! We should too. Right? Miguel.

Metrics & Assessment



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Metrics & Assessment (Miguel)

Analytics? Helps insetting or assigning preservation ties to events and requests... (Comms)

What do they look like for us?

What do we do with them?

Leading us into revisiting what we actually collect.



Friday, June 14, 13

Lossless (Sean)

We chiefly didn't go down this road since we didn't have the tools and infrastructure to support this. This is

PBCore (Sean)

Explored PBCore a bit. And I would recommend it as a description framework. But we had so much data already in MARC-AACR2 that it didn't make sense to throw that out and restart. There are a number of PBCore crosswalks available though that might help interoperability.

Digital Asset Management Systems (Sean)

Our planning included investigations into these, but when we started to look at implementing these we ran into the classic project show stoppers:

- + no resources
- + no money
- + no staff

Digital Repository Systems (Sean)

At the time we didn't have the capability or tooling to do it. This would have been some sort of framework such as Fedora or dSpace. We are a bePress customer and we looked at putting our video into there, but the biggest issue we had was how to handle dark storage. It seemed more straightforward to continue working directly on the file system and count on doing a thin layer of preservation activities until we get to the time we can actually do something more substantial in collaboration with our campus partners.





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Sean & Miguel

Web server. Building libraries with our data.

Building into a real set of repository services.

Fedora (Sean)

Our campus is building out a Hydra head on top of Fedora for its digital production workflow. This would be their preservation and service layer for their content. We are looking into collaborating in this, however issues of how to handle the large volume of video remain to be fully explored.

Some of this could be in software, and providing an ingest interface into this sort of system, but the reality is that would have to require a lot of localizations that are wouldn't in the end get us to a better state then the one we are in.

Web Content (Sean)

Because we have rich data in our catalog about each video we can do more with organizing our content on the website. We're planning to work with the various website stakeholders to work on an internal vocabulary and taxonomy in order to reuse our content in various places.

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Fedora (Sean)

Our campus is building out a Hydra head on top of Fedora for its digital production workflow. This would be their preservation and service layer for their content. We are looking into collaborating in this, however issues of how to handle the large volume of video remain to be fully explored.

Some of this could be in software, and providing an ingest interface into this sort of system, but the reality is that would have to require a lot of localizations that are wouldn't in the end get us to a better state then the one we are in.

Web Content (Sean)

Because we have rich data in our catalog about each video we can do more with organizing our content on the website. We're planning to work with the various website stakeholders to work on an internal vocabulary and taxonomy in order to reuse our content in various places.

Questions and comments

- * Thank You!
- * Sean Chen

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