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So you want to digitize?: Maximizing the value of a digitization project

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So You Want to Digitize?: Creating a Digitization Workflow and Maximizing Limited Resources

Whitney Alexander
Director of Technical Services

David Brian Holt
Electronic Services Librarian
Why should your library have a digitization service?

- Document delivery
- Inter-library loan services
- Preserving archival materials
- Improving access for patrons who are visually-impaired
- Improving discoverability
The Future is Digitization-on-Demand

Several law libraries have already begun digitization-on-demand services for materials in the public domain.
Why is digitization-on-demand so exciting for libraries?

- Helps to "triage" what materials should be digitized first based on patron demand
- Recognizes that libraries simply do not have the staff nor budget to digitize everything
Vendors are already responding to digitization-on-demand
Outsource or buy your own equipment?

If a library has only a small collection of materials to scan, it may be unwise to purchase digitization equipment as the return on investment will be too low. There are a number of companies that provide digitization services, some of them at a surprisingly low cost.
It is comparatively inexpensive to purchase back issues of your student journals from Hein. What if you can't afford that or what if your journal isn't on Hein?

You can purchase digitization equipment if you have the budget for this. Major vendors include ATIZ, BetterLight, Digital Library Systems Group, i2S, Indus, Kirtas, Konica/Minolta, Microbox, Phase One, SMA, Tarsia, Treventus, ZBE and Zeutschel. You can also try building your own bookscanner. This is MUCH cheaper and uses standard SLR digital cameras that are easily replaceable. There are lots of designs available at [http://www.diybookscanner.org](http://www.diybookscanner.org).
The Evolution of Book Scanning

In the beginning, there was the flatbed scanner. This technology has proven to be poorly suited for book scanning because it is: slow, difficult to use, destructive to the book binding, and produces poor images particularly near the area of the book binding. Pages must be scanned individually by hand.
The second phase of book scanning technology is the planetary book scanner. This is the first scanner truly designed to scan bound materials. Disadvantages of this technology include: single CCD to capture both pages, need for page curvature correction software, and margin crawl (the center of the book moves as the user turns the pages). One advantage however is that these machines are typically easier to use (because it is one unit) and may be used as a kiosk scanning station.
The V-Shaped Book Scanner

Some institutional and library scanning of bound materials is done using a v-shaped book scanner. This eliminates the need for page curvature correction software as the pages lay flat. It is also easier on delicate bindings as the book doesn't need to be opened 180 degrees. It also has a separate CCD for each page.
Advantages of a v-shape book scanner

- Doesn't require page curvature software
- Can be easily upgraded by replacing the cameras (which may be standard SLRs that are widely available)
- There is no margin crawl as the book is held in place in the cradle
- The cost is roughly comparable to a single-CCD planetary scanner but should produce better quality images and higher OCR accuracy
What about robotic page turning?

Robotic page turning is still very expensive. Even entry-level book scanners with robotic page turning start at $60K. These machines are capable of scanning around 2500 pages an hour. For about 1/6th the cost, you can acquire a non-robotic v-shaped book scanner that can produce around 700 pages an hour.
Issues to consider

- Scanners based on standard digital cameras would be much easier to upgrade.
- A digital camera that can produce a DPI high enough for OCR software is fairly expensive (with the model that comes included with the Atiz Bookdrive, we'd be unable to produce newspaper size images that would be OCR compatible).
- A platen must be moved after scanning each page, this may cause repetitive movement injuries among staff.
- A platen also, however, negates the need for page curvature correction software.
<table>
<thead>
<tr>
<th>Name:</th>
<th>Scanner Type:</th>
<th>Capture software Included:</th>
<th>Post-processing/OCR software:</th>
<th>Warranty:</th>
<th>Advantages/Disadvantages:</th>
<th>Maximum scan size:</th>
<th>Price:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ristech Kiosk Book Scanner</td>
<td>Planetary with single CCD</td>
<td>Proprietary embedded system with a touch-screen monitor</td>
<td>Outputs to PDF, unknown if OCR included</td>
<td>Three years</td>
<td>Kiosk-style scanner that could be used by students after digitization project winds down. Can use SmartPrint system.</td>
<td>18” x 24”; spines up to 12cm</td>
<td>$35,800 for system; $3,095 for software. Grand total of $38,895</td>
</tr>
<tr>
<td>Kirtas i2S e-Scan Kiosk</td>
<td>Planetary with single CCD</td>
<td>Proprietary embedded system with a touch-screen monitor</td>
<td>Outputs to PDF, unknown if OCR included</td>
<td>One year</td>
<td>Kiosk-style scanner that could be used by students after digitization project winds down. Can use SmartPrint system.</td>
<td>14” x 20.5”; spines up to 4”</td>
<td>$11,650 for system; $1,970 for book cradle. Grand total of $13,620</td>
</tr>
<tr>
<td>Kirtas Skyview 3525</td>
<td>Planetary with single CCD (DSLR camera)</td>
<td>Proprietary Windows-based system (includes computer hardware)</td>
<td>Unknown</td>
<td>90 days</td>
<td>Can scan maps, large documents, newspapers, etc.</td>
<td>25” x 35”; unknown for book spines (probably 4”)</td>
<td>$68,000</td>
</tr>
<tr>
<td>Atiz BookDrive Pro</td>
<td>V-shaped scanner with two CCDs (DSLR cameras)</td>
<td>Proprietary Windows-based system (hardware not included)</td>
<td>Outputs to PDF, no OCR software</td>
<td>90 days</td>
<td>Can easily be upgraded. Major vendor. Being used by Google, Stanford, UCLA, etc. Includes auto capture switch so machine can be used without pressing buttons.</td>
<td>16.5” x 24.2”; spines up to 11cm</td>
<td>$17,020</td>
</tr>
<tr>
<td>Atiz BookDrive Mini</td>
<td>V-shaped scanner with two CCDs (DSLR cameras)</td>
<td>Proprietary Windows-based system (hardware not included)</td>
<td>Outputs to PDF, no OCR software</td>
<td>90 days</td>
<td>Can easily be upgraded. Major vendor. Being used by Google, Stanford, UCLA, etc. Does not include auto capture switch. User must press button for each scan.</td>
<td>10” x 15”; spines up to 5cm</td>
<td>$8,895</td>
</tr>
<tr>
<td>Book2Net Spirit Scanner</td>
<td>Planetary with single CCD</td>
<td>Proprietary embedded system with a touch-screen monitor</td>
<td>Outputs to PDF, unknown if OCR included</td>
<td>One year</td>
<td>Kiosk-style scanner that could be used by students after digitization project winds down. Can use SmartPrint system. Rave reviews from other libraries.</td>
<td>13.82” x 19.21”; spines unknown</td>
<td>Reportedly around $9000</td>
</tr>
<tr>
<td>Kirtas CopiBook BW</td>
<td>Planetary with single CCD</td>
<td>Proprietary embedded system with a touch-screen monitor</td>
<td>Outputs to PDF, unknown if OCR included</td>
<td>One year</td>
<td>Kiosk-style, easy to use. Black and white only.</td>
<td>16.5” x 25.2”; spines up to 3.9”</td>
<td>$22,000</td>
</tr>
<tr>
<td>Zeustechel Zeus</td>
<td>Planetary with single CCD</td>
<td>Proprietary Windows-based systems</td>
<td>Outputs to PDF, unknown if OCR included</td>
<td>90 days</td>
<td>Very easy to use; kiosk-style, touch screen.</td>
<td>18.1” x 25”</td>
<td>$13,650</td>
</tr>
</tbody>
</table>
Digitization Equipment Vendors
The Crowley Company
Kirtas Technologies
Atiz
Do it yourself!
What we purchased at Santa Clara Law

Zeutschel OS 12000C

- Can be easily upgraded
- Software is being constantly updated
- Large enough for legal newspapers
- Good price (~$18,000)

Zeutschel Zeta

- No platen to move
- Excellent price ($10,000)
- Easy to use touch screen
- Can be used by students after the digitization project has slowed down
Review of overhead scanners

Workflow Management
Distributing workflows economically

- Cross training across departments
- Work with technical services and circulation
- Give individual staff members responsibility for a project
- Work with library science interns! These projects make GREAT virtual internships (check out http://slisweb.sjsu.edu/current-students/courses/internships/virtual-internships)
A Few Examples .... and the metadata

I will cover these topics:

- Very brief overview of considerations for digital projects
- Examples of problems (even in a straightforward project)
- A small project from start to (almost) finish
- A few words about metadata
- Summation
Initial project considerations

- Copyright considerations
- Where will digital files be stored?
  - Local database
  - Commercial database (ex: digital commons)
- What resolution (300 dpi, 600 dpi, less)?
- What format (PDF, TIFF, both, other)?
- How will you handle graphics?
- How will you handle analog content?
- How will you handle video and audio content?
Initial project considerations - Discoverability

- Run OCR software over scanned documents? If so, do OCR cleanup or leave it as raw text?
- Create indexed text files?
- If not, what about visually impaired users?
- And what about submission to discovery service platform?
Some digitization projects are relatively straightforward ...

- ... and if you believe that I have some land west of San Francisco ...
- even straightforward projects aren't straightforward
- case in point: the Watergate Hearings
The Watergate Project

- Cong. Don Edwards' annotated papers from the Watergate hearings
- Typed, one-sided leaves in binders (70 binders to be exact)
- http://digitalcommons.law.scu.edu/watergate/

This series is a collection of papers produced during the Watergate Hearings that were donated by Congressman Don Edwards to the Heafey Law Library. Don Edwards (born January 6, 1915) is an American politician of the Democratic Party, formerly a member of the United States House of Representatives from California. Edwards was elected as a Democrat to the 88th from the 10th Congressional District.
Watergate Hearings, a few problems

- Yuck!!
- What do you do? Especially when there are hundreds of pages in the collection look like this?
Watergate Hearings, a few problems

- The set has many annotations made by Rep. Edwards
- What should you do with them? Transcribe as OCR readable data?
- What about the annotations that are hard to read, should they be transcribed, if possible?
Watergate Hearings, a few problems

- Other issues:
  - A single PDF file per binder would be much too large to download from the Digital Commons
  - How to split up the binder into manageable size files?
  - This is a very large project. How can it be divided among multiple people without any overlap
    - How to maintain scanning and metadata quality across all participants
    - Communication is paramount
Digitizing ... it's not just scanning

- Collections may have non-print material in addition to print
- In addition to scanning print items, we digitize analog video and audio materials
- We have also started a fiche digitization project
- Once the word gets out that you can digitize audio and video, you'll find that everyone has analog materials they need digitized
A project from the beginning

- Maria, our main scanner
- This is the story of the Bench & Bar Historical Society of Santa Clara County papers.
- Sounds boring, doesn't it?
- I thought so too, at first ...
Bench & Bar Hist. Soc.

- A collection of annual mock trials and lectures held by the Society
- Each mock trial or lecture has a video on CD as well as accompanying print documents
- The first consideration was how to scan the documents
  - each page as a separate file
  - or create one document per trial/lecture
- We chose one doc. per trial/lecture
- What format for the video? mp4
- Obtained permission from donor include collection in our digital commons
- As example, we'll look at SJ v. Paris
Bench & Bar Hist. Soc.- SJ v Paris

- A copyright infringement case concerning SJ Light Tower (1881) and Eiffel tower (1889)
Bench & Bar Hist. Soc.- SJ v Paris

The Bench and Bar Historical Society of Santa Clara County
2301 Ulster Place, Suite 250 West
San Jose, CA 95129-2828
(408) 299-4727

December 19, 1989

Jacques Chirac, Mayor
The Office of the Mayor of Paris
The City of Paris
Paris, FRANCE

Dear Mr. Chirac:

I represent the Bench and Bar Historical Society of Santa Clara County, located in California on the

COMPLAINT FOR INFRINGEMENT OF COPYRIGHT AND UNFAIR
COMPETITION, DESIGN PATENT
INFRINGEMENT, COPYRIGHT
INFRINGEMENT OF WORK OF
ART

THE CITY OF SAN JOSE,
CALIFORNIA,
Plaintiff,

VS.

THE CITY OF PARIS, FRANCE;
FRANCE; THE ESTATE
OF MSSR. GUSTAVE
EIFFEL; DOES 1
THROUGH 50,
Defendants.

The above named Plaintiff, THE CITY OF SAN JOSE,
does hereby file this SPURIOUS complaint against the

San Jose, California, Sunday Morning, December 25, 1981

San Jose, California, Sunday Morning, December 25, 1981
This is a PDF list we received with the collection and a text file derived from it.
Bench & Bar Hist. Soc.-- Metadata

- Metadata was included in collection as a PDF file (probably originally a MS Word file)
- PDF was exported as a text file
- The text file was run through a python script for cleanup and formatting
- The new text file was then ready for import into a Digital Commons batch load Excel spreadsheet
- PDF and video files are uploaded to public file on Dropbox for harvesting by DC
Bench & Bar Hist. Soc.-- Metadata

- Formatted text file
- Excel file ready for batch upload
A little more on metadata

- At CALI last year I presented a method for batch loading metadata for the backfiles of our three student law reviews
- Method involved gathering metadata from several online sources and combining it into an Excel spreadsheet
- Used Excel functions to parse the metadata into the correct form
- Information available at: http://digitalcommons.law.scu.edu/librarian/8
Other projects - video conversion

- We are currently digitizing all of the analog videos in our collection
  - Many of our videotapes are in bad condition
  - Digital format is easier for faculty to use for classroom instruction
  - Purchase equipment necessary for digital conversion
  - Identify which are available for purchase in digital format
  - Videos are burned onto DVD-ROMS and some are uploaded to YouTube
Other projects - audio conversion

- We are currently digitizing selected audio tapes that are not available for purchase digitally
  - digital format is easier for faculty to use for classroom instruction
  - purchase equipment necessary for digital conversion, available at any electronics store
Summing it all up...

- Examine collection contents and decide how best to digitize the items
  - what format are they in
  - how well will the collection scan
  - do you want print documents to be OCR readable for full text access
  - should you transcribe audio and video files
  - where will the files be stored
- Metadata (when available) comes from many different sources and in all shapes and sizes
  - metadata in electronic format can be manipulated to fit your needs
Thank you!

Whitney Alexander  
Director of Technical Services  
walexander@scu.edu

David Brian Holt  
Electronic Services Librarian  
dholt@scu.edu

Presentation available at: http://bit.ly/11CuAxA