ETD on a shoestring

A case study

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Introduction

• A case study - No theoretical framework
• General ideas reflected
  – Web2.0 “perpetual beta” (O’Reilly)
  – Library entrepreneurship “Think like a start-up” (Matthews)
• What this presentation is not about
  – Technological solutions
  – Sustainability solutions
  – Even preservation
• What it does demonstrate
  – Importance of long term view
  – How individuals can play roles
  – The importance of articulating a vision
  – Action bias leads to opportunistic consequences
“What is start-up thinking?

- Accept constant change
- Build a platform
- Action bias
- Form a culture
  (Matthews 2012)
- Web 2.0 revisited?
- “Perpetual beta”
  (O’Reilly 2005)

Photo: http://workingforwonka.com/business-plan-for-startups/
How did the UOIT Library do this?

- starting early
- accepting failure
- being iterative
- strategic approach ("pivot toward success"),
- seizing opportunities to enter spaces beyond its traditional territory
UOIT Backgrounder

- Ontario’s newest university (2003)
- Technology focus – in teaching and learning
- Dual structures (governance, operational)
- Two cultures (Durham College)
- Campus Library – Durham College legacy, UOIT focus
The environment (details)

- UOIT in 2004
  [http://uoit.ca/footer/about/uoit_info/history.php](http://uoit.ca/footer/about/uoit_info/history.php)
- Special Mandate (Created by the Ontario Government)
- Roots in the community college culture (Durham College)
- Second laptop program in Canada (ubiquitous wireless network)
- Only university offering BA in nuclear engineering and radiation science (Kalinowski)
- “MIT of the North” aspirations
- Research mandate was outlined in the original act
The Library and campus IT Services (ITS)

- ITS rooted in the community college culture
- Campus was primarily Windows shop
- Suspicious of open source
- Security considerations
- Compromise: library servers in a “non-trusted” zone of DMZ
- Division of operations
  - ITS: OS level support
  - Library: application level support
Why an IR?

• UOIT mandate – market oriented programs
• UOIT aspirations – “MIT of the North”
• UOIT Library needs – digital assets
• Global developments in emerging repository and digital asset management software
  – Tennant 2002: DSpace more flexible than e-prints; Bepress (later adopted for “escholarship”/ California digital library)
  – Yeates 2003: IR software is similar to other digital asset management (LOCKSS) – IR Fedora, Coda (Caltech), Ebrary
  – Drake (2004): Knowledge bank (Ohio State University)
  – Gibbons 2004 (other European: ARNO, CDSware, l-Tor + Documentum + ILS systems (digital modules from Exlibris, Endeavor)
Why DSpace?

One word: flexibility

Key decision points for DSpace

- Preservation (bitstreams, format guarantee, etc.)
- PURLs (Handle system)
- Support for decentralization (Communities model)
- OAI
- Open source (proved prescient later)
The UOIT DSpace project history – proof of concept

- 2006 Environmental Scan
- Value of open source products – flexibility in DSpace
- Needs include both discovery and preservation
- Experience of other Canadian university libraries (University of Toronto, Queens University in Kingston, and the University of Manitoba in Winnipeg)
- Staffing implications (average 1.6 FTE - 2006 CARL survey) – UOIT had none
Test Instance

• Summer 2006
• Out of the box install
• Content recruitment generally a challenge for IRs (Bailey)
• Four content strategies (Giesecke)
• If you build it, will they come?
• Possible motivating factors:
  – New institution + aspirational factors
  – Increased visibility of research
  – Building the UOIT brand
  – Practical outlet for publishing
The demise of “Artoo”

- If you build it...
- No clear mandate was articulated
- No strong visual identity
  Branding confusions
- “Fail faster, fail smarter”

http://gadgetsin.com/star-wars-r2-d2-folding-armchair.htm
IR- Second take (2007)

• Development outsourced – still DSpace
• 3 purpose built instances – delivered in late spring
• Look and feel integrated with corporate identity
  Tools:
  – Linking to the enterprise CMS system
  – Reuse of CSS
  – Use JavaScript for dynamic menu system
  – Customization of the DSpace JSPUI
  – Single physical server (IBM)
  – Vserver + Linux-Debian distro
ETD on a Shoestring

ETD 2013 Hong Kong, September
The 3 DSpace instances

- e-Scholar@ UOIT (IR)
- Digilog – digital asset management, in two flavours (UOIT and Durham College)
  - No PURLs/handle server, hidden submission system
  - Migrated special collections from Sirsi system
  - Digitization of the College newspaper
The ETD project

- Fortuitous timing
- 2007 spring - first graduating classes (bachelor level)
- Faculty of Graduate Studies formed
- Office of Grad Studies (OGS) started working on theses policies and procedures
- Wanted a print based system
- Campus Library consulted for binding and archiving print theses
- Library proposed ETD alternative
- OGS and Library collaborated to develop the ETD framework
Theses workflow – forms based approach

• OGS:
  Forms and media:
  – Summary of examination committee decision
  – Certificate of approval
  – Electronic copy of thesis (pdf format)
  – Thesis release form (author’s declaration, copyright agreement included)
  – Non-exclusive license to reproduce thesis (in anticipation for inclusion in external collections such as by ProQuest and the National Library of Canada)
  – Request for approval to withhold thesis from public domain (embargo up to 12 months, if applicable)
  – Submission of thesis or master’s project form (primarily metadata collection)

• Library:
  – Receives metadata + copy of theses on CD
  – Submission to e-Scholar
ETDs in production!

- First theses deposited in April 2008
- About a dozen more the same year, the fifth year of operations at UOIT

Image: http://upload.wikimedia.org/wikipedia/commons/4/43/Fireworks_at_the_celebration_of_the_United_States_4th_of_July.jpg
By OakleyOriginals (Flickr) [CC-BY-2.0 (http://creativecommons.org/licenses/by/2.0)], via Wikimedia Commons
The second phase of the ETD – 2009

• Potential synergies with aggregated content providers
  – Library and Archives of Canada – LAC
  – NDLTD Union Catalog
  – ProQuest PQTD

• Discovery, promotion, and preservation

• Mechanisms
  – OAI harvesting
  – Digitization and indexing service (ProQuest)
Theses Canada portal (LAC) and the ProQuest partnership

• LAC – ProQuest contract for digitization of theses and dissertations
• LAC acquires digitized copies for the portal
• Gap in the contract 2002-2006 (LAC develops system for harvesting e-theses directly from Canadian Universities with ETD systems (Jewell)
• Primarily metadata harvesting, but later ingesting theses and dissertations
Welcome to the Theses Canada Portal!

Introduction

- Obtain a Thesis
- For Students
  - Submission Guidelines for Students
  - Theses Non-Exclusive License
- For Universities
- About Electronic Theses
- About Copyright
- About Theses Canada
- Related Sites
- Comments

Canadian universities participate in the program voluntarily by submitting approved theses and dissertation to Theses Canada. Library and Archives Canada (LAC) staff are happy to provide advice to Canadian universities that are establishing electronic theses and dissertations (ETD) programs and welcome new electronic participants.
UOIT theses in PQDT
University of Manitoba (Canada)  View 3735 documents
University of New Brunswick (Canada)  View 1758 documents
University of Northern British Columbia (Canada)  View 687 documents
University of Ontario Institute of Technology (Canada)  View 260 documents
- aerospace engineering  View 3 documents
- alternative energy  View 7 documents
- analytical chemistry  View 1 document
- applied mathematics  View 3 documents
- architectural  View 1 document
- artificial intelligence  View 1 document
- atmospheric sciences  View 1 document
- automotive engineering  View 10 documents
- biochemistry  View 10 documents
- biogeochemistry  View 1 document
- bioinformatics  View 1 document
- biomechanics  View 1 document
- biomedical engineering  View 5 documents
- biophysics  View 1 document
- caribbean studies  View 1 document
- cellular biology  View 3 documents
- chemical engineering  View 10 documents
- civil engineering  View 1 document
- communication  View 1 document
- computer engineering  View 16 documents
- computer science  View 24 documents
- criminology  View 22 documents
- developmental psychology  View 1 document
- ecology  View 3 documents
- economics  View 1 document
- educational psychology  View 1 document
- educational technology  View 4 documents
The ETD project challenges

• LAC-ProQuest relationship and workflows not transparent (e.g., who owns the Theses Canada non-exclusive license)
• UMI-ETD Administrator tool (buggy for Canadian application)
• Alternative FTP submission tool – not well documented, had to be simplified
• LAC harvesting – technical requirements
  – OAI harvesting support
  – Metadata to validate to ETD-ms standards – DSpace does not have native support
    • DSpace metadata schema expanded to conform to ETD-ms
    • OAI module did not work with LAC - crosswalk script adapted from U of Manitoba
What we have learned from collaboration

- Well, collaboration is good!
  - Bridging knowledge and resource silos benefit all
- No need to reinvent the wheel.
  - Taking advantage open source software and developer community
- Timing is everything. Seize the opportunity when it presents itself – before it is too late.
  - Opportunistic in taking a lead early during policy development at Graduate Studies
What we have learned from collaboration (continued)

• Don’t be afraid to fail.
  – A degree of risk taking is necessary for successful projects

• Persistence is important.
  – In all projects, but particularly when there are interplays of different cultures

• You can start with a small budget (and stay on a small budget).
  – Often a function of size and complexity
Implementation and Annual Reported Costs Plus Annual Reported Costs for Personnel, Software, and Hardware – from a 2012 survey of 49 US academic libraries (Burns, C. Sean; Amy, Lana; John M., Budd)

<table>
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<th>Costs</th>
<th>n</th>
<th>Min</th>
<th>Mdn</th>
<th>M</th>
<th>Max</th>
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<tr>
<td>Implementation</td>
<td>17</td>
<td>$1,200</td>
<td>$25,000</td>
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<tr>
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<td>$500</td>
<td>$5,500</td>
<td>$13,250</td>
<td>$50,000</td>
</tr>
</tbody>
</table>

http://www.dlib.org/dlib/january13/burns/01burns.html
Cost of the UOIT project

• Start-up costs < $10,000
• Ongoing annual (lumpy, depending on upgrade cycle)
  – Direct costs to library absorbed by technical services
  – Campus ITS (taking advantage of economies of scale – marginal increase in costs in general datacentre support, backup, patches and upgrades to the operating system)
  – Periodic hardware refresh and software upgrades
  – Intangibles: Theses Canada participation (preservation aspects) Google, NDLTD union catalogue (discovery aspects)
Conclusion and Future Directions

• Present: steady state, low cost, relatively low profile
• Mixed content (grey literature, digital assets and online periodicals/newsletters)
• UOIT research output reaching critical mass
• Importance of research intensity in the Canadian public funding model for universities
• New areas
  – Faculty profiles
  – Scholarly communications

UOIT Citations in Each Year
(Citation report generated on July 1, 2013 from The Web of Science)
References

• Kalinowski, T. 2003, A field of Ivy League dreams ; Province’s newest university breaks ground in Oshawa Build it and they will come, president is convinced, Toronto, Ont., Canada.
• Mathews, B. 2012a, Think Like A Startup: a white paper to inspire library entrepreneurialism , http://vtechworks.lib.vt.edu/handle/10919/18649. [01/07/2013].
Thank You!

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