AN OPEN SOURCE, OPEN ACCESS JOURNAL DATABASE APPLIANCE: A PROPOSAL

Presented at:
Managing technologies and library automated systems in developing countries: Open Source VS commercial options

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Outline

- Open Access Journal Database Appliance (OAJDA)
- Other projects
  - eGranary Digital Library
- Reasons for these projects
- Recommendations
- Not necessarily in this order
About Me

- Systems Librarian @ TCNJ
- President of Linux Users Group in Princeton
- Long time Open Source advocate
- Realist (best software for the job)
The College of New Jersey
Brief Overview of Open Access Journal Database Appliance (OAJDA)

- Open Source Software (such as Greenstone)
- Open Access Content
- Provides enhanced access to scholarly publications
- Designed to be used without Internet connectivity
- Designed with Academic and College Libraries in Least Developed Countries (LDCs) in mind, but could be used by anyone, anywhere
Least Developed Countries (LDCs)

- United Nations designation
- Criteria:
  - Low-income (three-year average GNI per capita of less than US $750, which must exceed $900 to leave the list)
  - Human resource weakness (based on indicators of nutrition, health, education and adult literacy)
  - Economic vulnerability
  - Countries with populations over 75 million are excluded
- 50 total countries (34 in Africa)
Least Developed Countries (LDCs)

Map of the Least Developed Countries as defined by the United Nations
Source: http://en.wikipedia.org/wiki/Least_developed_country
Internet Connectivity Issues in LDCs

- Very slow or limited Internet access
- Most research still done using traditional print periodicals (Oyelaran-Oyeyinka and Adeya, 2004, pp. 75)
- Even at connected universities, students and professors can't always get online (Miner and Misner, 2005, pp. 28)
- Average connected African university is only connected 5 hours per day (Miner and Misner, 2005, pp. 28)
A Bandwidth Comparison

The University of Iowa
28,000 students

150Mb common use

100Mb network backbone

25Mb scientific use

Ahmadu Bello University
20,000 students

1 Mb common use

100Mb network backbone

Source: http://www.widernet.org/Proposals/digitallibrary/PowerpointPresentationOnDigitalLibrary_files/frame.htm
Programs to Improve Network Infrastructure

- African University Network
  - A joint United Nations Agency project (United Nations University (UNU) and International Telecommunication Union)
  - Goal is to have every African College and University connected by 2015
  - http://gvu.unu.edu/docs/African%20University%20Network.doc

- Connectivity Africa: a programme to improve access to information and communication technologies (ICTs) in Africa.
  - http://www.connectivityafrica.ca/
Some Existing Open Source Software Initiatives in Africa We Learned about at the Pre-Conference

- Koha implementation at University of Kinshasa (Filip Kabeya)
- SIDAREC (Nairobi, Kenya) (Unni Knusten)
- MALICO's plan to install Koha at one of their smaller colleges (Malawi) (Dorothy Eneya)
- Some audience members mentioned their own projects/success stories
Improving Access to Scholarly Materials

- Solutions need to consider:
  - Sub-standard network infrastructure
  - Limited number of computers
  - Limited number of computer professionals
  - Inadequate funding
Open Source Software

- No charge
- Users can make changes
- Users can share software
- Not dependent on Western corporations
  (Fuchs and Horvack, 2006)
Four Freedoms of Free Software

- The freedom to run the program, for any purpose
- The freedom to study how the program works, and adapt it to your need
- The freedom to redistribute copies so you can help your neighbor
- The freedom to improve the program, and release your improvements to the public, so that the whole community benefits

Source: http://www.gnu.org/philosophy/free-sw.html
Open Access

- Open access “calls for scholarly publications to be made freely available to libraries and end users” (Corrado, 2005 n.p.)
- In other words “(OA) is immediate, free and unrestricted online access to digital scholarly material, primarily peer-reviewed research articles in journals.” http://en.wikipedia.org/wiki/Open_access
- Less legal hurdles and copyright issues
- Focus on identifying and collecting content rather than negotiating with content providers
Simple Solutions

- Easy to install and maintain
- Simple, straight forward, user friendly interface
- Possible software/protocols
  - E-Prints
  - Greenstone
  - Open Archive Initiative Harvesting Protocol
- Better automation and lower costs
How?

- Identify Open Access content
- Collect/harvest data using Standard protocols
- Store data into a “portable” digital library tool such as Greenstone
- Distribute OAJDA to libraries
Challenges

- How to get the data to libraries located in rural areas of LDCs?
  - Internet delivery might be possible during periods of connectivity/low-use times
  - Hard drives
  - USB memory storage devices
  - DVD-ROMs

- Who
  - Professional organizations such as IFLA
  - NGOs (Such as eIFL)
  - Sister library program
  - Local organizations/community
Fits with Fuchs and Horvak's call for “solutions to the material and social causes of the global digital divide [...] based on open standards and copy-left licenses.”
Related Projects/Initiatives

- **The Access to Global Online Research in Agriculture (AGORA)**
  - Provides free or low cost access to 958 journals from leading academic publishers

- **Electronic Information for Libraries (eIFL.net)**
  - An independent foundation that's main focus is to negotiate affordable subscriptions to electronic resources on a multi-country consortial basis

- **African Journals OnLine (AJOL)**
  - Provides online access to scholarly research published inside of Africa using the Open Journal System
eGranary Digital Library

- Maintained by the University of Iowa's WiderNet Project”
- “Internet-in-a-box” solution
- Intranet Web server INSIDE partner institutions
- Replaces “Bandwidth with Storewidth'
eGranary: How they do it

- Identify Web sites with rich educational content
- Secure the author's or publisher's permission to copy their materials
- Copy the permitted materials to a hard drive at the University of Iowa's WiderNet Project
- Make copies of the collection and distribute to subscriber universities
- Update and redistribute hard drives as time and travel schedules permit
## General Catalog Statistics

Click on the title to see details...

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Web Sites</td>
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</tr>
<tr>
<td>Partial Web Sites</td>
<td>497</td>
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<tr>
<td>Journals (Est.= 250+) Cataloged so far...</td>
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<tr>
<td>Books (Est.= 10,000+) Cataloged so far...</td>
<td>334</td>
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<td>56</td>
</tr>
<tr>
<td>Computer Software</td>
<td>61</td>
</tr>
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</table>

**Total File Count**: over 5 million
Differences between OAJDA and eGranary

- OAJDA only includes Open Access content
- OAJDA has one simple interface for all included content
- eGranary uses multiple native interfaces of included content
What Can Be Learned

- Recruit subject specialist to identify content
- Types of content (beside just journals, include educational Web sites and books)
- Distribution of data via hard drives
- Distribution of data via one-way satellite communications (satellite radio)
- Replacing Bandwidth with Storewidth can be successful
Citations

Thank you!

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