

Part 1

LINKING USERS TO VENDOR SYSTEMS

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7

Challenges setting up OPACs in LibX

LibX Edition Builder

Select Options			
<input checked="" type="checkbox"/>	Keyword	y	<input checked="" type="checkbox"/> (ctxMenu) Change
<input checked="" type="checkbox"/>	Title	t	<input checked="" type="checkbox"/> (ctxMenu) Change
<input checked="" type="checkbox"/>	Journal Title	jt	<input type="checkbox"/> (ctxMenu) Change
<input checked="" type="checkbox"/>	Author	a	<input checked="" type="checkbox"/> (ctxMenu) Change
<input checked="" type="checkbox"/>	Subject	d	<input type="checkbox"/> (ctxMenu) Change
<input checked="" type="checkbox"/>	ISBN/ISSN	i	<input checked="" type="checkbox"/> (ctxMenu) Change
<input checked="" type="checkbox"/>	Call Number	c	<input type="checkbox"/> (ctxMenu) Change
<input type="checkbox"/>	DB Title	dbname	<input type="checkbox"/> (ctxMenu) Change Delete

[Add an Option](#)

You can drag and drop options to change their order

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DTD for III Millennium Catalog Attributes

```
<!ELEMENT millennium (xisbn)?>
<!ATTLIST millennium
  name CDATA #REQUIRED
  url CDATA #REQUIRED
  sid CDATA #IMPLIED
  urlregexp CDATA #IMPLIED
  options CDATA #REQUIRED
  contextmenuoptions CDATA #IMPLIED
  searchscope CDATA #IMPLIED
  sort CDATA #IMPLIED
  keywordcode CDATA #IMPLIED
  advancedcode CDATA #IMPLIED
  journaltitlecode CDATA #IMPLIED
  searchform CDATA #IMPLIED
  language CDATA #IMPLIED
  image CDATA #IMPLIED
  downconvertisbn13 (true|false) 'true'
>
```

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Challenges setting up OPACs in LibX

- Figuring out settings for catalogs takes time – time that could be used for developing new features
 - Requires autodetection and fingerprinting
 - LibX Edition Builder attempts to help user with their configuration
 - Contacts OCLC Registries
 - OpenURL Resolver Registry (by IP address)
 - Worldcat Registry (by OCLC institution ID)
 - Contacts catalog servers directly
 - Heuristic guesses for server fingerprints, e.g., III returns **Server: III 100** in its response
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Challenges, cont.

- More JavaScript code from the ILS makes this even more difficult
 - Developers of tools that work with the ILS have to understand the code with usually limited or no documentation
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Non-Disclosure Agreements (NDA)

- Have a chilling affect on development
 - Restricts what libraries can do and more importantly share with others
 - Decreases motivation of library developers
 - If I can only develop for my library, then how can I benefit my professional community?
 - Open source developers cannot sign NDAs
 - Because they cannot reasonably maintain non-disclosure when code is open
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Standards can do better

- OpenURL syntax (NISO Z39.88)
 - An example of a request syntax
- Configuring an OpenURL resolver in LibX is easy
 - BaseURL + small set of parameters
- Benefits many
 - Links databases to OpenURL resolvers
 - Links resolvers to ILLIAD
 - Allows LibX/Zotero to mine pages with COInS

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13

Part 2

PROCESSING DATA FROM VENDOR SYSTEMS

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Emerging Services

- Widgets
 - Small pieces of HTML code copied into pages
 - Example: MAJAX 2 (Millennium AJAX)
 - Increases library's visibility
 - Enables library to fit into new web landscape
- Mash-Ups
 - Combining information from various online sources into new or existing web environments
 - Nicole Engard's new book "Library Mashups"
 - WorldCat Mashathon

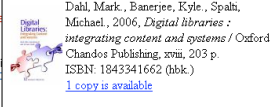
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15

Using MAJAX 2

```
<script type="text/javascript">
/* adjust these variables */
var majax2ServiceUrl = "http://libx.lib.vt.edu/service";
var majax2OpacBase = "http://yourcatalog/search";
</script>
<script type="text/javascript" src="majax2.js"></script>
<table width="340">
<tr>
<td><span class="majax-syndetics-vtech" title="1843341662">
</span>
</td>
<td><span class="majax-harvard-reference" title="1843341662">
</span>
<br /> ISBN:
<span class="majax-marc-020" title="1843341662">
</span>
<br />
<span class="majax-linkcatalog majax-showholdings" title="1843341662">
</span>
</td>
</tr>
</table>
</table>
```



Getting Information from the ILS

- We want to query the catalog and then use the results in other web pages
 - Basic information: record contents, holdings, availability (not too much to ask, really...)
- Can I write a simple program that tells me if a book is on the shelf?

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17

Current Options

- Most vendors provide no API or service at all
 - Requires work-arounds
- Example: Screen-scraping
 - Fragile
 - System-specific
- HTML-only output from OPAC is unsuitable

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18

Screen Scraping in MAJAX 2

LEADER 000000am 2200337 a 4500
 001 oom7026471
 003 00000
 005 22040014114213.0
 008 0406042006 enk 001 0 eng
 015 08A65792912nb
 016 7 013502941206
 020 184331442 (hbk.)
 020 184331557 (hbk.)
 040 URN:CTRN:BMQ:DBAEEK:DNTR1:DPFI
 049 VFI1
 050 # 2A4001b.D34 2006
 100 1 Dahl, Mark.
 245 10 Digital libraries :integrating content and systems /
 |editors Dahl, Kyle Banesjee and Michael Spalci.
 260 Oxford :IbChandos Publishing,lc2006.
 300 xviii, 233 p. :ill. 2 :28 cm.
 490 1 Chandos information professional series
 504 Includes bibliographical references and index.
 650 0 Digital libraries.
 700 1 Banesjee, Kyle.
 700 1 Spalci, Michael.
 830 0 Chandos information professional series.
 910 Im 09-14-2006
 994 C01NFI

Location (link to map)	Call Number	Status
Newman 5th Floor	Z4400 .D34 2006	AVAILABLE

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19

Emerging Options

- Some vendors have started to provide web service interfaces
 - Use XML and/or JSON
- Examples:
 - Evergreen/XML
 - Serials Solutions Link 360/XML
 - WorldCat API
 - And others (not to exclude anyone)
- That's good progress, enables cool services

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20

Some recent papers posted to CiteLike - all mixed together.

Direct Link To Full text (using Link/360 API)

Get VZxt: Connection in the Earth's core driven by lateral variations in the convection (1 month) *Journal of Geophysical Research*, vol. 110, no. 2, 2005, pp. 401-410. doi: 10.1029/2004JB005000

Get VZxt: Electric chaos for neural detection and classification of *Journal of Neurophysiology*, vol. 100, no. 6, 2004, pp. 337-346. doi: 10.1152/jn.00000.2004

Get VZxt: Relative sensitivity for potential and reliable of current *Journal of Neurophysiology*, vol. 100, no. 6, 2004, pp. 337-346. doi: 10.1152/jn.00000.2004

Get VZxt: WATER AND WASTEWATER QUALITY MONITORING, *Environmental Monitoring and Assessment*, vol. 132, no. 1-2, 2007, pp. 29-57. doi: 10.1007/s10661-007-9100-1

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Are Vendor Services Enough?

- No
- Community needs to agree on
 - What functionality should be offered by all vendors?
 - How should the functionality be offered?
- Need standards

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What about existing standards?

- Z39.50
 - Does not define holdings & availability
 - Requires special libraries or proxies
- SRU
 - Standard protocol to “search” and “retrieve”
 - Response format is an XML container
 - Separates container and the records in the container
 - Record formats are provider-dependent (intentionally left open by SRU standard)

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What about existing standards?

- NCIP (Z39.83) NISO Circulation Interchange Protocol
 - Protocol to get circulation information from a system
 - And much more!
 - Not widely adopted
 - See http://ncip.envisionware.com/ncip_ig/vendor_status.html

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24

First steps: ILS-DI Recommendation

- DLF Initiative
 - Working group (by Ockerbloom et al) produced document that lays out what functionality an ILS should provide for records and availability
- Great first step!
 - But doesn't yet address response syntax and semantics
 - An agreement on request and response formats needs to be reached for ILS-DI to have practical impact

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25

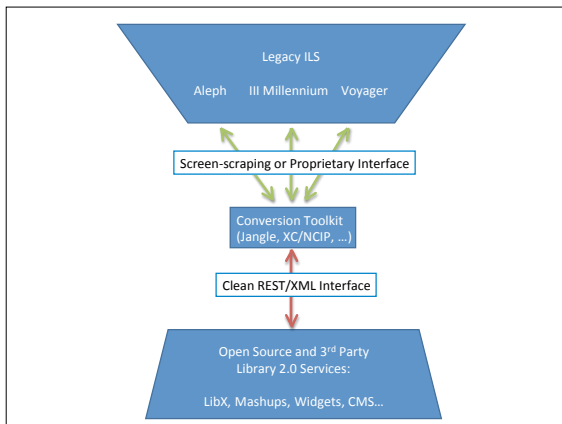
Conversion Toolkits

- Jangle – intermediary system
 - Presents uniform REST interface for library resources
 - Supports AtomPub, JSON
- eXtensible Catalog (XC)
 - OPAC design that enables sharing of metadata and associated code
 - NCIP toolkit that provides conversion for some ILS

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26



Minimum Requirements for a Standard

- Must define not just functionality, but also syntax; the "how" beyond the "what"
- Request syntax
- Response syntax
 - Container + Response Items
 - Not HTML
 - XML or JSON required
- Easily accessible from many environments
 - Should support HTTP transport/REST

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28

Part 3

ENHANCE EXISTING OPACS

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29

Using Open Source to Enhance the OPAC

- Tictoclooko
 - Enrich Journal contents,
- Implement
- Seamless in

Frequency	Weekly, except the last week in Dec., 1991-Weekly, --1990
Publication Date	v. 1- (no. 1-); Nov. 4, 1869-
Note	Some issues called also FASEB special issue. Vol. 409 (no. 6822) accompanied by CD-ROM entitled The Human Genome Project. Some issue accompanied by a poster. Supplements accompany some numbers; some supplements have also distinctive title.
Additional format	Also available online from Nature Publishing Group.
Indexes	Vols. 229-234 (1971), 1 v.; v. 235-240 (1972), 1 v.; v. 227-282 (1979), 1 v.; v. 283-288 (1980), 1 v.
Note	Vol. 229-246, Jan. 1971-Dec. 1973, issued in three parts. The two new parts, Nature: new biology, and Nature: physical sciences, continued the volume numbering of Nature in addition to carrying their own issue numbering. With vol. 246, Dec. 1973, Nature: new biology, and Nature: physical sciences, ceased publication and were absorbed by Nature.
	Has supplement: Nature. Directory of biologicals.
ISSN	0028-0836
tictoc	Click to subscribe to the Table of Contents for this journal.
Persistent Links	Persistent link to this record Add to del.icio.us

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30

Cool Catalog Enhancements

- Many more examples
 - SMS – III OPAC
 - Embedded chat in III OPAC
 - Juice – Talis
 - ...
- Standards for extending vendor OPACs with information from web services would allow for greater creativity and sharing

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31

A Proposal for a Rating System

Zero stars

Closed system: no documented interface beyond OPAC or backend client

★ One star

Documented deep-linking syntax for searches

Internal API

★★ Two stars

Outward-facing, read-only web service or API with documented request and response syntax for records, holdings, and availability

Documented extensibility interface for OPAC front-end

★★★ Three stars

Request and response syntax follows standards that extend beyond one vendor

Fully composable OPAC front-end

★★★★ Four stars

All ILS functionality is accessible read-write via standardized web services

Third-party front-ends can be used

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32