Unlocking Your ILS Data
Mobile access via handheld devices

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Where do we get our ILS data?
Integrated Library System

Our ILS data sits on a server, but to get at it we need an ILS client...
• Acquisitions
• Cataloging
• Circulation
• OPAC
• Reports
• etc.

SQL> DROP DATABASE xxxdb;

Woo-hoo!

This will fix things!

ILS data – the gate keepers

Where do we go to get the ILS data?
To a computer...
...on a desk
... and for non-OPAC data, (generally) in an office or behind a counter.

Working in the trenches stacks

But wouldn’t it be nice...
If we could access ILS data with a wireless-enabled hand-held device?

- Palm
- Windows Mobile
- iPhone and iPod Touch
- any smart phone

WiFi or cellular data networks
…not only for OPAC access…

Innovative Interface’s “AirPAC” catalog

…but also for staff

Stacks maintenance would be so much easier if I could look up stuff on a handset.

A vendor perspective


“At this time Innovative is releasing a wireless OPAC interface and developing wireless solutions for staff applications.”

“Offline circulation suggests itself [and...] Inventory of the physical collection is a second area of great interest in PDAs.”

“Innovative Interfaces is currently developing a wireless Inventory product which will use a PDA to read barcodes using Bluetooth and populate an HTML form on a Web browser on the device. This form will then submit the barcodes over a wireless connection to the library database server and will return a response to the device indicating item status, whether the item is out of shelf order, and giving the option to dynamically, and from within the stacks, update the item record itself.”
Vendor products for staff use

Innovative Interface’s “wireless solution for inventory and circulation functions”
- 2004 – originally released as Wireless Workstation
- 2008 – rebranded as Circa

SirsiDynix’s PocketCirc client “for circulation and inventory functions”
- 2004 – Unicorn ILS version
- 2009 – Horizon ILS version

Note: dates are approximate

Back to the future…

Waiting for Godot the vendor

How long must we wait for a handheld client for our ILS?
…or one that doesn’t cost us extra dough?
…or one that does what we want?
Waiting for Godot the vendor

- Vendors are smart and competent
  - Aware of the growing demand for mobile data access
  - Have an intimate knowledge of the ILS systems
  - Have crackerjack programmers

- So what's the hold up?
  - ILS product life cycle – saturation stage
  - No good pricing model for mobile clients

- Vendor/ILS programming paradigm:
  - One client/app that does everything
- Mobile device programming paradigm:
  - Many clients/apps that do one thing well

Back to the future...

...developing a wireless Inventory product which will use a PDA to read barcodes; and populate an HTML form on a Web browser...then submit the barcodes over a wireless connection to the library database server and will return a response to the device indicating item status...

ShelfLister 1.0 – released in 2003

Generates a shelf list
  - shelf list - a file of bibliographic records arranged in the same order as the corresponding materials on the shelves

- Additionally, includes any or all of:
  - Item status
  - Historical charges
  - Historical browse
  - Enhanced call number information

And allows user to save item information for batch updating ILS
Minimize data entry
Use as input file for bulk updating ILS

Paging Mr. Godot…

All this time, we’ve been waiting for the vendor to provide us with (and charge us extra for) handheld apps.

We could have been developing them ourselves.

But wait… we still can!
If *we* can do it, *you* can do it

If I just knew what button to push!

If we can do it, you can do it

All it requires is an “open” ILS system

They told me I didn’t *need* to know what was inside.

All it requires is an “open” ILS system

This presenter really knows how to flog a metaphor.

All I see is an empty box… where are the donuts?

Did I say “donuts”? I meant data.
…and the “Four Knowings”

- Know your ILS data
- Know the available APIs
- Know what you want to do
- Know how to (web) program

It’s really quite simple!

1) Know your ILS data

- Relational database system
  - data dictionary – “a list of all the tables in the database and all the fields in the tables”
  - entity-relationship diagrams – “a graphical representation of database entities and their relationships to each other”
  - mental model of data
  - BLOBs and other problems

The leg bone’s connected to the knee bone…

ShelfLister – 1st knowing

“Know your ILS data”

It’s all up here, baby!

It’s all up here, baby!
2) Know the available APIs

- Web services (XML, SOAP, RESTful, y.y.)
  - Aleph : “X-Services”
  - Voyager : Web Services
  - Your ILS : ???
- Library protocols
  - 3M SIP (Standard Interchange Protocol) 2.0
  - NCIP (NISO Circulation Interchange Protocol)
  - DLF’s ILS Discovery Interfaces recommendation
- Database connection
  - e.g. Oracle/MySQL/etc. listener

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APIs – getting around the gate keepers

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Which API should you use?

- What data can it **read**
  - database connection – everything!
  - web services, library protocols – eh, not so much
- What data can it **write**
  - database connection – (effectively) nothing
  - web services, library protocols – it depends
- Mix and match
- Response times/latency
ShelfLister – 2nd knowing

“Know the available APIs”

3) Know what you want to do

- Public access
  - Mobile OPAC?
  - ????????
- Staff access
  - Inventory tool?
  - ???????

- Be ambitious
- But not too ambitious (at least the first time)

ShelfLister – 3rd knowing

“Know what you want to do”
4) Know how to (web) program

- I.e. server-side, not client-side
  - Java
  - C/C++
  - Ruby
  - PHP
  - Perl
  - Lisp
  - bourne shell
  - whatever…

You must code in Perl. It’s the Law.

Just kidding! Use whatever you want!

ShelfLister – 4th knowing

“Know how to (web) program”

“Most of the folks I know in app development are moving to standardization on web versus device specific development.”

Linda Woods, AT&T Education Advocate
Industry & Mobility Application Solutions
comment at 2009 Handheld Librarian Online Conference

ShelfLister – 4th knowing

“Know how to (web) program”

Web programming… heh, that’s not a real iPhone app!
You can (and should) do this

If that imbecile Doran could do one...

How hard could it be?

Getting something to beta would only take me a couple weeks.

The Tao of mobile web design

A mobile web app should do one thing and do it well.

A mobile web app must be as simple as possible, but no simpler.

- standards compliance
- web usability design
- minimal user (data) input
- design and testing
  - cross-browser
  - cross-platform

Mobile design - browser compatibility
XHTML/HTML/CSS validation

- XHTML/HTML
- CSS
- Accessibility

Get right with these before you get to the platform compatibility.

iPhone web apps (according to Apple)

- Three types content:
  - compatible with Safari on iPhone
  - optimized for Safari on iPhone
  - iPhone web application

“Most of the folks I know in app development are moving to standardization on web versus device specific development.”

Linda Woods, AT&T Education Advocate
Industry & Mobility Application Solutions
comment at 2009 Handheld Librarian Online Conference

Mobile design – platform compatibility
Mobile design – platform compatibility

- Larger buttons for finger tapping

Handheld emulators/simulators

- Generally come with handheld OS SDKs
  - webOS (Palm)
    - http://developer.palm.com/
  - iPhone (Apple)
  - Android (Google & Open Handset Alliance)
    - http://developer.android.com/
- Web-based simulators (be leery)
  - Opera Mini Simulator – good
  - TestiPhone.com – absolutely worthless
Handheld emulators/simulators

Mobile design – platform compatibility

Test it on the real thing (handset), too!

Just need to…

Or, as a last resort…

Borrow from colleagues
Don’t forget the documentation!

- Mobile/handheld developer sites have useful information on how to “design for small”
- Read it
- Seriously. Read it.

Example docs and websites

- iPhone
  - Principles and Guidelines for Creating Great iPhone Content
  - iPhone Human Interface Guidelines for Web Applications
  - Safari Web Content Guide for iPhone OS
- Others
  - Opera Mini Developer resources
  - many more…

ShelfLister version 2.0 (for handhelds)
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Source code

http://rocky.uta.edu/doranV
Open systems – ILSs

Hello ILS vendor? I’d like to order an open system.

What does that mean? It means I want database access. And web services. Yeah, and an NCIP server.

Open systems – your mobile client

Consider releasing your mobile app as free open source. It’s better than free beer!

Ask permission first, though!

Asking permission

http://rocky.uta.edu/doran/ip/

Intellectual Property Disclosure

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Resources

Previews

The Intellectual Property Disclosure of Open Source Software

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