Next Generation User Interfaces*
- Delivering content and services to today's Web-savvy library users

by Marshall Breeding**

Abstract

Marshall Breeding, Director for Innovative Technology and Research at Vanderbilt University Library will talk about the trend toward the deployment of a new breed of library interfaces more familiar to today's Web-savvy library users.

Troubling statistic***

Where do you typically begin your search for information on a particular topic?

College Students Response:
- 89%   Search engines (Google 62%)
- 2%   Library Web Site (total respondents → 1%)
- 2%   Online Database
- 1%   E-mail
- 1%   Online News
- 1%   Online bookstores
- 0%   Instant Messaging / Online Chat
       Usage + / − from 2005 to 2007
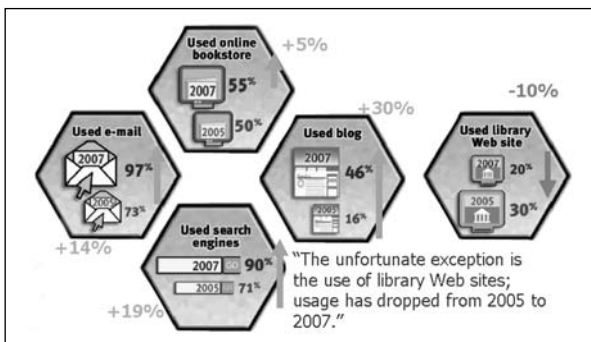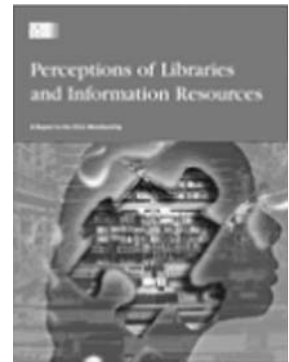
Source: Sharing, Privacy and Trust in our Networked World. OCLC 2007

Crowded Landscape of Information Providers on the Web

- Lots of non-library Web destinations deliver content to library patrons
  - Google Scholar
  - Amazon.com
  - Wikipedia
  - Ask.com
- Do Library Web sites and catalogs meet the information needs of our users?
- Do they attract their interest?
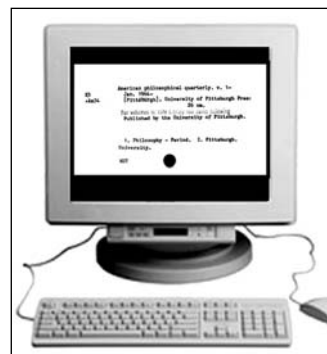
The Competition

- Library systems encountered a serious competition from the Internet world.
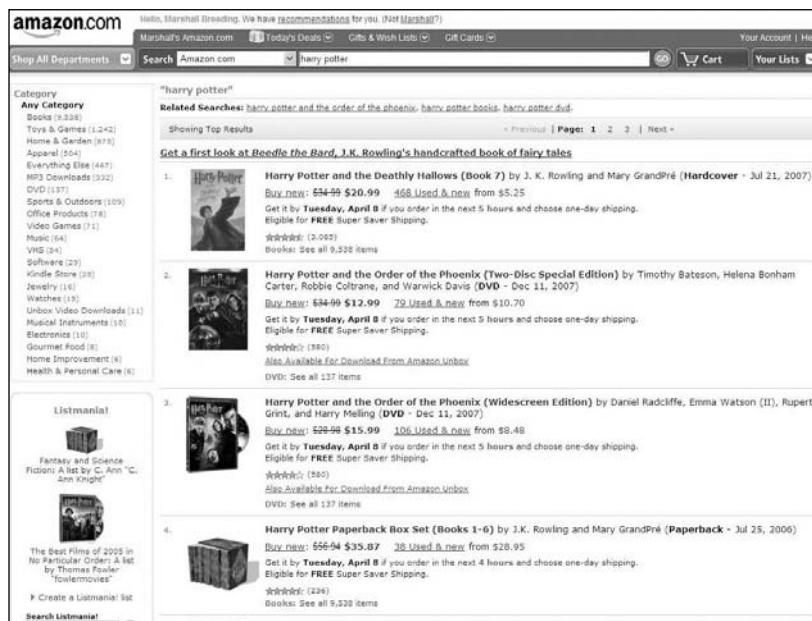
The best Library OPAC?

- The transformation for a card catalog to an electronic format is not what a patron wants to expect from library OPAC.
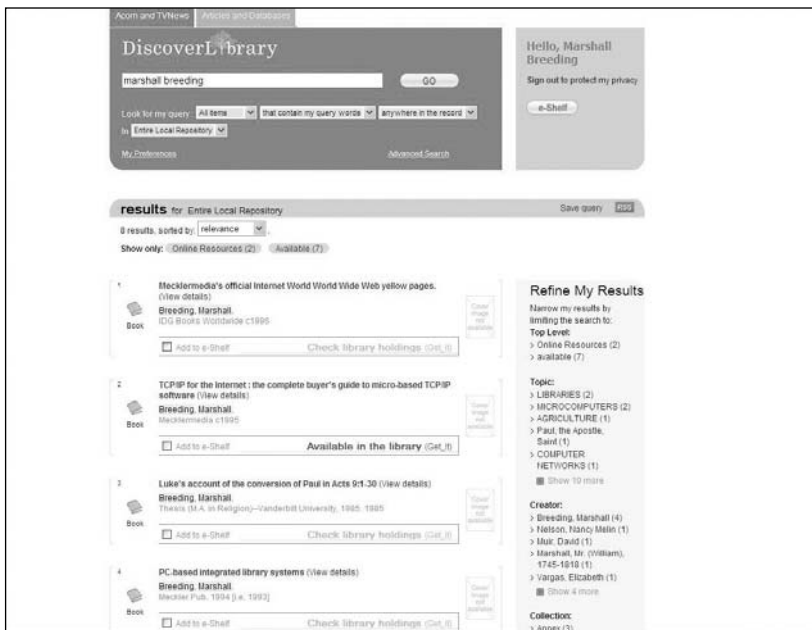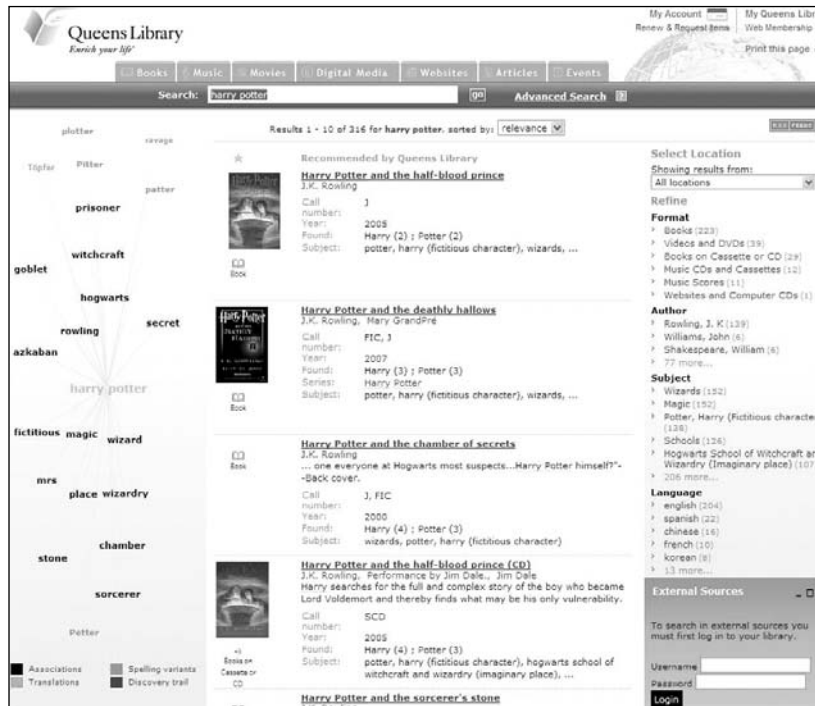
Typical ILS OPAC

• The most typical library OPAC interface in Korea. Is this really attractive to a parton?

Better Site 1 ?

Better Site 2 ?

Demand for compelling library interfaces

- Urgent need for libraries to offer interfaces their users will like to use
- Move into the current millennium
- Powerful search capabilities in tune with how the Web works today
- Meet user expectations set by other Web destination

Inadequacy of ILS OPACs

- Online Catalog modules provided with an ILS subject to broad criticism as failing to meet expectations of growing segments of library patrons.
- Not great at delivering electronic content
- Complex text-based interfaces
- Relatively weak keyword search engines
- Lack of good relevancy sorting
- Narrow scope of content

Disjointed approach to information and service delivery

- Books: Library OPAC (ILS module)
- Articles: Aggregated content products, e-journal collections
- OpenURL linking services

- E-journal finding aids (Often managed by link resolver)
- Local digital collections
  - ETDs, photos, rich media collections
- Metasearch engines
- All searched separately

Change underway

- Widespread dissatisfaction with most of the current OPACs. Many efforts toward next-generation catalogs and interfaces.
- Movement among libraries to break out of the current mold of library catalogs and offer new interfaces better suited to the expectations of library users.
- Decoupling of the front-end interface from the back-end library automation system.
- Eventual redesign of the ILS to be better suited for current library collections of digital and print content

Next-Generation Interfaces: Scope and Concepts

◙ Working toward a new generation of library interfaces

- Redefinition of the "library catalog"
- Traditional notions of the library catalog questioned
- Better information delivery tools
- More powerful search capabilities
- More elegant presentation

◙ Redefining the "catalog"

- More comprehensive information discovery environments
- It's no longer enough to provide a catalog limited to print resources
- Digital resources cannot be an afterthought
- Systems designed for e-content only are also problematic
- Forcing users to use different interfaces depending on type of content becoming less tenable
- Libraries working toward consolidated user environments that give equal footing to digital and print resources

◙ Comprehensive Search Service

- Current distributed query model of federated search model not adequate
- Expanded scope of search through harvested content
  - Consolidated search services based on metadata and data gathered in advance (like OAI-PMH)
- Problems of scale diminished
- Problems of cooperation persist
- Federated search currently operates as a plug-in component of next-gen interfaces.

◨ Web 2.0 Flavorings
- Strategic infrastructure + Web 2.0
- A more social and collaborative approach
- Web Tools and technology that foster collaboration
- Integrated blogs, wiki, tagging, social bookmarking, user rating, user reviews
- Avoid Web 2.0 information silos

◨ The Ideal Scope for Next Gen Library Interfaces
- Unified user experience
- A single point of entry into all the content and services offered by the library
- Print + Electronic
- Local + Remote
- Kocally created Content
- User contributed content?

Next Generation Interfaces: Functions and Features

◨ Interface Features / User Experience
- Simple point of entry
  - ptional advanced search
- Relevancy ranked results
- Facets for narrowing and navigation
- Query enhancement −spell check, etc
- Suggested related results
- Navigational bread crumbs
- Enriched visual and textual content
- Single Sign−on

◨ Relevancy Ranking
- Based on advanced search engines specifically designed for relevancy
  - ndeca, Lucene, etc
- Web users expect relevancy ordered results
  - The "good stuff" should be listed first
  - Ssers tend not to delve deep into a result list
  - Good relevancy requires a sophisticated approach, including objective matching criteria supplemented by popularity and relatedness factors.

◨ New Paradigm for search and navigation
- Let users drill down through the result set incrementally narrowing the field
- Faceted Browsing
  - Drill−down vs up−front Boolean or "Advanced Search"

- gives the users clues about the number of hits in each sub topic
- Ability to explore collections without a priori knowledge
- Visual search tools
- Navigational Bread crumbs
  - Select / deselect facets

◙ Query / Result Enhancement
- "Did you mean?" and other features to avoid "No results found"
- Validated Spell check
- Automatic inclusion of authorized and related terms
- More like this -recommendation service
- Make the query and the response to it better than the query provided

◙ Appropriate organizational structures
- LCSH vs FAST (Faceted Application of Subject Terminology)
- Full MARC vs Dublin Core or MODS
- Discipline-specific thesauri or ontologies
- "tags"

◙ Enriched content
- Rich visual information: book jacket images, rating scores, etc.
- Syndetic Solutions ICE ($$$$)
- Amazon Web Service (AWS)
  - Recent changes in term of use seem to preclude use by libraries
- Google Book Search API
  - Released March 13, 2008
  - Liberal terms of use
- No open content approach (yet)

◙ Personalization / Single Sign-on
- Customized content and service options based on personal preference and profile of user
- Persistent sign-on -horizontal and vertical
  - Seamless navigation in and out of appropriate sub-systems
    .ILL / ILS patron requests, federated search, proxy services
  - Credentials follow as user navigates among Web site components
  - ILS / Interlibrary Loan / proxy services / shopping cart / etc
  - Carry sign-on into and out of institutional resources
- Ability to select and save content; initiate requests; customize preferences, etc.

◙ Deep search
- Entering post-metadata search era

- Increasing opportunities to search the full contents
  - Google Library Print, Google Publisher, Open Content Alliance, Microsoft Live Book Search, etc.
  - High-quality metadata will improve search precision
- Commercial search providers already offer "search inside the book"
- No comprehensive full text search for books quite yet
- Not currently available through library search environments
- Deep searchhighly improved by high-quality metadata

  See: Systems Librarian, May 2008 "Beyond the current generation of next-generation interfaces: deeper search"

◉ Beyond Discovery
- Fulfillment oriented
- Search → select → view
- Delivery/Fulfillment much harder than discovery
- Back-end complexity should be as seamless as possible to the user
- Offer services for digital and print content

◉ Library-specific Features
- Appropriate relevance factors
  - Objective keyword ranking + Library weightings
  - Circulation frequency, OCLC holdings, scholarly content
- Results grouping (FRBR)
- Collection focused (vs sales-driven)

◉ Enterprise Integration
- Ability to deliver content and services through non-library applications
- Campus portal solutions
- Courseware
- Social networking environments
- Search portals / Feed aggregators

◉ Interoperability
- Decoupled interface implies data synchronization
- Mass export of catalog data
- Hooks back into the ILS for holdings and patron services
  - Real-time availability

◉ Architecture and Standards
- Need to have an standard approach for connecting new generation interfaces with ILS and other repositories
- Proprietary and ad hoc methods currently prevail

- Digital Library Federation
  - ILS-Discovery Interface Group
- Time to start thinking about a new generation of ILS better suited for current library collections and missions.

◙ Smart and Sophisticated
- Such more difficult than old gen OPACS
- Not a dumbed-down approach
- Wed library specific requirements and expectations with e-commerce technologies

◙ Next Gen Interface Deployments

Innovative Interfaces: Encore	2006	81
Ex Libris: Primo	2006	77
Medialab solutions: AquaBrowser	2002	128
Endeca	2004	5
VTLS Visualizer	2007	1

Source: Automation System Marketplace, Library Journal April 1, 2008

◙ Open Source opportunity?
- Dommercial traditionally licensed solutions currently far ahead of open source alternatives
- Time-to-market a critical factor
- Challenge to catch up

New-Gen Library Interfaces : Current Commercial and Open Source Products