

Next Generation Summit Search Interface Working Group General Recommendations

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Introduction

Over the past five years, the library community has seen a gradual erosion of its place within the information ecosystem. New content providers such as Google, Yahoo! and Amazon have started to encroach into spaces traditionally occupied by libraries. For the first time, libraries are no longer the proverbial big fish in the information pond and have been forced to co-exist and re-evaluate their place within the current environment. Library patrons have found new sources of information and have been introduced to tools that actively encourage or require user interaction. These tools encourage community building, plugging users into groups that share their interests or learning styles. Likewise, these new services have served to shine a spotlight on the library community and its information systems. Both the library community and its patrons have been able to see clearly how woefully unprepared our current integrated library systems are at present to participate in this new user environment.

The integrated library system presents an interesting dilemma. On one hand, the public catalog represents one of the library community’s greatest achievements. On the other, as we move forward with legacy systems developed primarily by proprietary vendors with little user feedback, the integrated library system is quickly becoming one of the library community’s’ greatest liabilities. Current integrated library system software and services are designed for a different time – primarily 5-10 years ago when few services mattered outside of the OPAC. But times have changed. Patrons, researchers – all are calling for a more usable catalog and greater access to the underlying metadata. These users struggle with our current-generation integrated library systems and the current model of a black box that

exists independently from other resources.

The Orbis Cascade Alliance's Summit catalog offers important services, particularly requesting. However, individual libraries and library consortia are increasingly aware that their catalogs could be better. In recent years, there has been much discussion of a "next generation" catalog, and now both commercial products and local development efforts have demonstrated many improvements. With this in mind, the Alliance Council directed the Summit Catalog Committee to investigate next generation interfaces. Subsequently the SCC formed the current working group. The group's charge reads, in part: "...this group will explore and evaluate various options for providing 'next generation' catalog functionality for Summit. 'Next generation' functionality could include such features as relevance based searching, faceted browsing, enriched records, spell-checking, and graphical depictions of collections. It will produce a written report that outlines various next-generation solutions compatible with Summit."

Next Generation Catalog: Definition and goals

The working group has identified five general goals for a new catalog.

1. *Improved searching*: better discovery through post-search filters (faceted searching), tag clouds and other visual search tools, improved displays, etc. Likewise, results that provide more relevant results. Recent ILL enhancements like RightResults, Innovative's new relevance ranking algorithm available with WebPac Pro, are a good first step in bringing better relevance to the ILS, but these enhancements are only a first step and must continue to be improved.
2. *Better user experience*: a more modern user experience ("Amazon-like"), with book jackets, reviews, tagging, etc.
3. *Same requesting functionality*: the same as current abilities to request and borrow materials. In other words, a new catalog cannot be a step back in this area.
4. *Syndication*: a platform that supports pushing Summit data to Internet search engines, desktop software, course management software, and other end-user applications, in order to integrate Summit data into the applications where users naturally work.
5. *Developer friendly*: a platform that supports and encourages interaction with the system. This can take many shapes, including OAI harvesting, SRU, OpenSearch or a simple web-services-based API to allow the Alliance to take a more proactive role in developing services.

How do we define "next generation"?

The working group has considered what it means to create a "next generation catalog" within the context of the current Summit interface and the current definition of "next generation" as understood within the library community. However, maybe this isn't the right question. In part, library systems have failed to even keep up with our current generation of users, with neither the library community or vendor community really understanding how a current generation catalog might function. We have ideas from looking at vendor sites and social software tools that provide tagging, faceted browsing, and user reviews, but are these really "next generation"? No, they represent current generation functionality that library systems simply have yet to assimilate into their current service offerings. It's a dangerous confusion of vocabulary. While these services represent "next generation" services for the library community, they don't for our users. If a simple makeover of the ILS is to be our aim, then we will continue to fail to provide services for our current generation of users. Our current library information systems are failing our users and inhibiting our users' attempts to build communities around our services and systems.

Libraries should rectify this problem by seeking to build systems that meet the needs of this current generation, while allowing the library community to plan for and implement functionality that will be necessary within the "next generation". In part, this is what some libraries are doing -- some examples are discussed in this report. North Carolina State University's utilization of Endeca has been lauded far and wide, but in essence, they've simply started to catch up with today's current generation of users. Yet in just catching up to the current generation, they have distinguished themselves from the rest of the library community. They have placed themselves in a position to look beyond the needs of the current generation of users and focus on the services and needs of the next. At this point, few organizations, including the Alliance, can make such a claim. That, in part, is the challenge facing the Alliance

and this working group as it made its assessments.

For this report, our group looked specifically at the Summit catalog and the function that the Summit catalog currently serves, though that in and of itself may be an issue for further consideration. Should the ILS remain the principle search platform for the Alliance when so many of its members are currently endeavoring to create institutional repositories and image repositories? Likewise, the Alliance's own expanding interests, as illustrated through the acquisition of the NWDA's EAD finding tool, seem to suggest that the Alliance is beginning to look beyond the ILS to the many rich content documents currently being created within the Alliance. Very quickly, the ILS system is becoming just **one** of many Alliance resources that will need to be queried and presented to the user in the future. While this question was beyond the original charge of this working group, the Alliance would do well to consider how these present and future resources fit into the future of the Alliance and the resources that the Alliance provides to its patrons.

The rest of this report describes five broad options for the Alliance with regard to a new catalog: Encore co-development, commercial software, open-source software, local development, and WorldCat Local.

Current Next Generation Options

Option: Encore Co-Development

Summary:

The architecture of an INN-Reach system presents unique challenges for anyone wishing to implement a next-generation interface. By its nature, the INN-Reach system provides a high level of interaction as a union catalog representing the shared holdings of consortium members. This presents two levels of difficulty. First, current data is vitally important to the consortium. Since materials are spread throughout the 33 member institutions, data provided by our chosen interface must be current, with real-time availability information. Second, Summit is a "black box" with access limited to the tools provided by the vendor. In the case of Summit, this means that it can be queried in real-time only via Z39.50 or through the WebPAC, limiting the ability to build tools that work with the system. As a result, some of the currently-available vendor systems will be difficult to implement, given the unique nature of INN-Reach. In addition, Innovative has shown little enthusiasm for enabling users to utilize third-party tools or extensions, so implementing a third-party search platform like Endeca might meet a fair level of resistance from Innovative.

For their part, Innovative has begun developing Encore, which it is calling a "next generation" OPAC. Encore, scheduled to be released for local catalogs in summer 2007, is an Innovative product that operates on top of the online catalog, providing relevance ranking, faceted browsing, user tagging, and "best bet" suggested resources. However, unlike other third-party systems, Encore does not require a separate data export or re-indexing process. Rather, Innovative utilizes its now defunct XML Server to communicate with the catalog server.

Currently, ILL has no timetable for releasing Encore to the INN-Reach community, in part because Innovative is just beginning to consider developing Encore for INN-Reach. Innovative's current INN-Reach development will be undertaken with the Tri-College Consortium as their initial development partner. Were the Alliance to pursue this option, it would likely want to become an Encore development partner with Innovative to sponsor support for features currently being left out of the initial release (like RSS, course reserves, web services access) for the INN-Reach system.

Examples

- Individual library: none
- Consortium: none

Evaluation

Given that Encore remains in development, it is difficult to assess how successful it will be at meeting the goals of the consortium. At present, ILL is planning to support many of the features generally agreed upon within the library community as "next generation". Encore will provide improved searching through its use of ILL's RightResults keyword search algorithm, along with a more friendly user environment which includes

faceted browsing, tagging, and integration with additional products (that must be purchased separately) such as book jacket images, WebBridge linking, and federated searching. Since Encore sits on top of the Innovative integrated library system, request functionality is handled outside of Encore, by clicking through to the underlying ILS (in this case, Summit). Encore can be used to syndicate content in conjunction with III's Feed Builder product, a separate purchase. At present, III has offered no information regarding support for web services interaction with Encore or the ability to query the XML Server directly as part of the Encore software, though they have indicated that such functionality may be a part of a future release. The committee strongly recommends that if Summit participates with III as a development partner, we require access to web services and the underlying XML Server as a condition of the development partnership. Without the ability to access these underlying protocols, the Alliance will remain unable to innovate independently of III.

Costs

Cost factors include the price of the product and time to devote to the development partnership. Although the Alliance may receive a discount as a development partner, this cannot be assumed. The Encore product consists of the following elements:

- Encore product (which includes a number of components bundled as part of the Encore System)
- Separate server, which would be managed by III but housed by the Alliance.

Likewise, co-development would likely require a significant investment in staff time. This time would likely be shouldered by Summit staff, but some work would likely be distributed throughout the Summit community.

Summary

Of all the solutions currently examined, working with III on Encore would likely be the easiest way for the Alliance to implement a next-generation interface. However, the Alliance should be very careful when considering this option. While it would likely result in a better upfront integration of III's INN-Reach system, the committee has deep reservations about III's past and current business model. III remains the only major ILS vendor that does not provide a set of API or XML services as part of its default installation. By not providing these protocols, III has in effect stunted the ability of its members to innovate outside of the company's vision. In effect, III's business model is setting up a digital divide within its own user community, as organizations with available funding have been able to purchase more robust access to their metadata (like AADL) while other institutions unable or unwilling to purchase API support find their organization handicapped in their ability to innovate outside of III. Should the Alliance choose to work with III on Encore, it is the strong recommendation of this committee that this partnership be undertaken only if web services or API access to Encore and the underlying XML Server components are part of the required deliverables. Anything less would continue to tie the Alliance's future to III's ability to innovate and meet the unique needs of the consortium's patrons.

Option: Commercial software not provided by Innovative Interfaces

Thanks to the forward-thinking individuals at North Carolina State University, academic libraries are now considering vendor software developed outside the traditional ILS vendor community. At present, a number of inventory management systems are looking toward the library community and starting to reshape our perceptions of the role of our library's OPACs can play within our users communities. Like Encore, these commercial options would work on top of our current Summit database. However, unlike Encore, indexing and display would be done outside of the III system, meaning that data would need to be consistently exported and re-indexed into the system on a nightly basis. Several products are currently available, and the working group investigated a number of them to determine how well they fit the goals outlined above and how they work with the current INN-Reach environment. The products include Grokker, AquaBrowser, and Endeca.

Grokker

Summary

In many respects, Grokker, developed and sold by Groxis, Inc., is likely outside the scope of options that the

Alliance will consider. This is primarily due to the fact that Grokker is a federated search system. Unlike all other options that provide indexing and display, Grokker relies on the underlying system that it queries to provide the most relevant results and then displays results using a set of common contextual items found within all record sets. With that said, Grokker could be used on top of Summit to provide a graphical search of the catalog. However, this search would just be a graphical representation of the data that a normal Summit search provides. Since Grokker does not do outside indexing, a very important part of the "next generation" puzzle is lost.

As a federated search tool, Grokker provides additional functionality on top of existing indexes by placing results within contextual buckets. Content can be pulled from public (Internet), private (local index), and proprietary (i.e., EBSCO) sources. It features clustering of search results (e.g. concept maps, outlines or tag clouds), filters for post-search filtering, and a "working list" (shopping cart). Grokker primarily uses an XML API to gather search results from the catalog or other databases, but it can support protocols common to the library community like Z39.50. There are limits on the size of results sets that can be clustered in the visual (concept maps) display due to performance issues.

Examples

- *Individual library:*
 - Stanford University Libraries - co-developing a web-based application with Groxis. Estimated release is Spring 2007.
 - Binghamton University Libraries <http://alephprod.binghamton.edu:8991/F/> (requires logon id)
 - EBSCOHost Virtual Search
- *Consortium:* none
- *Company site:* <http://www.grokker.com/>

Costs

Groxis would have to know more to provide a precise quotation, but a rough estimate for a consortium could be in the low \$100,000s. The technology itself licenses for \$30k (one server). If they host it or if we deploy it on a server at our site, there is an additional cost per server for fine-tuning performance.

Variables to consider:

- deployment method (either Grokker hosts as they are doing for Stanford - or consortium hosts)
- number of servers
- number of users
- number of content sources (e.g., WorldCat, EBSCO, or Summit index would each count as one source/index). Note that not all database products can work with a federated search system.

AquaBrowser

Summary

Unlike Grokker, AquaBrowser is an indexing engine that resides outside the catalog and has a configurable user interface. Features include tag maps and a number of facets for filtering search results. Like Grokker, AquaBrowser provides users with a graphical representation of search results, which are displayed contextually by topic or location. Like Encore and other tools that sit on top of the ILS, AquaBrowser only provides a search and retrieval system. Functions such as record display, shelf status, and requesting are handled by the underlying ILS but presented in the Aquabrowser interface. However, because AquaBrowser does perform its own indexing, the entire catalog's data must be exported into the AquaBrowser software, which likely means that bibliographic data used by AquaBrowser will be up to 24 hours out of date, assuming export is done nightly.

Also of note, AquaBrowser can be configured to accept non-MARC data, so it has the ability to support federated searching. This could have important implications should the Summit group consider adding federated search functionality to the Summit catalog.

Examples

- *Individual library:* King County Public Library <http://explorer.kcls.org/>
- *Consortium:* Toledo-Lucas County Public Library <http://aquabrowser.toledolibrary.org/aquabrowser/>

- *Company site:* <http://www.medialab.nl/>

Costs

Real costs of the AquaBrowser software are currently unknown, in part because more information would be required for the company to provide an accurate quote. Moreover, since Summit would be the first Inn-Reach system that AquaBrowser would work with, it is likely that partnering with this vendor would require substantial staff time from both the Alliance and member libraries.

Endeca ProFind

Summary

ProFind is a suite of search software from Endeca, Inc., that is used on a number of large commercial web sites. It was not designed for libraries, but it has been implemented successfully in several libraries, most notably North Carolina State University. The Endeca software is independent of both the database(s) it indexes and the user interface. It provides faceted browsing, configurable relevance ranking and spelling correction. It supports tag clouds, although no library has yet implemented them in a public version. Endeca is able to index data from multiple sources and can be used for federated searching.

Examples

- *Individual library:* North Carolina State University, <http://www.lib.ncsu.edu/catalog/>
- *Consortium:* State University Libraries of Florida, <http://catalog.fcla.edu>
Includes 20 campuses. They are deduping holdings so a single record serves all institutions. Each institution's catalog will be generated from the union catalog.
- *Company site:* <http://endeca.com/>

Evaluation

Endeca supports many features of a next generation catalog, chiefly through improved searching. The interface is independent of the indexing engine, so it provides the most flexibility for designing an improved user experience. It is more commonly used by academic libraries than Aquabrowser, so that at the first pass, it appears to be the most powerful and best suited to the Alliance's purposes.

The question of how commercial products support existing requesting functionality needs to be examined in more detail. Endeca, for example, would allow us to open a frame in the catalog display with Summit requesting functionality. Aquabrowser staff also indicated that it would be possible to allow patron-initiated requesting with the Aquabrowser interface. The working group did not fully determine whether the same was possible Grokker.

Costs

Cost factors include the purchase or license fee for the commercial software, possible purchase of servers, staff time to implement the system, and staff time to maintain it. The cost that is most difficult to quantify is staff time. Depending on the level of customization and involvement by the organization, this could range from minimal to significant. Andrew Pace at NCSU states that there is currently one full-time developer and one half time manager/developer devoted to their Endeca implementation. Should the consortium choose Endeca, it is very likely that we will need to consider hiring a staff developer to manage the Endeca software.

Summary

Unlike years past, there are a number of viable alternatives to the traditional solutions offered ILS vendors. However, in each case, a number of challenges would need to be considered and overcome. First, none of these supports the goal of syndication. While solutions like Endeca could provide the ability for the consortia to develop our own syndication modules, currently there is no vendor solution that includes syndication as a part of the default application. Secondly, a major obstacle to the use of both AquaBrowser and Endeca is that they require daily export of bibliographic and holdings data from INN-Reach. Exporting this data is difficult, if not impossible, because

Innovative does not provide tools to export additions, changes, or deletions. Before these commercial products can be seriously considered, export capabilities in INN-Reach must be substantially upgraded.

Option: Open Source Development

Unlike years past, several open source solutions are also available for improving library search interfaces. The working group evaluated two of these: WPopac and SOPAC. These two solutions are interesting in that they both were developed at III sites, so the process utilized in each of these projects should be reproducible within the Summit system. Software packages that were evaluated but not included in this report include the two major open source ILS products, Evergreen and Koha. Both of the projects and products (since commercial support can be purchased for each) are really outside the scope of this report since it would require the migration of Summit away from the Innovative platform and likely, the migration of all member institutions from the Innovative platform. While the Alliance may, and likely should, periodically consider if the Innovative platform is meeting its ILS needs, this group did not seek to answer that question. As a result, this project focused on open source solutions that could be used in conjunction with our current Innovative system.

WPOPAC

Summary

WPopac is a testbed project from Plymouth State University. WPopac was developed by Casey Bisson, who has created a testbed for researching different methods of querying and displaying library data. While the project has not been created specifically as a replacement for current OPAC systems (Plymouth State, for example, has yet to replace their III OPAC with WPopac), it could be used as a template for implementation. WPOPAC is in essence a customized version of WordPress, an open source package developed for hosting blogs. The software has been augmented to take advantage of some of the unique features available in a library's MARC data, while utilizing III's XML Server product to extract real-time holdings information. Bisson commented that WordPress was chosen for several reasons:

- It is a flexible platform with many developers
- It is easy to customize and develop plugins for
- As blogging software, it has been built around the concept of social software and communities.

By allowing WordPress to do much of the heavy lifting, the developer is able to focus on addressing issues relating to libraries.

Examples

- Public Demo: <http://www.plymouth.edu/library/opac/>
- Project Website: <http://wpopac.blogs.plymouth.edu/>

Evaluation

As a practical matter, WPopac would likely not meet the Alliance's immediate needs. However, it is an interesting testbed and could be used internally to test different design elements desired for production release. Like the commercial software surveyed above, WPopac requires users to export data from the ILS for indexing within the WPopac software.

Costs

The software is free. However, as with any open source or locally developed solution, the cost would primarily consist of staff and development time.

SOPAC

Summary

SOPAC provides the public catalog interface for Ann Arbor District Library (www.aadl.org), which runs the Innovative ILS. SOPAC is run through Drupal, an open source content management system. SOPAC does not index data outside of the Innovative system. Rather, Drupal acts as a proxy agent, querying III's OPAC and then reformatting the returned data. SOPAC includes all the features included in this working group's charge, such as tagging, commenting, RSS, etc.

Examples

- Public Demo: <http://www.aadl.org/catalog>
- Project Website: http://www.blyberg.net/downloads/SOPAC_1.0.tar.gz

Evaluation

Based on discussions with John Blyberg, lead developer for SOPAC, it seems that AADL's SOPAC implementation would likely be challenging to recreate for Summit, primarily because it relies on Innovative's XML Server product, which is no longer available.

Costs

The software is free. However, as with any open source or locally developed solution, the cost would primarily consist of staff and development time.

Summary

At this point, no out-of-the-box open source package is available that could fit the Alliance's specific needs, but the same is true of commercial solutions. The difference is that both of the projects above make use of III's XML Server, which is no longer available for local or INN-Reach systems. The lack of this functionality does indeed pose a problem for any open source work (or vended solution) since it limits our ability to pull real-time holdings data into the interface.

Option: InnReach Local Development

Summary

This option recognizes that the Alliance is made up of a number of talented individuals, making a locally developed solution a viable option. Within the library development community, a number of individuals have started experimenting with different ways of building many of the next generation features desired by the Alliance. In many cases, these projects can be created quickly, with very little programming skill or dependencies. Local development would allow the Alliance maximum flexibility in terms of interfaces and features without tying the Alliance to a particular vendor product.

Examples

- OSU's library catalog: <http://grok.library.oregonstate.edu/solr/> (available on March 12th, 2007)

Evaluation

While many on the committee see potential issues relating to time and staff needed to shift OPAC development to the Alliance in the short-term, long-term the benefits offered seem to be fairly substantial. The Alliance would potentially have the ability to better meet its patrons' needs by having direct responsibility for its users' experience.

Costs

Moving to a locally developed solution would require time, money, but most importantly, support from the member institutions. For a locally developed solution to be successful, the Alliance would need a strong leader providing vision to the coding group, as well as a pool of developers, presumably from member institutions, to provide the actual development.

Summary

Not surprisingly, our committee chair, Terry Reese, favors moving much of the development to the local level. Local development would give the Alliance its best chance of staying nimble and ahead of our patrons. For such a solution to be successful, R&D within the Alliance would need to become a mainstream operation with a leader found within the Alliance. Fortunately, a locally developed solution also carries the least amount of risk. If local development proved to be a failure, the Alliance would simply be where it is today, with losses measured in terms of staff time, rather than financial resources. The two samples provided, for example, were done using open source tools and approximately three hours of development time by one individual (Terry Reese), providing a demo that mimics the current Encore functionality (which has taken countless development hours and research from III and still remains unfinished). The demos illustrate how quickly solutions can be developed when leveraging already existing open source tools and projects. With that said, the difficulty extracting and updating data from the INNReach system could be a long-term issue given the limited access to metadata provided by the INNReach catalog.

Option: WorldCat Local

Summary

WorldCat Local is a branded view of WorldCat.org as a discovery and delivery interface for a library or consortium. It features faceted browsing, cover art, and a multilingual interface, as well as a customized relevancy ranking so that Summit holdings float to the top of search results, and all other WorldCat holdings are also visible. In the spring, article-level metadata for ArticleFirst, GPO, ERIC and Medline will be added. Additional functionality to be added includes social networking, citation formatting, and integration with bibliographic management tools. WorldCat Local will interoperate with local systems for requesting and refer unfulfilled requests to OCLC ILL. It also will serve as a platform for syndicating library records to Internet search engines and other services.

Examples

- WorldCat.org 1.0: <http://www.worldcat.org/> (the platform on which Local will be built)
- Individual library: none
- Consortium: none

Evaluation

WorldCat Local has many features of a next generation catalog in improved searching and a better user environment, and it is the only option to support syndication. Requesting functionality with Innovative is under development. Thus, WorldCat Local is the one option that, at least on paper, meets all of the working group's goals. The obvious drawback at the time of writing is that no examples are available for inspection.

Costs

Costs include whatever pricing OCLC establishes for the product. Additionally, a FirstSearch subscription is required for each library, so that subscriptions may need to be purchased for some institutions. Alliance libraries would need to "synchronize" their catalogs with WorldCat by loading local records into WorldCat, which requires staff effort and may result in changes in processing and cataloging workflows in order to make sure that all titles are in OCLC. Additionally, Alliance libraries may wish to use the upcoming capability to load "institutional records" (local copies) into OCLC, for which pricing has not yet been determined. Institutional records allow display of local notes, additional subject headings or changes made to cataloging records that are not in the master record.

Summary

As of this writing, insufficient information is available about WorldCat Local to make a firm judgment about its suitability as a catalog for the Alliance. However, it has a very attractive feature set and deserves further investigation.

Recommendations

As research and investigation progressed over the past 4 months, it became clear that the working group could not offer a definitive recommendation to the Alliance regarding a vended or locally developed next generation catalog. In part, this is due to the nebulous nature of the market, which is still emerging, and a need for the Alliance's Executive Committee to define what level of support will be provided for such a solution. Vended solutions like Endeca are attractive options, in part because they are currently mature. They are developed applications that have a track record of working with large academic institutions, but they would likely be the most costly of all options present. Likewise, OCLC's current OPAC replacement developments are interesting and worth further consideration as libraries look to spread their resources into other information spaces. Given OCLC's largeness, its move to a WorldCat Local product could potentially drive more users and allow resource discovery to happen in many contexts not currently available to the Alliance. Innovative's Encore product also could be attractive. The Alliance has traditionally had a very good working relationship with Innovative and a partnership developing Encore could result in some very beneficial short and possibly long-term gains. And finally, the Alliance should not dismiss the idea of creating its own locally developed solution. There is within the library community a large and growing open source community, which includes many Alliance members. These groups have demonstrated that the local or community development of solutions can be as or more cost effective than vendor solutions and have a greater impact on their user communities.

Given the changing nature of the ILS market, it is this group's recommendation that the Alliance continue to explore this issue. As OCLC's development and III's development continue, coupled with the Alliance's recruitment of a new Digital Services Program Manager, the Alliance should be in a good position to make a decision regarding the future direction of Summit during the late summer of 2007. It is our hope that the Alliance continue to place a high priority on this endeavor. As a result, the group suggests that Alliance Council specify that a next-generation interface be purchased or developed by summer 2008.

Additionally, in researching current and in-development solutions, it became clear that if the Alliance is to continue to meet the needs of its users, it will have to demand greater access to the metadata (holdings, items, bibliographic) found within the catalog. Regardless of who provides the Alliance's next generation OPAC product, one of the deliverables that must be available as part of any solution is API or web services access to the catalog. Access at this level is important for two reasons:

1. It allows libraries to integrate and share development resources:
The Alliance members are currently hamstrung by the closed nature of the Summit catalog. The Summit INN-Reach catalog currently only provides two methods of interaction – Z39.50 and HTML access. For developers looking to build services around the Summit catalog, the Z39.50 protocol, as implemented, is currently too limiting and expensive for production development services. All major ILS vendors but III provide their customers a web services or HTTP REST API access to their systems, allowing for continued development around the catalog. Lacking such access, the Summit catalog will continue to be marginalized within the consortium's academic campuses as tools and services are developed that take advantage of web service friendly applications.
2. Allows for the development of library-created or user-created mashups:
The Alliance should strive to create a resource that encourages users, libraries, and campuses to develop services around the Summit catalog. The library community has recognized that our patrons want social

tools, which we tend to identify as tagging, commenting, etc. However, Web 2.0 applications like Flickr are popular because of the API access that they provide to their users as well. This access has enabled other web services, individuals, and organizations to develop different methods for exporting and utilizing the images placed within the Flickr photo archive. The Alliance should strive to make the Summit catalog open in this way, so that users and members alike are free to enhance Summit to meet individual, campus, or consortial needs.

Finally, it should be noted that the creation of a “next generation” interface will be an iterative process. As mentioned earlier in this report, libraries are behind and working to catch up. If we are to catch up and continue to grow as an organization, the Alliance needs to support the creation of an Alliance R&D committee. In many ways, research and development activities have become as vital as the services performed by the cataloging or systems committees, and as libraries transition their online presence to a service oriented model, the need for a structured R&D group will become more apparent. This committee could be led by the new Digital Services Program Manager and would function as a place for the Alliance to start providing its own locally developed services to the consortium. This group would serve as a place for technical innovation within the consortium, as well as place for members to submit service enhancements to the consortium.

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