

**TO:** ALA Executive Board

**RE:** ALA Strategic Technology Directions Update: 2016-2017

**ACTION REQUESTED/INFORMATION/REPORT:** Discussion

**ACTION REQUESTED BY:**

Sherri Vanyek, Director, Information Technology and Telecommunication Services (ITTS)

Ron Block, Chair of the Website Advisory Committee

**CONTACT PERSON:** Sherri Vanyek, 312-735-2597, svanyek@ala.org

**DRAFT OF MOTION:** None

**DATE:** 12/14/2015

**BACKGROUND:** The initiatives addressed in this document reflect the current areas of focus. While there are many additional services ITTS is responsible for that also have an impact on ALA's ability to meet members and staff needs (including maintenance and daily operations), this document specifically covers the following significant areas of focus:

1. Web Presence
2. iMIS Association Management System
3. Ecommerce System for Dues, Donations, and eLearning
4. ALA Connect
5. Conference Management
6. Financial Management System
7. Telephone System
8. Member Resources
9. Technology Resources for Staff
10. Library Catalog
11. Awards & Grants Database
12. Institutional Repository (ALAIR)
13. Network Infrastructure
14. Desktop & Server Infrastructure
15. Network Security
16. Disaster Recovery
17. ITTS Budget
18. ITTS Organizational Structure
19. Risk Assessment
20. Recommendations for Accelerating ALA's Capacity

**ATTACHMENTS:**

ALA Strategic Technology Directions Update 2016-2017

# ALA STRATEGIC TECHNOLOGY DIRECTIONS UPDATE: 2016-2017

Prepared by ALA ITTS staff, December 1, 2015

## 1. Introduction

ALA's vision for technology for FY2016 and beyond will:

- enable members to: easily find current and historical ALA information, participate in learning activities and communities, participate in group work outside of face-to-face meetings, purchase goods and services in a convenient way, customize his/her interface with ALA, and help shape Association directions through virtual discussions, polling, balloting, and other virtual methods.
- allow the public to find basic information about ALA and libraries, access information about libraries and advocacy, join ALA, and purchase goods and services in a convenient way.
- provide demographic and other information about members for ALA and its units to use for data-driven decision-making and personalized marketing.
- implement privacy protections, security mechanisms, and business continuity provisions (disaster preparedness and response) for all aspects of ALA's member and operational data and technologies.
- improve technology resources used to make ALA staff more efficient with better collaboration and remote access to new and existing resources.

The initiatives addressed in this document reflect the current areas of focus. While there are many additional services ITTS is responsible for that also have an impact on ALA's ability to meet members and staff needs (including maintenance and daily operations), this document specifically covers the following significant areas of focus:

21. Web Presence
22. iMIS Association Management System
23. Ecommerce System for Dues, Donations, and eLearning
24. ALA Connect
25. Conference Management
26. Financial Management System
27. Telephone System
28. Member Resources
29. Technology Resources for Staff
30. Library Catalog
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38. ITTS Organizational Structure
39. Risk Assessment
40. Recommendations for Accelerating ALA's Capacity

In the iterative cycle of discovery, implementation, and ongoing assessment, ALA ITTS is addressing the following realities, which will remain as challenges for the foreseeable future, regardless of whether IT work is done by staff or is outsourced.

- ALA's heavily-layered organizational structure, which requires modification of standard systems and results in additional costs, extended implementation timelines, and increased maintenance requirements.
- Excess complexity of Association practices and lack of standardization, which must often be addressed and modified as part of every IT implementation process.
- The challenge of coordination across the Association to take advantage of creative work and minimize duplication of or conflicts between projects.
- Budget managers' widely varying capacity to identify IT implications of new projects or scope changes as part of routine project definition and budgeting practices.

## ALA Technology Services Diagram

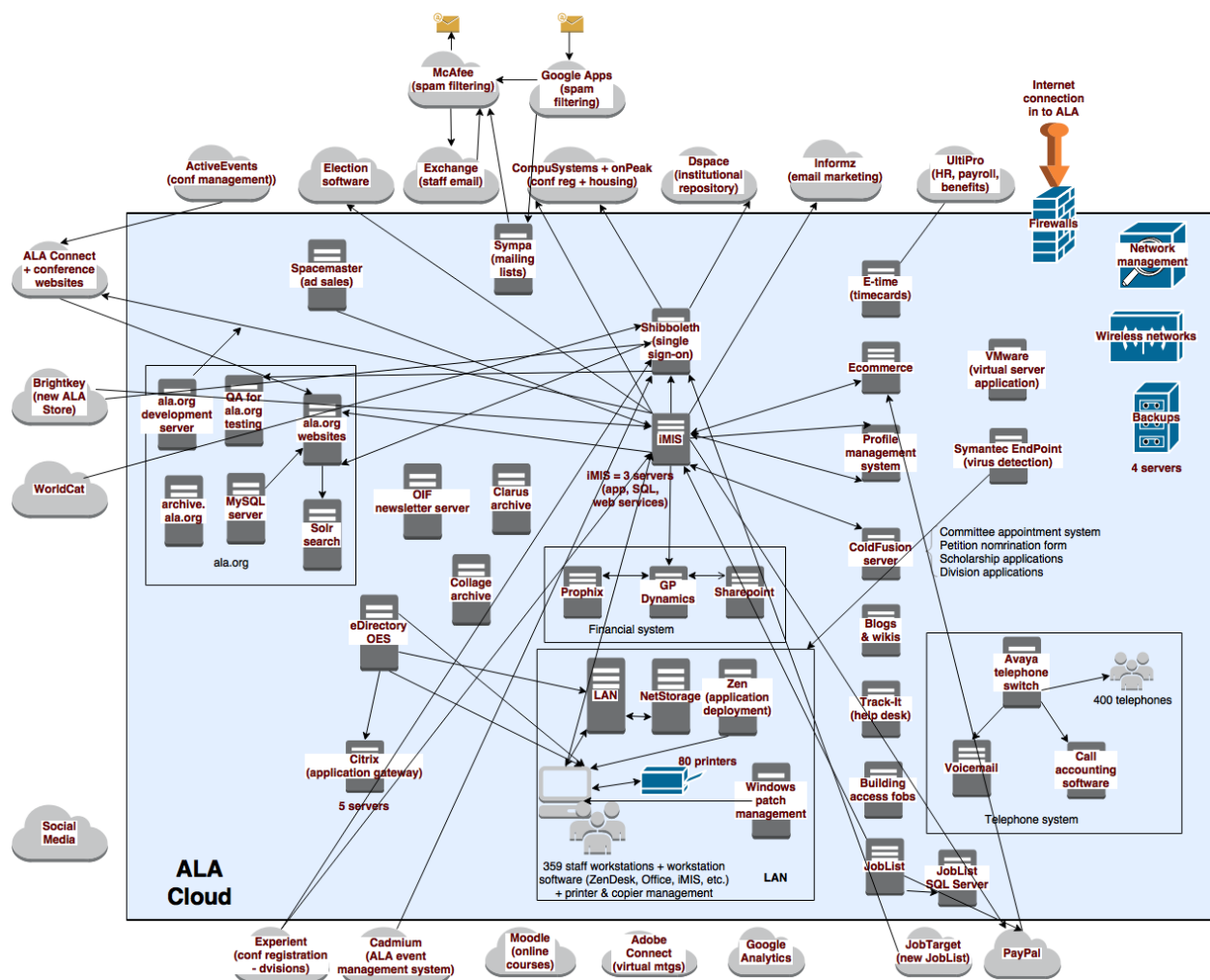
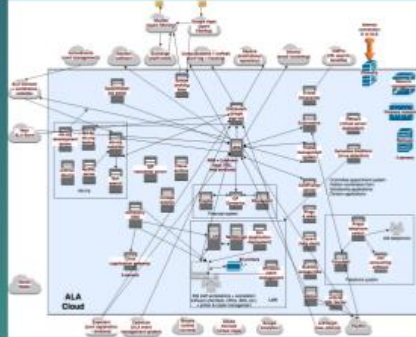


Diagram 1: ALA ITTS supports and manages some or all of 58 distinct service points for members and staff

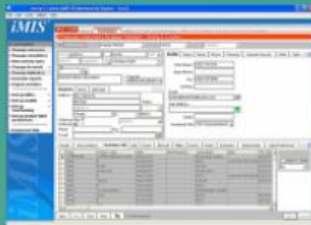
# 2014 in ITTS Numbers

4,048 help requests  
3,803 requests closed (94%)  
300 databases maintained  
120 virtual servers in ALA's cloud  
90 % of maintenance outsourced  
58 areas of service  
31 consulting firms  
9 ITTS staff



## Association-wide Support

### iMIS



8,211,433 activities stored  
608,763 user records  
997 pricing rules\*  
33 member types  
17 connections to other systems

### ala.org



25,348,126 pageviews  
6,143,823 user actions  
642,234 files downloaded  
82,333 emails sent via the website

### Connect



838,394 pageviews  
234,185 visits  
129,730 unique visitors  
27,959 content items added  
13,598 users logged in  
2,600 groups

\* Down from 1,639 pricing rules in 2013 because all sections of all divisions were made free as of September 2014

## 1. WEB PRESENCE

### *Current Landscape*

Our primary web presence consists of a 10-year old ecommerce system, a Drupal Web Content Management System, Shibboleth for single sign-on, Solr Search, a very early stage of an elearning portal, member and customer profiles, a committee appointment application, ALA Connect (covered elsewhere in this document), and many other miscellaneous applications (such as scholarship applications, the awards/grants database, electronic petitions, donation forms, etc.).

ALA currently uses the open source Drupal software as its enterprise web content management system. There are approximately 85,000 pieces of content and 500 members and staff have been trained on how to add content to the new system. Accessibility improvements are implemented whenever possible.

The Drupal environment provides [ala.org](http://ala.org) with a common, shared code base as the underlying foundation of the division, round table, and topical areas, which reduces maintenance of the software. In addition, ITTS staff are able to more easily implement web-based forms, make additional accessibility improvements, brand division/round table and specialty sites, and create dynamic pages

Shibboleth software is used to implement “single sign-on” using a secure connection. This means that when a user signs in to [ala.org](http://ala.org), she is also signed in to all other areas of ALA’s web presence that use Shibboleth for authentication. It has since been implemented with our conference vendors (ALA and its division national conferences), our conference recordings vendor, our DSpace institutional repository, and fifteen other systems.

ITTS implemented Apache Solr Search for faceted searching of [ala.org](http://ala.org) (similar to the way you can filter search results on Amazon).

The committee appointment system is now 8-years old, and it lives in the ColdFusion system that ITTS is trying to retire. In addition to providing separate volunteer forms for all ALA units, it has customized administration forms for both staff and appointing officers. To maintain this important cornerstone of the volunteer and appointments process, ITTS has to maintain a separate server and old code to keep it running until resources are available to migrate it to our current code environment (PHP).

### *Progress made in FY2015*

A new ecommerce system to replace membership join, renewals, and donations was selected and is on track for a January 2016 rollout.

A new responsive website redesign was developed and extensive usability studies were performed with members and staff at the Midwinter and Annual conferences. An RFP was distributed and nine proposals were vetted. The contract for the work was signed in August 2015. The implementation for the main site is scheduled for completion in February 2016. The division sites will go live following the completion of the main site.

An interim upgrade to the committee appointment system was contracted by ALA and its divisions to improve the portal access for the volunteer appointments and staff administration interfaces. The work is scheduled to be completed in December 2015.

An interim upgrade for the eLearning portal with template enhancements was completed.

The integration of enhanced profile data from both iMIS and ALA Connect was completed. This work will form the data foundation for the profiles in the new ALA Connect system.

### *Vision for ALA's Future Web Presence (FY 2016)*

A new responsive website template is scheduled to be deployed in February 2016 to meet the growing demand for on-the-go access to ALA resources. In addition, a new enhanced eLearning portal website, ALA eLearning will replace our existing ALA Online Learning portal at <http://www.ala.org/onlinelearning/> in 2016. The new site will be a comprehensive, easily navigated, one-stop resource where the global library community can find a full range of online continuing education and professional development opportunities offered by the ALA and its divisions. The new system will let us dynamically generate course lists, allow automatic filtering of results based on a particular member's interests, allow users to search for courses, and provide a way for us to combine ALA product placement within a course's description page.

We plan to meet with search engine consultants in December 2015 to work on recommendations for improving our search results and fine tuning our relevance ranking on the ALA website. A report on our findings will be delivered in January 2016.

ITTS will investigate options for replacing ALA's Moodle platform used for ALA e-courses with an externally-hosted software platform to increase support for professional development.

### *FY2017 Plans*

We will begin implementation of mobile apps for the ala.org site to allow members and the public to conveniently access information and services, including current membership information, express membership renewals, and our most popular web pages, across all types of devices.

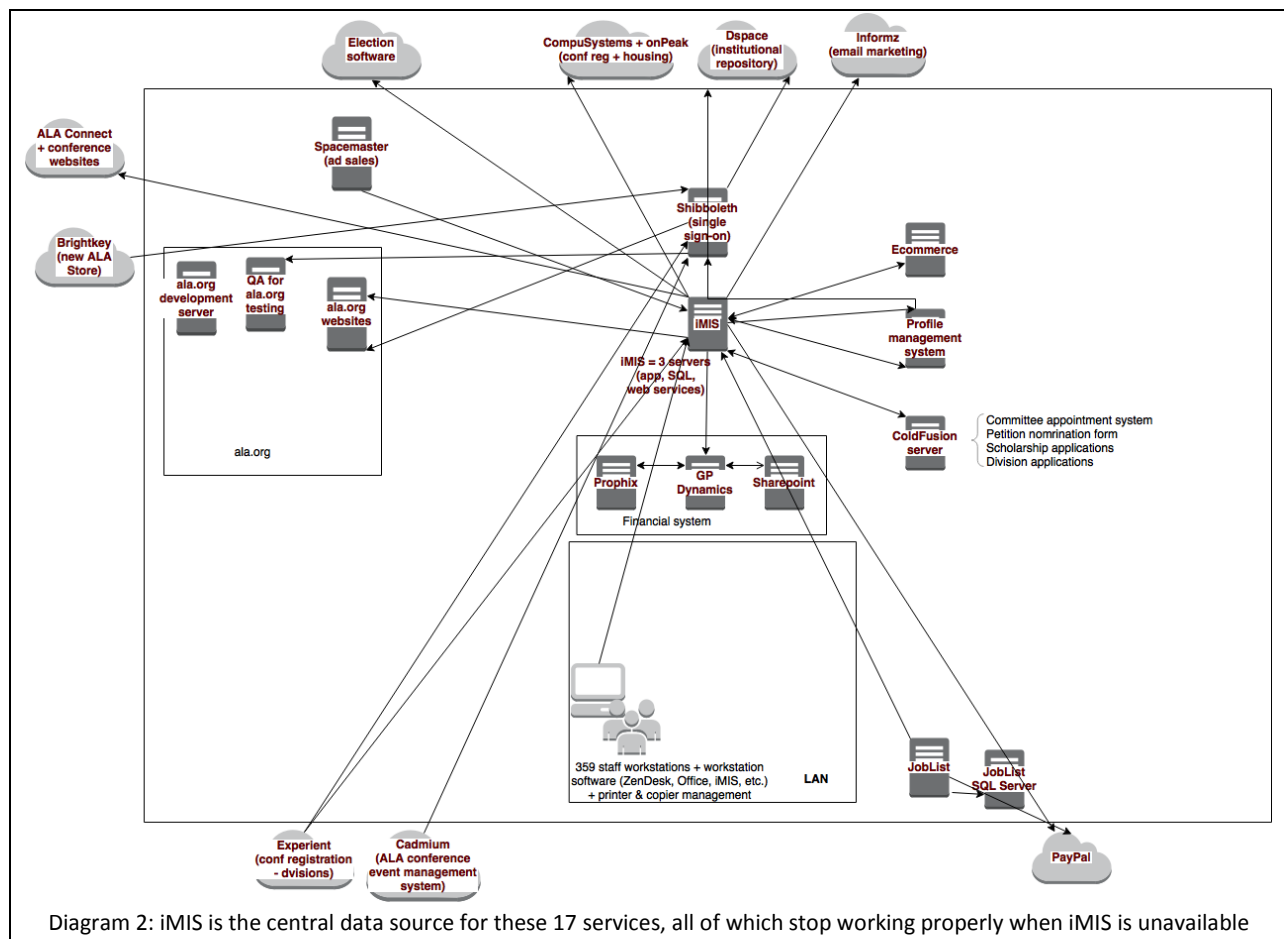
We will explore options for moving and/or replacing the software used to maintain the ala.org website to an external service in order to reduce the amount of staff time spent on software maintenance, upgrades, and security patches.

We will reassess our usage of Shibboleth to explore alternate solutions that might replace our single sign-on technology for all of our web-based resources.

## iMIS ASSOCIATION MANAGEMENT SYSTEM

### Current Landscape

This system captures member and customer transactions for dues, committee rosters, small events/continuing education, subscriptions, and fund raising. It is the brain of digital ALA and is the primary data source for authenticating to multiple pieces of ALA's web presence. The Association can't function properly when iMIS is inaccessible, and users can't log in to online services if connections to iMIS break or stop working. Our reliance on this system over the years has grown exponentially, and it affects every aspect of work in every ALA unit and member group. Even a one hour outage can cause lost revenue, lost access to ALA resources, and lost productivity. It is by far our most critical resource.



iMIS tracks millions of transactions per year, which translates into millions of dollars of revenue that is then managed in our financial system. The current iMIS system was last upgraded in October 2014.

Upgrading ALA's iMIS installation is a more difficult task than it is at other associations because over the years our organizational structure has produced membership dues pricing that required the creation of over 1639 pricing rules (down to 997 now because a decision was made to make all sections free as of September 1, 2014) in the software (most associations have 3-5 membership pricing rules). This

customized environment requires continuous maintenance and makes the migration to a newer ecommerce system a significantly more difficult task.

#### *Progress made in FY 2015*

The iMIS Association Management System was upgraded from iMIS version 15 to 20 in October 2014.

#### *Vision for Future iMIS Enhancements (FY 2016)*

An iMIS upgrade from 20.1 to 20.2 is planned to keep us on the current upgrade path.

#### *FY2017 Plans*

Now that we're on iMIS 20, we can begin migrating all staff to the web-based portal for access so that they can search for and update iMIS information from anywhere. This will reduce the load on our Citrix server (as well as the cost for licenses) and reduce the amount of software maintenance and upgrades required on desktops.

We will also begin exploring alternatives to our iMIS Association Management System (AMS) solutions used for managing member and customer information and how much it would cost to migrate to a different system. Over the past decade, ITTS has explored the option to migrate to a new Association Management System. Each time, the conclusion has been that iMIS remains to be the best solution for our AMS needs. A new AMS migration would also require customizing a new system to handle ALA's 33 member types and 997 pricing rules.

## **1. ECOMMERCE SYSTEM**

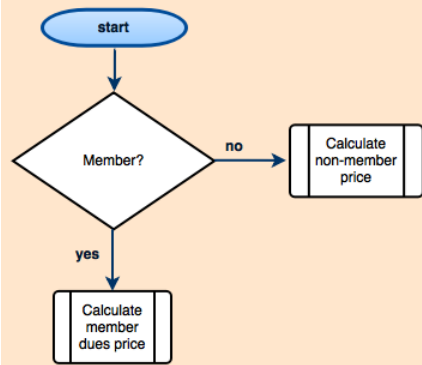
#### *Current Landscape*

This 10-year old system is used by members and non-members to join and renew 33 different types of membership, donate money, and register for many small events. It has processed millions of dollars and is tightly integrated with iMIS, our association management system.

The types of membership and the number of dues-based entities that need to be tracked have built up over the years to the point where these customizations require additional maintenance and IT resources just to maintain the status quo, making any changes difficult. Every new member type and membership special promotion adds to the number of rules that have to be implemented and maintained across every revenue-related system, increasing the complexity even further. This means there is no software ALA can purchase that can be implemented off-the- shelf to replace our existing ecommerce system.



### Typical Association Dues Process



### ALA Dues Process

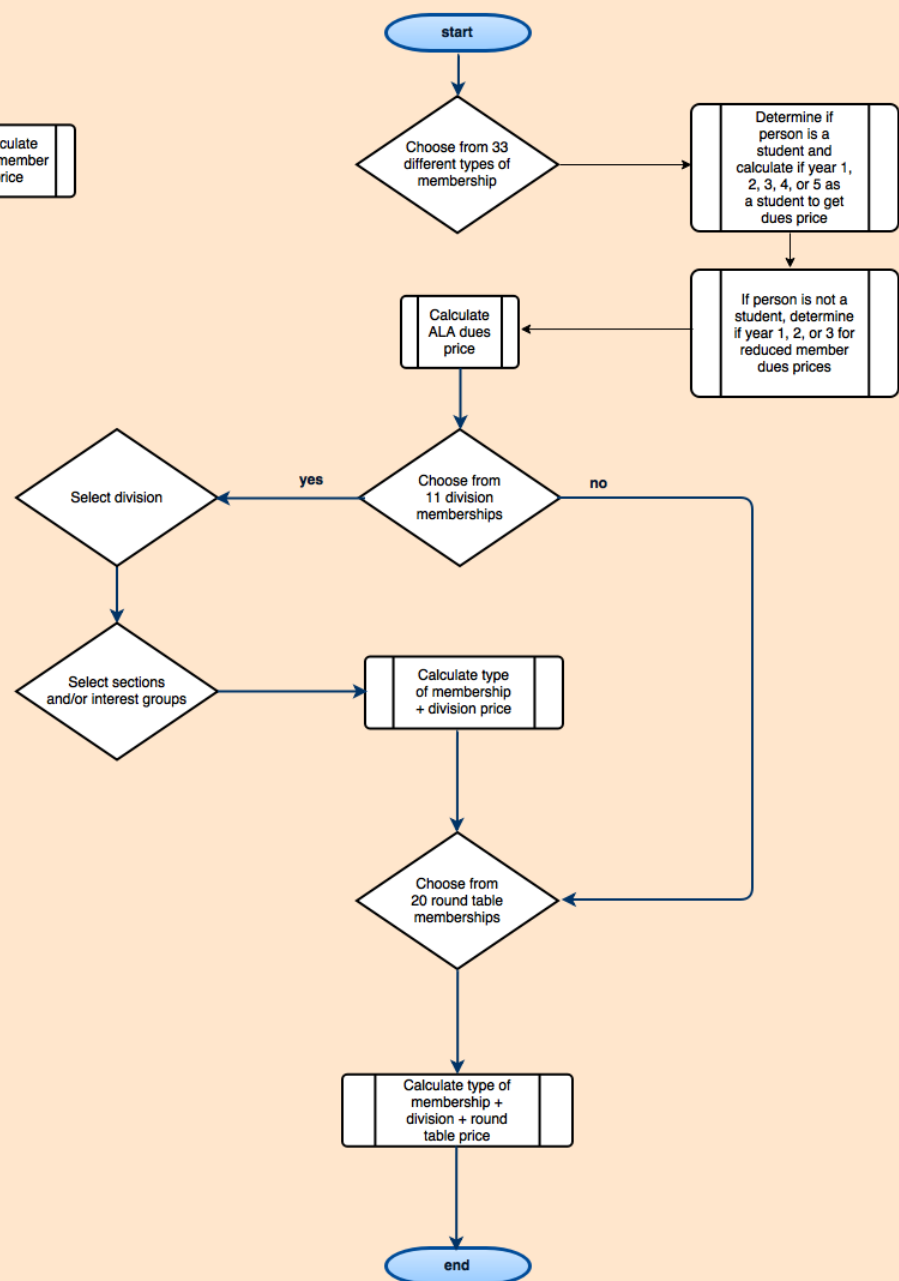


Diagram 3: Comparison of a typical Association's dues process to ALA's

### Progress made in FY2015

After much discussion with the divisions, all sections became free as of September 1, 2014 in order to reduce the number of special pricing rules from 1639 to 997.

While this is definitely progress and it will help reduce the number of special code needed, it doesn't remove the need for extensive customizations, and we still won't be able to implement any existing

software as-is, out of the box. A priority continues to be to simplify the pricing rules and to reduce the resources required to hack and maintain new software.

A new ecommerce system to replace membership join, renewals, and donations was selected and is on track for a January 2016 rollout.

#### *Vision for the Future of Ecommerce (FY 2016)*

The new ecommerce implementation is scheduled to go live in January 2016 and will provide much-needed new functionality. The new system will be more convenient for all users, allowing them to join, renew, or donate without first creating an iMIS account. It will also let users purchase membership dues, donations, and eLearning products through a single shopping cart and view recommendations based on library type, interests, and work specialty. ALA and its units will finally be able to offer promotional coupons and special offers and embed ecommerce widgets on non-ALA sites. Screens will be more customizable and the interface will be much more user-friendly.

The next phase of the eLearning enhancements will include a new eLearning ecommerce system for small events and continuing education to unify all of ALA's online learning opportunities in one place in one shopping cart.

#### *FY2017 Plans*

With a robust enough system that is more plug-and-play (i.e., not heavily customized), ITTS and Publishing could explore bringing the Store into ALA's ecommerce implementation in order to integrate products directly with other offerings such as online learning and ala.org web pages.

## **2. ALA CONNECT**

### *Current Landscape*

Connect is ALA's professional collaboration and community site for both members and non-members. [A full report on usage of ALA Connect was posted on the ITTS blog in February 2014.](#) Since its launch in 2009, the number of Connect groups has increased by 53% from 1,354 to 2,527, with 43% of all users logging in to the site at least once. A total of 126,497 content nodes have been added to Connect.

The site is built in Drupal, with the code managed completely by consultants. It maintains connections to iMIS and through calendar year 2015 it read XML feeds from Conference Services' room management software for the conference schedulers. iMIS rosters are synchronized to Connect automatically, saving staff from having to maintain rosters in multiple places.

The site also hosts a mentor matching service called MentorConnect and the Opportunities Exchange, a service where anyone can post opportunities such as equipment giveaways, freelance work, grants, job exchanges, scholarships, and volunteering to name the most prevalent. In 2011, the new Conference Scheduler was implemented in Connect's Drupal installation. The 800+ assistantship, grant, internship, and scholarship opportunities from ALA's FALIS Directory (PDF) were added to the OppEx to make them searchable and shareable online.

### *Progress made in FY2015*

ITTS worked with a team representing various parts of the Association to release an RFP to select new community software to replace the Drupal software running ALA Connect, with implementation scheduled in FY 2016. The contract was signed in July 2015 and is scheduled to go live in March/April 2016. This has been an area of significant market change during the past six years and the changes being made to these platforms facilitate faster implementation of new features, improve the interface, allow more flexibility for units wanting to customize groups, increase membership marketing opportunities, and offer potential new revenue streams.

Completion of the project to merge the iMIS and Connect member profile data into one source (iMIS) facilitated the above transition.

### *Vision for Future Enhancements (FY 2016 Plans)*

The completion in 2015 of the integration of enhanced profile data from both iMIS and ALA Connect into one profile where members can access and update all of their ALA information was essential to launching the new ecommerce system and preparing the way for helping members to more easily connect with each other. The enhanced profile data will allow the Association to display relevant continuing education and products offerings to members and customers based on their self-selected interests.

The new profile management system offered in the new ALA Connect will have expanded profiles and since all of their self-selected interests will be available in iMIS database, ALA units will be able to better target their marketing for relevancy. The new system is scheduled for implementation March/April 2016 and will allow us to offer:

1. **“My CE”** – Once the new eLearning Commons is implemented, we can add a section to member profiles that lets them easily find and track their ALA-related online learning.
2. **Member matching** – The new system will allow members to find other member based on interest, division/round table, region, job role, area of specialty, and more.
3. **Historical CVs** – ALA Connect profiles already show current committee and dues affiliations on member profiles. A future phase in the new system will make member profiles into full-blown CVs that can be made public to supplement resumes. Since historical activities are stored in iMIS, we can show a member’s full participation in ALA over the years, including committees, divisions, round tables, sections, donations, awards, and more. With additional work on the future Event Management System, we can also display on profiles when someone spoke at an ALA conference. The intent is to pre-populate member CVs with as much of their ALA data as possible to save them time and let that data help them when applying for jobs, grants, scholarships, etc.
4. **Volunteer Central** – This module in the Higher Logic system has the potential to replace the current homegrown Committee Volunteer Form with a “streamlined volunteer process with an automated and easy to use system” that also charts a member’s progress through the “Volunteer Commitment Curve” from lower levels of involvement through governance leadership positions. In addition, it provides a point-based system that can be used for badging based on contributions and offering members digital credentials on their ALA profiles. This module might also replace the current Opportunities Exchange in ALA Connect.

A new Community Engagement Specialist has been hired to help units support the configuration and set up of the new online community system developed by Higher Logic. Associations with a dedicated Community Engagement Specialist have proven to have a more successful implementation with more member engagement.

#### ***FY2017 Plans***

Continue to incorporate any new features and functionality offered by the Higher Logic system. We hope to connect the new system to ALA's Institutional Repository using APIs to make it easy for staff and members to preserve important content long-term.

### **3. CONFERENCE MANAGEMENT**

#### ***Current Landscape***

We already outsource the building of the conference websites, schedulers, registration sites, and housing sites. Conference Services and ALA divisions manage the consultants who do the programming for the conference websites and division national conference schedulers. ITTS is responsible for assisting each vendor with integration to Shibboleth, our single sign-on technology, and web service used to store attendee registration history in the iMIS system which is used for marketing purposes. ITTS assists conference services in the testing of registration pricing. ITTS has taken the lead to ensure that all conference resources are accessible to all users, even when the outsourced companies' products are not ADA-compliant off-the-shelf. We've helped four conference-related companies become more ADA-compliant, and we continue to test every system before each conference registration process opens.

#### ***Progress made in FY2015***

A decision was made to extend our contract with our conference recording company (CadmiumCD) to manage program submissions and rating process, meeting room requests and assignments, speaker management, conference scheduler, conference recordings, and mobile apps. ITTS staff worked with Cadmium on iMIS integration, Shibboleth implementation, and ADA-compliance for the new system.

#### ***Vision for Further Simplifying Conference Management (FY 2016)***

The implementation of the new event management system will continue by incorporating ALA conferences, division national conferences, and small conferences into the new system. The entire process for managing program creation, evaluation, speaker management, meeting room requests, and assignments, and delivery of program information to the conference scheduler will be simplified. New mobile apps for each conference will be available starting with the 2016 Midwinter Meeting.

ITTS will continue to assist in the evaluation of the user interface and take the lead to ensure that all conference resources are accessible to all users, even when the outsourced companies' products are not ADA-compliant off-the-shelf.

## 4. FINANCIAL MANAGEMENT SYSTEM

### *Current Landscape*

The suite of software used by ALA staff provides financial results in the form of monthly and yearly performance reports, bill payments, the creation of 80 separate budgets, and grant reporting. The system provides Accounting staff with a general ledger system (GL), an accounts payable system (AP), a fixed asset management system (FA), a budget management system, and software for scanning invoices.

The system was initially implemented in fiscal 2011 and parts of it have been customized by consultants to meet ALA's financial needs. ITTS staff spent a significant amount of resources on the installation and implementation of all the pieces of technology that make up the financial suite, including the migration of historic data to the new system. We also provided access and expertise to the many consultants that worked on the project, and we designed and set up the virtualized application access for ALA Finance staff.

As with all ALA revenue-related systems, the Association's nested organizational structure is replicated in an equally complex account structure in the software to track revenue and expenses by fund/sub fund, unit, line item, and project number. There are currently 22 Fund selections and 799 unit-project combinations. This GL structure requires continuous maintenance and support for creation of new project numbers, account combinations, and granting of permissions to view the accounts organized by unit.

Customization of the financial suite software requires ongoing IT resources for managing the many consultants, staff support, troubleshooting, maintenance of the servers, managing software upgrades with the least disruption to service, and maintenance of users and permissions.

### *Progress made in FY2015*

ITTS upgraded the Prophix financial performance reporting system from version 10 to 11.

ITTS worked with Accounting and Grant Managers to create detailed grant reporting in Prophix 11. These improvements help our Grant Managers to manage their resources more efficiently and provide real-time reporting to grant funders.

ITTS worked with Accounting and HR to design a new personnel data cube needed to perform automatic calculations of staff salary increases and benefits in the Prophix financial reports used for budgeting purposes.

### *Vision for the Financial System (FY 2016)*

The Finance and Accounting team has asked that units reduce the number of projects needed to support their areas in an effort to simplify complexity. We are currently using Microsoft GP Dynamics 2010 and have plans to upgrade to the current release. ITTS will continue to support Accounting and Finance in their efforts to improve ALA's financial procedures, seek efficiencies, and increase productivity.

### *FY2017 Plans*

ITTS and Finance will investigate the possibility of using an externally-hosted version of Prophix to provide for remote user access.

ITTS and Finance will investigate external hosting solutions for the rest of our financial applications. Moving all parts of the financial system to an external host will allow all staff to access everything remotely, outsource maintenance of the hardware infrastructure, and accelerate software upgrades.

## **5. TELEPHONE SYSTEM**

### *Current Landscape*

The requirements of the Chicago office are currently served by an “on-site” premise based PBX System, associated Voice Mail System and a CentraView Call Center System. All three of these products are considered Legacy Systems that have been Manufacture Discontinued and are no longer supported by AVAYA. They were installed at ALA about 15 years ago as a replacement for the Telephone Company’s Centrex Service. There is no longer any research and development activities associated with any of these products so the features and capabilities are frozen in place as they exist today.

The telecom systems described above are currently being maintained and repaired by an AVAYA 3<sup>rd</sup> party maintenance organization called Morgan Birge. They employ older, experienced telecom technicians who are familiar with the old Legacy Definity family of products. Repair and replacement parts and components are sourced in the “secondary or used” marketplace since new parts are no longer being manufactured. While the availability of parts and access to skilled technicians has not been a problem in the past, there is NO Guarantee this will continue in the future.

While the situation described above is not ideal, there are some positive factors about the present arrangement. The current systems are owned and have been fully depreciated so there are no capital costs required to keep the status quo. The AVAYA equipment has been extremely reliable and its operation stable over the years. The normal telecom features and software capabilities found in this legacy equipment have been adequate for ALA’s needs. ALA’s head count and business mission are fairly stable and there are no plans that would involve rapid growth or a relocation to new office space. The existing cabling and wiring set up of separate voice and data wire and cable is already in place and the money already spent so unless there are extensive changes there are no economies to be found in an integrated voice and data cabling plan. The present service and support arrangement with Morgan Birge has been responsive and cost effective. The price of Long Distance, Local Calling, Toll Free and Audio Conferencing Services have dropped dramatically over the years helping to drive down our overall telecom costs.

### *Progress made in FY2015*

We continued to support and maintain the current configuration described above.

### *Vision for the Telephone System (FY 2016)*

It is apparent that we will have to make a change to our telecom systems and services at some point. In a sense it is like replacing the roof on your building, you know you will have to do it and that it will be a large capital outlay, but you want to delay it as long as you can, provided you don’t put it off so long that

water comes gushing down into your offices. Replacing our existing systems with the latest technology will be a major expenditure.

All the newer telecom systems, whether premise based like what you have now or hosted in the “cloud” are based on Voice Over IP technology. Collectively they are referred to as Unified Communications Systems and Services. They incorporate all the capabilities that integrate voice calling, voice messaging, text and email and the whole suite of conferencing and collaboration capabilities on to a single platform. Telephone devices and computers share a common wiring plan. They incorporate capabilities such as “Presence” which is designed to let you know a person’s availability prior to trying to reach them. They easily support the Teleworker and Virtual Office concept in a seamless manner allowing ALA staff to truly work from anywhere. They allow Call Center representatives to integrate with various ALA data bases, to have web enable chat sessions with the caller and other capabilities to enrich the customer/caller experience.

A capital cost of about \$200,000 to \$250,000 is needed. Obviously leasing will change it from a one-time cash hit to an ongoing monthly expense. Likewise hosting this in the “Cloud” will manipulate the costs.

A timeline of no more than 18 months is recommended. This would put the installation of the system sometime in early 2017.

#### *FY2017 Plans*

ITTS will begin implementation of a new Voice Over IP technology in January 2017.

## **6. MEMBER RESOURCES**

### *Current Landscape*

The code and servers for the following miscellaneous web application systems are managed and maintained by ITTS.

- Sympa Mailing List Management System
- WordPress blogs and Mediawiki wikis server
- Committee Volunteer System (writes directly into iMIS database), includes three levels of administration/volunteer subsystems.
- Joint Membership application and supporting admin system provides 22 student applications each of which are state-based. The system takes and encrypts credit card information for Member and Customer Service to process.
- E-petition system allows members to create an e-petition and collect signatures. The supporting administration sub-system provides setup and monitoring by staff.
- Awards application system allows applicants to apply for nine ALA awards. Includes a subsystem for volunteer reviewers.
- A system that provides online applications for two different subscriptions: United for Libraries Authors for Libraries Form & the United for Libraries Group Member Form. The form encrypts credit card information, and there is a subsystem for MACS to access the subscriptions.

- Emerging Leaders Projects system that allows staff to enter projects that are available so that ITTS can then make them available for members to volunteer for (Sept - Nov). Admin systems allow staff to manage the application process.
- New ALA Leadership Institute application form (open for application Jan - April)
- ALA Member Demographics Survey that writes demographic data into iMIS
- LIS searchable database of ALA accredited programs that includes a staff subsystem
- Partnership Form application system for organizations and companies to propose partnering with ALA; includes a staff manager subsystem and staff subsystem.
- Scholarship application system (including Spectrum) that allows for people to apply for a number of available scholarships. It has a subsystem that automatically sends out emails requesting and gathering references. It also includes a subsystem to allow jurors to review applications and a staff admin subsystem.
- Subscription system provides an online application for two different subscriptions: United for Libraries Authors for Libraries Form & the United for Libraries Group Member Form. The form encrypts credit card information. There is a subsystem for Member and Customer Service to access the subscriptions.
- Foreign Book Dealers Directory form, display, and staff admin subsystem. Form provides public facing entry and then staff approves or rejects the posting on the public facing searchable database.
- Dia event 'Map' system. Provides entry from libraries, admin subsystem for approval, reports, search (including proximity,) and viewing system for the public.
- Beyond Words application allows libraries to apply for grants in the event of a catastrophic event to their library. Includes reviewer subsystem that provides access and rating of applications and recommendations of grant monies. There is also a staff admin subsystem.
- School Library Count - Web system and database that generates PDF reports based on current membership status tied to login.

#### *Progress made in FY2015*

The Sympa List Management System was moved to priority one status and upgraded to the current release in July 2015 after a crisis that caused a stoppage of email.

Regular updates were made to the WordPress blog and MediaWiki wiki software were performed.

The Committee Appointment System interface was redesigned and consolidated. The new version is scheduled to go live in December 2015.

Minor modifications based on member needs were made on some of these applications.

Microsoft SQL database upgrades were performed on most of these applications.

#### *Vision for Member Resources (FY 2016)*

Sympa will be upgraded to stay current with major releases.



Regular updates to the WordPress and MediaWiki software will be performed.

The rest of these applications will continue to be modified based on member needs. If possible, we will replace the Committee Volunteer Form with the Volunteer Central module in the new Higher Logic platform for ALA Connect.

#### *FY2017 Plans*

The ColdFusion applications will be assessed for future viability. We will determine whether it will be most effective to upgrade ColdFusion or migrate to a new platform.

The Blogs and Wikis server environment will be upgraded.

## **7. TECHNOLOGY RESOURCES FOR STAFF**

### *Current Landscape*

Our Citrix communication farm is currently on Window Server 2003 and needs to be upgraded to the latest version of Windows Server and Citrix. This resource provides staff outside of our Chicago office remote access to the following applications:

- GP Dynamics Financial System
- Prophix Financial Reports System
- SharePoint Bill Payments Process
- iMIS Association Management System
- SpaceMaster Ad Management System
- eTime Time Labor Management (TLS)

Microsoft Office 2010 suite is currently deployed to all workstations.

Track-It! IT Helpdesk Software is currently used by all staff to submit trouble tickets to ITTS.

### *Vision for Resources for Staff (FY 2016)*

An upgrade of our Citrix communication farm is on the schedule for January 2016.

We plan to move staff to the cloud-based Office 365 service to make remote access to Microsoft Word, Excel, PowerPoint, and Outlook available through any web browser. The software and email archives will be hosted by Microsoft, which will make document storage, software maintenance, and access to Outlook archives much easier.

We will also be migrating to a cloud-based helpdesk solution. This will allow all staff from any location to submit and track help requests via a web browser. The software will be maintained and upgraded by the provider and will allow ITTS staff to better manage helpdesk tickets from anywhere.

#### *FY2017 Plans*

Once we've migrated staff to using Office 365 online and web-based iMIS, we'll determine which, if any, users can be moved from desktops to Chromebooks or equivalent technology in order to save on software maintenance and hardware costs. This would enable users requiring only cloud-based services to have a notebook computer that can easily be replaced in the event of a hardware malfunction and reduce the time spent on rolling out software applications and maintaining them on ALA desktops and laptops.

We'll investigate possible solutions to replace Citrix for remote access to remaining in-house applications.

## **8. LIBRARY CATALOG**

### *Current Landscape*

In 1998, the ALA Library, through membership in the local multi-type consortium, was able to migrate the first iteration of its online catalog to Dynix Horizon. In 2006, the ALA Library and ITTS established the Knowledge Management System (KMS) using SydneyPlus software for an intranet, knowledge base, and integrated library system (ILS) supporting serials check-in and routing, circulation, and the online catalog. Beginning in June 2014, the ALA Library worked with OCLC User Support Services to transfer the catalog content and ILS functions to the WorldShare Management Services (WMS) suite of applications and with ITTS to reestablish the intranet content at [www.ala.org/support](http://www.ala.org/support). Selection of WMS to support delivery on metadata about ALA Library content enables our tiny library to benefit from OCLC's continuous product development and implementation of services to improve local library service. WMS is a cloud-based service freeing up ITTS staff and equipment resources.

### *Progress made in FY2015*

Through the fall of 2014, the KMS was dismantled, with local content—membership statistics, the staff directory, HR policies and similar internal documents—being placed on a restructured [www.ala.org/support](http://www.ala.org/support); knowledge base files being reviewed and converted to informational or linking pages in a subsection of [www.ala.org/support](http://www.ala.org/support) entitled ALA Digital Library; and bibliographic content readied for OCLC's data migration process. During this time Library staff also participated in training sessions and ironed out circulation policy encoding issues. To make access to the growing base of electronic resources, the ALA Library took the lead to establish EZProxy access and Shibboleth login to the resources. Using the OCLC License Manager and Collection Manager application, direct access to full text resources was established. The WMS Discovery catalog (<https://ala.on.worldcat.org/discovery>) went live at the end of February 2015, coincident with the conclusion of the SydneyPlus contract. Data clean-up has been ongoing.

### *Vision for Resources for Staff (FY 2016)*

The development of the ALA Digital Library will continue with roll-out of a desktop icon to access it directly, staff training, and further development of access to electronic resources. In particular, the ALA Library is working with ALA Publishing to make ALA's own e-books available to staff with proper credentials.

### *FY2017 Plans*

The ALA Library will continue to refine metadata for its collections and implement new features of WMS as they become available. Of particular interest are the APIs developed by other WMS libraries that may make ALA Library activities, such as routing new issues of periodicals for staff current awareness, flow more smoothly.

## **9. AWARD & GRANTS DATABASE**

### *Current Landscape*

This project is part of the overall ALA response to Web site issues identified in the Member Satisfaction Survey and the Web Site Usability Study back in 2007. The goal is to make it easier for anyone to find award, grant, or scholarship information, particularly without having to know the ALA structure. As envisioned by the Awards Database Enhancement Team, this database offers specialized information needs for members and others seeking information on ALA's 300+ awards: description of the award, sponsoring unit, past winners, application/nominations process and criteria. It is to be searchable by unit, type of award (recognition, media, etc.), name of award, year. Output from the database is currently displayed on the ALA Awards page, and as a link from the Scholarships pages.

Currently committees and their staff liaisons use a variety of formats and interfaces to interact with each other and choose their final winner(s) for awards, grants and scholarships. Once these selections are made, the staff liaisons, and sometimes the committee members themselves, publish the winner(s) on a website or blog, and then sometimes enter the information into the Awards Database. This duplication of effort, scattered over a variety of resources, entered in a variety of formats, does not provide a cohesive, definitive source for ALA's awards, grants and scholarship information. The ALA Awards Database was created at the behest of Unit Managers and Executive Management to be the repository of all award, grant and scholarship information for all of ALA, both past and present.

With the migration of the entire ALA website to Drupal in 2012, it became technically possible to deliver the data contained in the database to division pages (microsites) seamlessly. The awards pages would finally be able to employ the division's look and feel, while presenting dynamic data driven by the underlying database. This should alleviate the need to maintain duplicate awards pages. In addition, the ability to do batch uploads of data for those awards that have 10 or more selections each year was created and available to units. Unfortunately, neither of these functions were implemented in the migration of the database and displays to Drupal.

### *Progress made in FY2015*

Units have sporadically entered new winner information, and/or new award information into the database, while still maintaining their own microsite award pages.

### *Vision for Resources for Staff (FY 2016)*

Units will continue to enter new winner and/or new award information into the database. No improvements in display or access are currently budgeted. The result is an incomplete and chaotic picture of a key member activity.

### *FY2017 Plans*

Funds will be targeted to allow for the improvement requests that have arisen over the years, as awards are one of the top reasons users access our website. If the content from the awards database could be delivered to the various microsites, units would no longer need to duplicate content to display on their microsites, and would encourage all units to make updates to winner lists regularly. Further, visitors to the website would be able to access information on award deadlines and selection processes, as well as to determine winners using a variety of search strategies. Website searches (across all parts of the ALA website) consistently show that awards pages are among the top 10 most visited pages on the site. Having a single location for all awards information will be a great asset for the association.

## **10. INSTITUTIONAL REPOSITORY (ALAIR)**

### *Current Landscape*

ALA began keeping its Archives at UIUC in the 1970s. The ALA Archives is the official repository for the records of the ALA. Part of the ALA Archives mission is to collect and preserve records that have continuing administrative, legal, or research value, both physical and electronic-born. The ALA Archives has collaborated with ALCTS and the ALA Library in developing a digital repository for ALA as a whole, focusing on a means to preserve publications and other documents, encompassing text and images.

The result is the American Library Association Institutional Repository (ALAIR), which is an open access repository that collects, stores, and provides access to the publications and digital-born records of the ALA. This digital repository aids in the ease of access, arrangement, and preservation of electronic records. It also provides a simple way for ALA units and members to deposit electronic records and publications directly into the repository. <https://alair.ala.org/>

### *Progress made in FY2015*

Several units have been making steady progress uploading files to ALAIR. There are currently over 400 files located in the electronic archive, with more being added weekly.

### *Vision for Resources for Staff (FY 2016)*

This coming year the Policy Reference File will be moved and uploaded to ALAIR. In addition, it is hoped to have the Executive Board and Council minutes and documents also uploaded, thus making them more easily accessible to staff and members.

### *FY2017 Plans*

Going forward it, more ALA units will take advantage of ALAIR by moving appropriate files from the website server to the digital archives.

## **11. NETWORK INFRASTRUCTURE**

### *Current Landscape*

The current ALA internal network is structured around edge switches for each floor across the 40 East and 50 East buildings, all aggregating back to core switches in the 40 East 6th floor server room. The floor switches are all HP E-series devices, stackable units in one building and modular units in the other.

With the exception of the 40 East 6th floor switch, the interconnects are all fiber - currently 4 each at a speed of 1 Gbps (Gigabit per second) each for an aggregate of 4 Gbps per floor. The interconnects are connected to two separate fiber switches in the A-series IRF stack (Intelligent Resilient Framework - a protocol that permits an entire stack of switches to act as a single larger switch) for load balancing and redundancy.

The IRF stack contains two fiber switches and 3 copper switches with larger numbers of interfaces at gigabit speeds, plus smaller numbers of interfaces that can run at 10 Gbps speeds. The 40 East 6th floor switch is interconnected over 4 copper connections at 1 Gbps each directly to CoreA. The 40 East 6th floor switch also hosts the Wireless Services module, which controls 14 radio ports placed strategically across both buildings. CoreA is the legacy internal server switch. It currently hosts internal routing functions as well, but this function is planned to move to the A-Series IRF stack. CoreA is interconnected to the A-series stack by 8 copper connections at 1 Gbps each for an aggregate of 8 Gbps. Legacy physical servers are mostly connected directly to CoreA. The newer internal virtualization infrastructure, the blade chassis, has multiple 10 Gbps connections to the internal IRF stack. Server and appliance management interfaces are either connected to a legacy switch or directly to the internal IRF stack. Internal iSCSI (a storage protocol that runs over network cable) devices are connected to the IRF stack by 10 Gbps connections and are isolated on a special VLAN (virtual network segment).

There is an interconnect from the IRF stack to the network firewall, a Watchguard appliance. The network firewall also has interfaces connected to the external switch that links us to our current ISP (RCN) as well as to the various DMZ (demilitarized zone - a term for a separate secure segment reserved for Internet-facing servers) switches. We have a legacy DMZ switch for the older physical servers and a newer 3-device IRF reserved for DMZ devices. The DMZ virtualization hosts and storage servers are all connected directly to the DMZ IRF stack.

All of these switches are running multiple VLANs for traffic isolation and security.

The ALA infrastructure also includes an L4 switch - a load balancer and content switch that can make decisions based on URL content, not just network addresses or host names. The current ALA load balancer is a Barracuda virtual appliance, which is in line with the needs of the DR plan. There is also a dedicated WAF (Web Application Firewall) which is a component of our layered security model permitting more granular blocking of certain types of invalid and malicious web traffic against ALA's web servers.

### *Progress made in FY 2015*

We completed the hookup of the second pair of fiber to each floor location. We increased our use of the capabilities of the IRF switches to increase redundancy in network connectivity and reduce single points of failure. We made progress on retiring legacy network switches and network segments. We replaced the old Cisco L4 content switch and load balancer with the new Barracuda virtual load balancer. We also migrated ALA's inbound and outbound anti-SPAM gateways away from the discontinued Postini platform to McAfee (for inbound and outbound staff mail and outbound Sympa list traffic) and Google Apps (for inbound Sympa list traffic). Significant amounts of our available resources were consumed

with mitigating the impact of several large-scale industry-wide security vulnerabilities (such as the attacks known as Poodle and Shellshock). These required significant efforts in emergency unplanned patching, upgrading, and in some cases replacing servers or services that could not be upgraded.

#### *Vision for Network Infrastructure Improvements FY 2016*

In FY2016, we will continue retiring legacy IP address ranges and legacy DMZ and server switches. We plan to initiate routing on the IRF stack and evaluate internal and Internet bandwidth and network utilization in order to plan any necessary changes. We will evaluate the existing wireless solution's utilization and security (including the potential impact of any BYOD initiative) and implement appropriate solutions. We plan to split the inbound and outbound network firewall traffic to improve overall performance and implement improved Internet connection monitoring and emergency notification & access. As our new DR plan is implemented, we will make any other changes mandated by it. Progress on all of these plans continues to be constrained by limited resource availability.

#### *FY 2107 Plans*

We will continue and complete the legacy retirements, and the wireless infrastructure changes. We will explore IPv6 in order to create a plan for implementation and implement a lifecycle replacement plan for existing switch hardware and technology.

## **12. DESKTOP & SERVER INFRASTRUCTURE**

### *Current Landscape*

The current ALA staff computer infrastructure is a mix of desktops and laptops for a total of 359 workstations. All regular user devices should now be running Windows with Microsoft Office. The current ALA server infrastructure is a mix of physical and virtual, Windows and Linux. New Windows servers are virtualized Windows, and new Linux servers are virtualized on either SuSE Linux Enterprise Server or CentOS (a variant of Red Hat Linux). Some legacy devices are still standalone physical servers and older operating systems, but those are being gradually phased out and/or migrated to virtual machines. The existing internal virtualization solution is VMware, running on an HP C3000 blade chassis with 6 blades – (some of those blades are also older and due for replacement). Internal storage is a pair of HP LeftHand iSCSI clusters, one three-node serving about 30 Terabytes of usable disk and another 4-node serving about 22 TB of usable (but faster) disk. The DMZ is a separate cluster of physical virtualization hosts with its own three-node LeftHand cluster, serving about 12 Terabytes of usable (fast) disk. Backups are primarily performed by a new dedicated virtual infrastructure backup program. Backups are first performed to a B2D (Backup to Disk) server for speed and ease of access. From there they are staged to tape and additional disk, first for longer-term storage and second for additional capacity. Continued expansion of files stored on the network is pushing at the limits of the currently available B2D targets - additional storage is already planned. There are over 120 total virtual machines across the internal, management, and DMZ environments.

### *Progress made in FY2015*

This year, we continued to P2V (physical to virtual migrate) or outright retire many older legacy servers. We completed the implementation of the new virtualization backup solution, including B2D and new higher capacity tape storage. This solution also permits us to move directly into BaaS (Backup as a Service) - cloud-based offsite backups. We replaced the old physical Sympa mailing list server with a new virtual host running a new version of the Sympa software. We re-used the existing Windows deployment infrastructure for an additional wave of desktop and laptop lifecycle replacements. We also began implementation of Filr, a replacement for an older solution for secure remote file access for staff.

### *Vision for Desktop and Server Infrastructure (FY2016)*

In FY2016, the server room UPS is due for replacement. We will evaluate our needs and plans, and implement the appropriate solution. Certain storage nodes are approaching the end of their supportable lifespan. With the various on-site and cloud initiatives in mind, we will evaluate our projected storage needs and upgrade or replace these devices as needed. We will also increase our Backup to Disk capacity as planned, as that capability will be required in any scenario short of moving the entire data center off-site. Multiple operating systems, platforms, and applications are eligible or due for upgrades - we will implement such upgrades as planned and/or required. We plan to improve the automation of delivering patches to desktops, laptops, servers, and applications. We plan to improve automation of management and monitoring services, and complete the deployment of a new version of the Filr secure remote file access solution. We will implement a staff password self-service portal, permitting password changes for non-local staff, and we will continue desktop, laptop, and monitor lifecycle replacements. We plan to implement a pilot of new Remote Office Worker functionality, which is required for most Disaster Recovery scenarios and can be used for many other support and staff purposes (more detail about Disaster Recovery can be found in that section of this report). We intend to implement improved storage management and reporting, evaluate server hardware lifecycles (including blades), and make any necessary lifecycle replacements.

### *FY2017 Plans*

In FY2017, we will continue to evaluate on-site versus cloud scenarios and make any necessary adjustments, including server/blade/storage lifecycle replacements as required. We will continue to evaluate and implement improved remote access and, if needed, BYOD (Bring Your Own Device).

## **13. NETWORK SECURITY**

### *Current Landscape*

ALA's computer security is based on a multi-layered defensive scheme. We maintain inbound and outbound anti-spam and anti-virus protection on staff email and mailing list traffic, as well as on system-generated messages from services running at the Chicago office. We have a perimeter firewall to control access to our resources that includes intrusion detection and prevention measures, as well as additional anti-virus scanning on file transfers.

We've engaged a third-party service provider to perform additional regular monitoring, including intrusion detection and log analysis to proactively block known malicious behavior and events that match known signatures. Our provider also performs monthly assessments to inventory, assess, and provide remediation plans on new and current devices and services in order to identify vulnerabilities. They additionally perform annual penetration testing, as part of an overall health check. This testing is performed both internally and externally, and it checks the efficiency of our controls by simulating an attacker. The service provider also helps us to respond to incidents, helping to protect data and the Association's reputation, containing damage and restoring systems.

We maintain internal management and tracking systems that permit us to monitor for aberrant behavior and to deploy vendor security patches to internal systems efficiently. We also manage patching of staff workstations and laptops.

We aggressively work with our staff and partners to assess ALA's exposure and respond appropriately.

#### **Additional Background Information:**

##### **Credit Card Transactions**

We use industry standard Transport Layer Security encryption for our website transactions. When credit card numbers are taken over the phone by ALA staff, they are recorded on a paper transaction document and securely destroyed after the transaction is complete.

##### **Emails, Web Forms & Donations (taken from our Privacy Policy at <http://www.ala.org/privacypolicy>)**

"Personally identifying information that you provide by emails, web forms or donations will be used only for such purposes as are described at the point of collection (for example on a web form), such as to send information or products to you, update your membership or donor record, or to respond to your questions or comments. If you provide contact information, ALA staff or its contractors may contact you to clarify your comment or question, or to learn about your level of customer satisfaction with our services.

Any credit card information you provide for goods, services or donations is secure and used only for your intended purpose."

##### **Contracts with vendors storing Personally Identifiable Information (PII)**

We are now asking our vendors storing any type of member or customer information in their systems to provide us with a security plan on how they are protecting our PII data. We also reference their plan in our contracts.

##### ***Progress made in FY2015***

This section was removed because it contains sensitive security information.



### *Vision for Network Security (FY 2016)*

We will continue to engage our third-party service provider to perform additional regular monitoring, including intrusion detection and log analysis to proactively block known malicious behavior and events that match known signatures. Our provider also performs monthly assessments to inventory, assess, and provide remediation plans on new and current devices and services in order to identify vulnerabilities. They additionally perform annual penetration testing, as part of an overall health check. This testing is performed both internally and externally, and tests the efficiency of our controls by simulating an attacker. They also help us to respond to incidents, helping to protect data and the Association's reputation, containing damage and restoring systems.

### *FY2017 Plans*

Same as above.

## **14. DISASTER RECOVERY**

### *Current Landscape*

ALA's current Disaster Recovery infrastructure is based on a 2010 revision to the original 2007 DR plan, with virtualized servers that replicate to a separate live DR virtualization environment. Improvements in the industry, particularly with cloud-based Backup as a Service (BaaS) and DR as a Service (DRaaS), in conjunction with built-in capabilities of our current virtualization backup solution, have obsoleted our current infrastructure. We have the framework for the 2015 revision to the plan in place and have begun necessary steps that will permit full implementation in FY 2016.

### *Progress made in FY 2015*

We made progress in transforming the self-hosted design from the 2007 plan towards the new 2015 DRaaS (DR as a Service, cloud-hosted DR) vision. We have fully implemented the new Veeam virtualization backup solution that gives us an easy road towards BaaS (Backup as a Service) and will shortly enable easy and economical DRaaS. We have begun structuring our virtual infrastructure and its linked backup sets to be in line with the current standard of priority tiers that have been defined for DR.

### *Vision for Disaster Recovery (FY2016)*

In FY 2016, we plan to implement full DRaaS - quick and straightforward activation of relatively recent versions of protected data into a cloud-hosted virtual infrastructure, along with a simple path to return to normal after the disaster is resolved. All prior rounds of planning for this goal have been performed under a self-audit. Further progress at this point calls for a more formal Business Impact Analysis. A formal BIA is an essential component of business continuance planning, identifying any gaps in our DR coverage and formalizing targets for RTO (Recovery Time Objective) and RPO (Recovery Point Objective), as well as MTO (Maximum Tolerable Outage) for all of the items within ITTS' areas of responsibility.

The planned primary scenario is to use the Veeam Cloud Connect virtual machine replication and disaster recovery service, along with a cloud hosting partner, to replicate all identified ALA virtual

resources to the hosting partner's offsite storage according to a defined schedule. Then, in the event of a disaster that makes the data or servers at ALA inaccessible, we can connect to the hosting partner and activate the stored copies nearly instantly. Older methodologies based around offsite tapes or backups would have required extended periods of rebuilding infrastructure and restoring backups before any services could be restored. This new solution potentially reduces downtime to minutes and reduces the impact on member services, revenue generation, and staff productivity.

As part of this plan we must implement some level of Remote Office Worker functionality to meet the Association's business continuance needs. The BIA will permit us to define these needs in advance and accelerate access to critical data during a disaster.

Some servers or services that are currently implemented only in physical appliances, such as the network firewall and web application firewall, will either need to be replaced with virtual analogues that can fail over with the rest of the environment or will need to be supplemented with cloud-based alternatives dedicated to protecting the DR environment.

#### ***FY 2017 Plans***

We plan to evaluate IaaS (Infrastructure as a Service) and other external cloud-based solutions in an ongoing analysis of self-hosting versus offsite hosting. We will determine whether, for any given service, ALA is best served by hosting that service out of the Chicago office or by hosting it with an external provider under a defined SLA (Service Level Agreement, a contract defining required availability levels and penalties for failure to meet goals).

## **15. ITTS BUDGET**

#### ***Current Landscape***

The FY 2015 operating budget is \$2,430,763. We anticipate \$197,000 will not be spent due to salary savings from vacant positions, depreciation savings, and some professional services monies not spent due to timing of new projects and available staff to work on them.

#### ***Vision for ITTS Budget (FY 2016)***

The FY 2016 operating budget is \$2,529,549. The increase supports a new ALA Connect site, Office 365 implementation, Disaster Recovery as a Service implementation, and a Moodle Courseware upgrade or replacement.

#### ***FY2017 Plans***

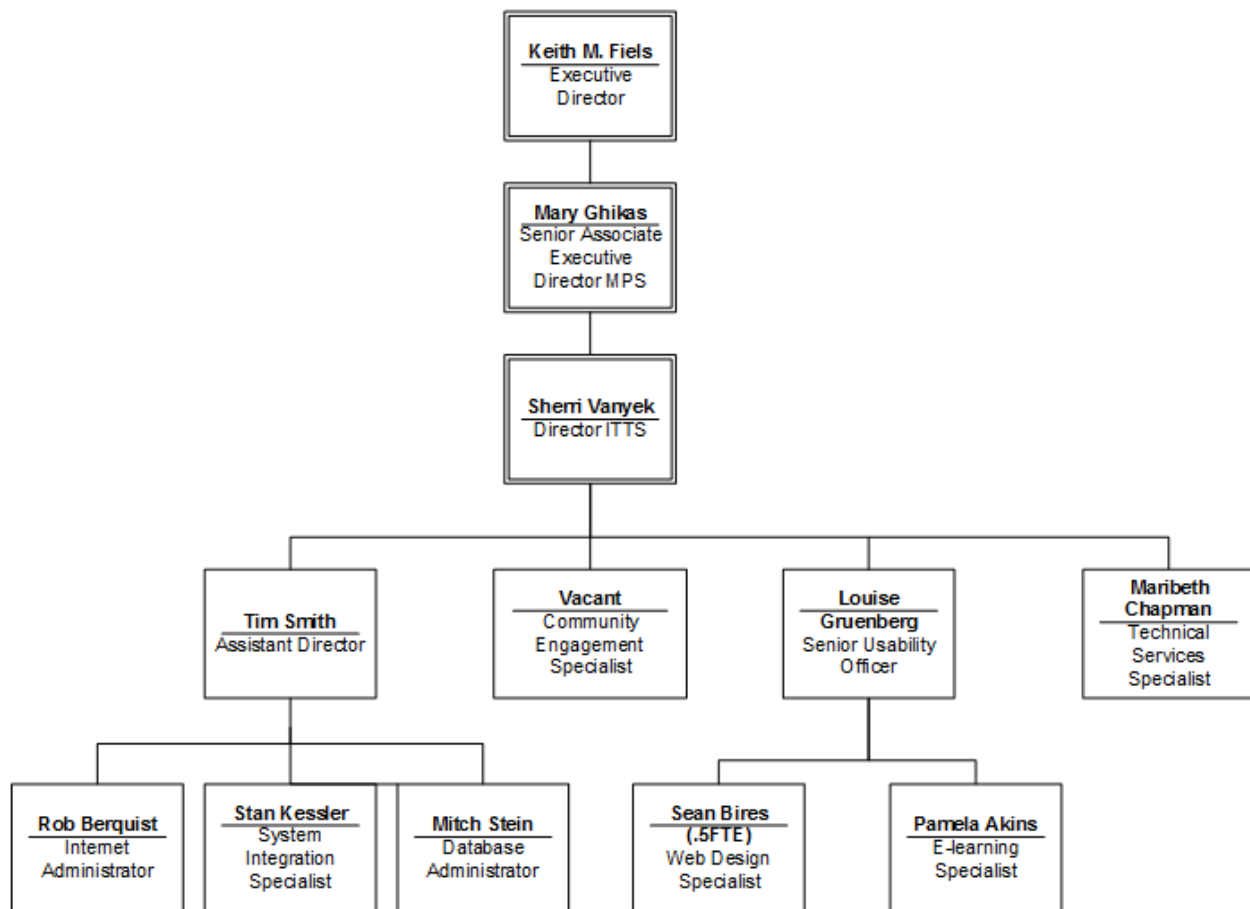
Looking at both internal staffing and external contracts, ITTS remains significantly stretched – within an ALA General Fund that is over-stretched. The Center for Association Leadership recommends 10-17% of total budget. ALA is not at that point nor does it seem likely to reach that point soon, despite significant efforts over the past years to increase ITTS resources. During a period of significant financial constraint, ITTS was a high priority – but remains under-resourced. A solution must be found. This may require some combination of actions. The complexity of ALA's ITTS environment derives directly from the

complexity of ALA's organizational and programmatic structure. The solution may also need to call upon that complexity.

## 16. ITTS ORGANIZATIONAL STRUCTURE

### *Current Landscape*

**American Library Association  
Information Technology & Telecommunication Services  
Organizational Chart  
8/20/2015**



In addition to the 9.5 ITTS staff listed above, ITTS contracts with PC Connection for outside consultants to manage our network, server, and workstation infrastructure. These outside consultants are needed to keep the day to day operations going and to move forward on our major initiatives.

The current contract with PC Connection covers the following services:

- Migration of Physical Servers to Virtual Servers
- Implementation of Microsoft Active Directory
- Network Resegmentation

- Configure Domain Name Resolution (Internal DNS)
- File Server Upgrade and Migration
- Print Services Management
- General Server Maintenance
- Server Firmware updates as appropriate
- Server Operating System Upgrades
- Server Security Patching
- Event Log analysis
- Tuning and Adjustments
- Planning and Design
- Consulting
- New Server Builds
- Disk expansion
- Real Time Monitoring of Server Up/Down Status
- Server Hardware Upgrade
- Server Based Application Updates
- File System Space Monitoring
- Regularly Scheduled File System Maintenance
- Data Backup Management
- General PC/Laptop Maintenance
- Firmware Updates as appropriate
- Operating System Updates
- Security Patching
- Tuning and Adjustments
- Planning and Design
- Consulting
- Desk Side Client Support
- Application Installation
- Hardware Diagnosis/Repair
- New Asset Deployment

ITTS also contracts with BK Solutions for a part-time consultant to upgrade and modify miscellaneous web applications identified in the member resources section of this report.

#### *Vision for ITTS Organizational Structure (FY 2016)*

No new additional staff was allocated in the FY 2016 budget. ITTS will continue to contract with PC Connection and BK Solutions for outside consultants to keep the day to day operations going and to move forward on our major initiatives.

#### *FY2017 Plans*

Resource planning for FY 2017 will take place in December 2015 (FY 2016).

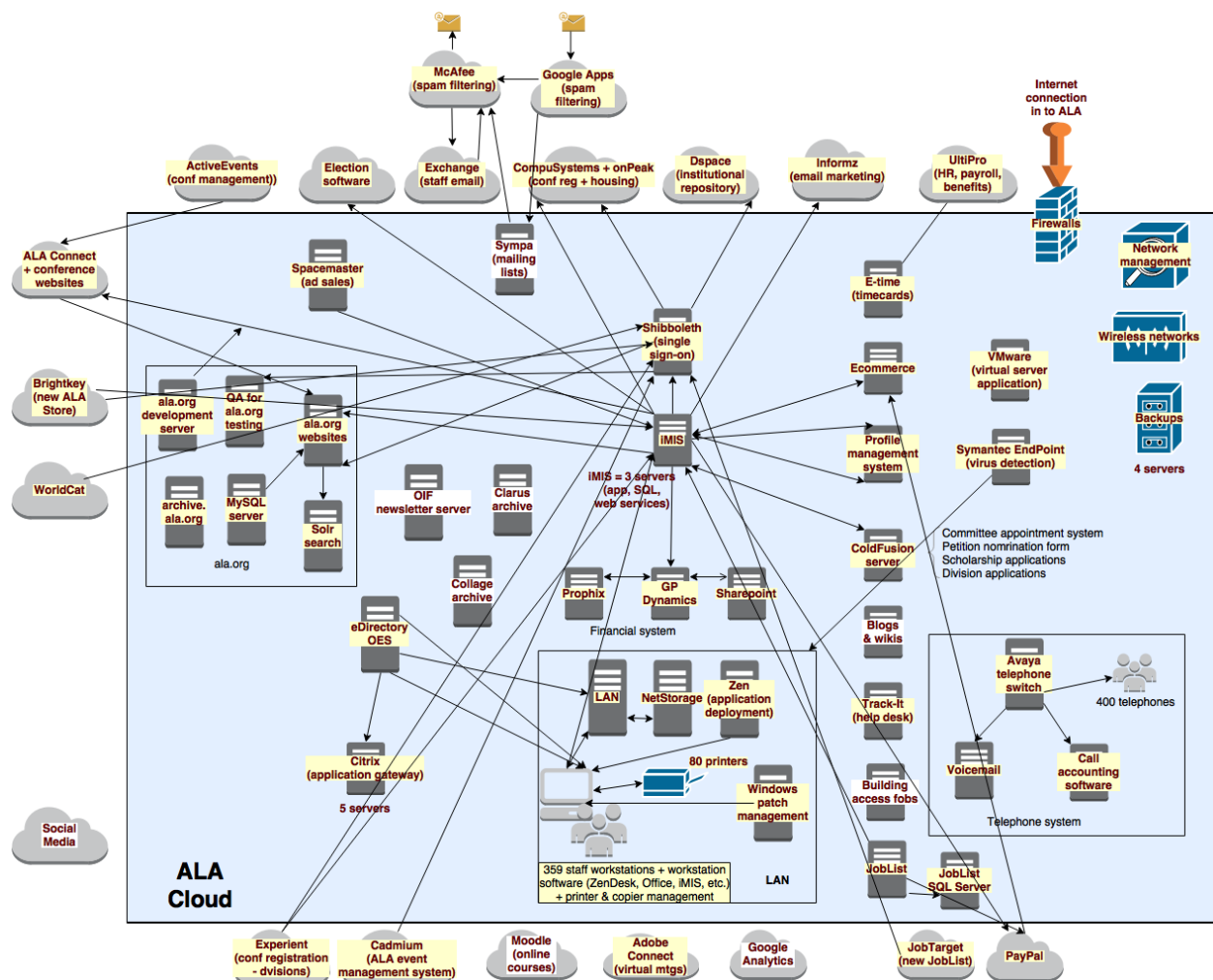
## 17. RISK ASSESSMENT

As stewards of the Association's technology infrastructure, ITTS staff constantly assess risk and balance potential consequences versus budget. The following risks are cause for concern and are current impediments to the Association meeting the needs of its members and staff.

### *Staffing/Capacity*

There are currently nine full-time and one part-time staff positions in ITTS. In July 2013, we were forced to lay off two staff members due to budget constraints. These layoffs, combined with our inability to add staff over the past several years, have caused us to rely on a single staff member's expertise in almost every area of service. We were able get one the two of the positions that we lost back in FY2015. We were unable to add any additional positions in FY2016.

ITTS staff currently manage consultants at 31 firms to support our infrastructure which includes a vast array of software applications that provide 58 distinct major services. This management function includes developing specifications, coordinating the work of the consulting firm/consultants, and maintaining effective relationships with those firms and consultants. ITTS also handles the day to day operations and answers the many help desk tickets that come in every day from ALA members and staff. We provide first level troubleshooting and if an issue can't be resolved internally, we have to bring in one of the 31 firms and work with them to fix the problem. *Anything beyond first-level troubleshooting is already outsourced for 90% of the systems for which ITTS has some or all responsibility for maintaining.*



All of the systems highlighted in yellow are outsourced for anything beyond first-level troubleshooting

ITTS is also called upon to provide much one-on-one assistance for staff working to master new responsibilities. A typical day for our e-learning specialist/trainer includes multiple requests for immediate assistance from personnel who have learning and troubleshooting needs related to serving members and maintaining critical parts of the operation.

**Security/Privacy**

ALA is always exposed to the continuous threat of intrusions – as are many organizations - with one consequence being the possible theft of confidential data both about members and the Association itself. Security statistics for the past 36 months are as follows:

- 605,308,704 traffic/conversation scans were performed.
- 143 vulnerability scans were performed.
- 415,972 attacks were blocked.
- 364,581 attacks (based on IP reputation) were blocked.
- 6,312 viruses were blocked.
- 4,518 malware were blocked.

However, upgrades and patches to our server and workstation operating systems are constantly needed to secure and protect our systems environment. Reduced staffing levels have impeded our ability to stay current on all releases of our infrastructure (firmware, operating system, database versions, software applications, and other services), increasing the risk of security breaches.

Regular security audits remain critical to the health of the Association's technology infrastructure.

An example of the exposure to cyber threat for which ALA is at risk occurred in January 2014 when a version of the CryptoLocker virus was found on our network and four workstations, despite our current implementation of Symantec EndPoint virus detection software. This ransomware trojan forced us to restore data from a backup made prior to the virus outbreak. ALA was shut down for half a day and one day's worth of work was lost in the crucial weeks preceding the Midwinter Meeting. Regular testing of backups and restores is a challenge to resources, but it is critical.

### *Proper Maintenance of Data*

ALA has over 300 databases that make up our external and internal infrastructures, all of which require ongoing maintenance and upgrades. Backing up these databases is essential to keeping records about our member/customer transactions and our 139 years of institutional knowledge. This is, again, a resource challenge.

### *Siloed Expertise/Management*

Every full-time staff person in ITTS is now responsible for managing specific, individual resources without sufficient cross-training for backing up that expertise. In each case, the ITTS staff member is responsible for first-level troubleshooting. If s/he cannot resolve the issue themselves, they must manage the intervention of a consultant to fix the problem.

This creates bottlenecks when someone is responsible for multiple systems, especially enterprise-wide systems that affect all of ALA. For example, prior to FY2015 we had one person on staff who fully understands how iMIS is configured, how it connects to all of our other systems (both external and internal), and our network topology.

This same person is also the internal expert for the configuration and maintenance of ALA's financial management system. These are complex systems critical to the operation of the Association. The additional ITTS position allocated in FY2015 helped us to reduce some of our dependencies on this single individual. The new staff person is becoming conversant with ALA's complex systems, the customizations ALA requires and the connections between critical systems, and is able to both troubleshoot and appropriately utilize outsourced resources. Things have improved but this person is still learning.

### *Improving Versus Maintaining*

Whenever ITTS implements new software, the first step is always figuring out how to first customize it to replicate ALA's pricing rules, nested organizational structure, and unit-based permissions. This is true regardless of whether the software is hosted internally or externally. *Only then* can we work with the

vendor to figure out what is still possible within the new limits the customization has placed on the system's capabilities.

Continuing down this path of "customize first" affects our ability to improve our digital infrastructure and services because so much effort must be devoted to maintaining the complexity.

### ***Barriers to Implementing Off-the-shelf Software***

Nowhere is this threat of the status quo more apparent than in the five attempts made to implement "off the shelf" software packages during the last two years. In just this short timeframe, ITTS spent considerable resources implementing systems that were purchased because theoretically they would work for us "out of the box," thereby reducing costs and implementation time.

1. **Cadmium/EventScribe** – ALA contracted with this company to record conference sessions and make them available to attendees using ALA's authentication system. The service was to be completely outsourced, with the exception of the connection to Shibboleth for authentication. While the recordings process went fine and Shibboleth was implemented, the release of the 2013 Annual Conference recordings was delayed by six months while ITTS' Senior Usability Officer worked extensively with the company to make the website and recordings ADA-compliant. This attention to accessibility is very important to the Association and its members. The need to educate external firms about accessibility and to rigorously test their products for ADA-compliance is now incorporated in planning for use of any outsource services.
2. **CompuSystems/onPeak** – ALA switched conference registration and housing vendors in FY13, requiring new connections to both iMIS and Shibboleth. Again, while the services themselves were completely outsourced and housed on the vendors' servers, ITTS staff spent months discovering and diagnosing registration issues with the pricing rules and working with the vendors to fix accessibility issues. In preparation for FY2015 conferences, registration pricing rules have been simplified and accessibility issues have been reviewed, but ITTS continues to have to test and ADA-compliance for each conference opening and work with the vendor to resolve issues.
3. **CSI Profile Editor** – In order to unify ala.org and ALA Connect profiles before the new ecommerce system is implemented, ITTS purchased software that is specifically designed to let association members edit their iMIS profiles. Making the product work effectively with the ALA customized iMIS installation has been challenging. Additional customizations have been required, pushing back the launch date.
4. **eShow** – See section on "Conference Management System." AASL, ACRL, and PLA all use this software for their conferences and events, but ALA was unable to work with the company due to the customizations required by our pricing rules, organizational structure, and complicated approval processes. The Senior Associate Executive Director, Conference Services, ALA Divisions and other units are currently working through process simplifications to enable ALA to move forward with a comparable product in FY2015-2016.



5. **Brightkey** – Publishing tried to implement a new books, graphics, and elearning online store in FY2015. The new vendor has spent the last ten months working on the project and has been unable to deliver. A decision was made to move the elearning store to a different vendor due to inability of the product to meet our needs.

As we look at future directions, it is imperative that ALA reach a point where ITTS can, at least to some extent, hack software products to make them better, easier to use and/or innovative – not just to replicate ALA’s complexity. Working together, we are making steps in that direction – and it is important that these efforts continue. This will continue to require the rethinking now happening across the Association.

## 18. RECOMMENDATIONS FOR ACCELERATING ALA’S CAPACITY

In order to be nimble and agile enough to meet the needs of modern members and professionals, ALA must invest in its digital infrastructure, the backbone of 21<sup>st</sup> century services.

### *Needed IT Staffing*

Four additional full time staff or equivalent consultants are recommended in order to meet ALA’s growing IT needs. The positions include:

- **Project Manager**  
This individual will be responsible for managing the various systems implementations from inception to completion. They will work with staff and members to manage time sensitive projects.
- **Server Administrator**  
This individual will support the ALA server farm currently consisting of over 120 virtual servers. Goals include development of an upgrade and maintenance strategy, replacement of obsolete servers, and consolidation of remaining physical servers onto virtual platforms. All of this work is currently outsourced to one person in one external company, which greatly inhibits our ability to implement new services.
- **Content Management System Administrator**  
As the ALA web presence has continued to grow, our need for staff to support that presence has grown. ITTS needs a position to provide assistance on the implementation of our new E-commerce; gather business requirements for new enhancements to the ALA website and translate them into functional Drupal modules; install new or modify existing modules based on these requirements; create new microsites; implement templating; deployment and workflow solutions based on requirements; research and apply security updates on a regular basis to Drupal (the CMS), and to over 100 Drupal modules, of which 46 are customized. All of this work currently falls on two staff members as a small fraction of their duties, which also includes managing the consultants who maintain the code for the ALA website. Providing more support

for ALA's website would improve functionality for members and staff.





- **Senior Web Developer**





This individual will assist in the Association's initiative to revamp its growing website and be the lead developer of database-driven applications such as online continuing education, scholarship applications, and online publishing. This individual will create, deploy, and document standards-based web applications. All of this work is currently done by one-and-a-half staff members with the assistance of additional consultants when budget allows. Adding capacity for web application implementations would accelerate implementation of revenue-generating enhancements.




### *Continue Reducing Complexity*


ALA needs to continue conversations to reduce complexity wherever possible. The recent discussion to reduce the pricing rules from 1,629 to 997 is a good start, but new ways besides "membership types" must be found for incentivizing membership. ALA has to encourage this kind of simplification at all levels if it wants to save money on IT implementations and better integrate with the outside world.

## 2. Appendix 1: ITTS Training Support

System /Software	What is it? How does ALA use it?	Show Staff how to:	Show Member(s)/ Volunteer(s) how to:	Stats
<b>Adobe Connect</b>  Adobe® Connect™ ala.adobeconnect.com	A web-conferencing platform used to: <ul style="list-style-type: none"> <li>• Provide webinars to staff, members and the public</li> <li>• Host web meetings (staff and members)</li> <li>• Market Events, register attendees and follow-up with registrants</li> </ul>	<ul style="list-style-type: none"> <li>• Create, host, manage, market webinars; link to events</li> <li>• Facilitate meetings, rehearsals &amp; webinars</li> <li>• Coach presenters and co-hosts on the tool</li> <li>• Setup Audio for blended broadcasts</li> <li>• Troubleshoot participant, event and room issues</li> </ul>	<ul style="list-style-type: none"> <li>• Present, host, manage, webinar rooms;</li> <li>• Present material and navigate to/within the room</li> <li>• Explore pods for higher engagement: Polls, Chat, Video, Whiteboard, Web Links; Breakouts, Layout options</li> <li>• Coach participants, troubleshoot issues, help fellow users; check connection strength</li> </ul>	<b>Since 9/2014:</b> 85 Hosts in 469 rooms  <b>Since 'Forever' (9/2012):</b> 178 Hosts in 1339 rooms
<b>ALA Connect</b>  connect.ala.org New platform coming soon: 	Centralized space where ALA groups work together online. A place where members can collaborate privately, yet post public group work in one community. <ul style="list-style-type: none"> <li>• Features a visible, profile that displays member interests, as well as group participation.</li> <li>• Promotes networking</li> <li>• Share/find opportunities</li> <li>• Mentors /protégés connect</li> <li>• See more:  <a href="http://connect.ala.org/about#sthash.EU9HEMLi.dpuf">http://connect.ala.org/about#sthash.EU9HEMLi.dpuf</a> </li> </ul>	<ul style="list-style-type: none"> <li>• Login and credentials</li> <li>• Navigation – find groups:               <ul style="list-style-type: none"> <li>◦ Committees/Communities</li> <li>◦ Browse by subject, new, unit and all</li> <li>◦ Profile</li> </ul> </li> <li>• How to contribute to a group               <ul style="list-style-type: none"> <li>◦ Add Discussion/Online Doc</li> <li>◦ Working with Drupal 6 WYSIWYG</li> <li>◦ Making items public</li> <li>◦ Add poll</li> <li>◦ Add chat</li> <li>◦ Add Files, Events &amp; Pictures</li> <li>◦ Add/Remove Members</li> </ul> </li> <li>• Opportunity Exchange</li> <li>• Mentor Connect</li> <li>• Where to find more help</li> </ul>	<ul style="list-style-type: none"> <li>• Login and credentials</li> <li>• Navigation:               <ul style="list-style-type: none"> <li>◦ Committees/Communities</li> <li>◦ Browse by subject &amp; all</li> <li>◦ Profile</li> </ul> </li> <li>• How to contribute to a group               <ul style="list-style-type: none"> <li>◦ Add Discussion/Online Doc</li> <li>◦ Working with Drupal 6 WYSIWYG</li> <li>◦ Making items public</li> <li>◦ Add poll</li> <li>◦ Add Files, Events &amp; Pictures</li> </ul> </li> <li>• Mentor Connect</li> <li>• Where to find more help</li> </ul>	<b>Since 9/2014:</b> <ul style="list-style-type: none"> <li>• Training schedule for the fifty 2015 Emerging Leaders</li> <li>• Trained 60 Staff members (combined new hires and skill-share session)</li> </ul>
<b>Drupal</b> 	Web content editing software for ala.org and the 60+ microsites on this domain.	Live in-person, remote and self-paced learning options web edits in Drupal 7, which include: Where to find help, Basic page creation, format and edits, SEO, Taxonomy, accessible images &	<ul style="list-style-type: none"> <li>• Remote course offered every 3 weeks on Basics with Committees</li> <li>• Self-paced learning using the</li> </ul>	<b>Since 9/2014:</b> <ul style="list-style-type: none"> <li>• 137 users trained via live, self-paced or remote sessions</li> </ul>

<a href="http://www.ala.org">www.ala.org</a>		tables, restricting access, inserting media, uploading images, redirection, links, anchors, Committee pages, Press Release work flows, Left Navigation, Menus, Blocks & Navpods	Drupal Sandbox <a href="http://www.ala.org/support/drupal">http://www.ala.org/support/drupal</a> <ul style="list-style-type: none"> <li>Advanced training on demand per each request for additional access</li> </ul>	
<b>Google Analytics</b>  <a href="http://google.com/analytics">google.com/analytics</a>	How to find the statistics of visitors on ala.org or any of the 60 microsites.	Live and Self-paced learning on ala.org/support. Members login to see credentials to enter the google account.	Self-paced learning on ala.org/support. Members login to see credentials to enter the google account.	Since 9/2014: 2 users
<b>iMIS</b>  imisapp_imis_live	Membership management database. In addition to contact information for every member, we track almost every point of engagement through Activities. Staff needs to report member rosters [new, renew, drops, reinstates], committees, webinar & event attendance, donations, purchases, web access and more.	<ul style="list-style-type: none"> <li>Casual users can Find records, understand basic Member Management (paid thru Billing and some Demographics), work with Committees and run standard reports</li> <li>Full users are made capable of the Casual users tasks, but can add Prospects to the database as well as create new committees in iMIS. Some have access to the Intelligent Query Architect, if requested and training is completed.</li> <li>Training also manages the recovery of iMIS licenses once staff have terminated.</li> </ul>	Members do not have access to iMIS	Since 9/2014: New Staff trained and licensed: 16
<b>Informz</b>  <a href="http://ala.informz.net/Admin31">ala.informz.net/Admin31</a>	E-mail marketing to ALA members.	<ul style="list-style-type: none"> <li>Create simple templates or convert their Mail Chimp templates into Informz.</li> <li>Assemble a mailing; include opt-out form, work with html and text versions of content</li> <li>Import recipients / Create Compound list to exclude Opt-Outs</li> </ul>	Members can get access, but training has not been requested for members at this time.	Since 9/2014: Informz logins created: 23
<b>Staff Resources on Support</b>  <a href="http://ala.org/support">ala.org/support</a>	Several resources formerly located on the ALA's Knowledge Management Portal (KM) were moved to the support site. After a reorganization of the Support site, several sessions held, calls taken, and emails answered in regard to the new location of staff resources including:	<ul style="list-style-type: none"> <li>We cover links to resources such as HelpDesk/Track-IT, ALA Support Site, eTime, Postini, Ulti-Pro. We look up their record in the Staff Directory and update it in class. From there we test a few searches Inside ALA as we explore the Virtual ALA Library and other unit resources.</li> </ul>	Members do not have access to iMIS	Since 9/2014: Staff: 76  NOTE: numbers are higher due to the move from KM to Support for several sources which were all covered with 57 of the new hire/interns/contractors/temps.

t	<ul style="list-style-type: none"> <li>• ALAIR and archiving how-to</li> <li>• Conference stats &amp; planning</li> <li>• Digital Library link &amp; how-to</li> <li>• Finance links, forms &amp; resources</li> <li>• HR Policies &amp; Resources</li> <li>• Library Resources</li> <li>• Membership stats</li> <li>• Press Release &amp; Publicity</li> <li>• Staff Change Form</li> <li>• Staff directory (w/ images)</li> </ul>			
 <b>Moodle</b> <b>classes.ala.org</b>	<p>Full Learning Management System (LMS) for ALA distance learning courses. Teachers, Students and Course activities come together for a course offered offer a series of sessions getting facilitator feedback, grades, assignments and more.</p>	<ul style="list-style-type: none"> <li>• Create course shells for facilitators</li> <li>• Create enrollment keys</li> <li>• Request course Chat rooms</li> <li>• Troubleshoot student issues</li> <li>• Post chat transcripts to the course</li> <li>• Support course leaders with group functions</li> <li>• Refer teachers to the Moodle help documents for self-paced learning</li> <li>• Demonstrate uploads and how-to create course elements, assignments, activities and feedback entry</li> </ul>	<ul style="list-style-type: none"> <li>• Refer teachers to the Moodle help documents for self-paced learning</li> <li>• Demonstrate uploads / how-to create course elements, activities, assignments and feedback entry</li> <li>• Troubleshoot student/teacher issues with registration, login</li> <li>• Grant access to course</li> <li>• Field questions (usually in reference to version difference— we are 8 iterations behind)</li> </ul>	<p>Since 9/2014:  <b>Staff: 5</b>  <b>Members: 8</b>  <b>Fielding: 99 emails/track-its /calls on Moodle issues</b></p>
<b>Microsoft Office (&amp; McAfee)</b> 	<p>Skill share sessions on Outlook, Excel PowerPoint and Word on productivity issues; sharing shortcuts and promoting the creation of accessible documents</p>	<ul style="list-style-type: none"> <li>• Live and Remote sessions covering Excel basics, Auto-fill, Print Setup, Subtotals, Pivot Tables. Outlook discussion included folder sharing, Book a Meeting room using Calendar and Mail Clean-up and Archive</li> <li>• Postini upgrade to McAfee</li> </ul>	<ul style="list-style-type: none"> <li>• Not currently offered to Members; attendee numbers higher due to Postini upgrade to McAfee Control Console</li> </ul>	<p>Since 9/2014:  <b>Session attendees, e-mail, calls and TrackIT questions: 88</b></p>
<b>Finance/Budget System</b> <b>Prophix</b> 	<p>Support for Accounting for the delivery of training on our Financial tracking software.</p>	<ul style="list-style-type: none"> <li>• How to enter Budget numbers, including fill-across options;</li> <li>• Workflow of budget processing and communicating roles for access</li> <li>• Entering notes and how SQL report will be created to display</li> <li>• Exporting Prophix data to Excel</li> </ul>	<ul style="list-style-type: none"> <li>• Members have no access to Prophix</li> </ul>	<p>As of 8/2015:  <b>(Since Brad Geene in Finance has taken over the delivery of Prophix training, the only support required is help with screencasts, and blocking the Training Room calendar.</b></p>

<p><b>Sympa</b></p>  <p><a href="http://lists.ala.org/sympa">http://lists.ala.org/sympa</a></p>	<p>Sympa is our list management software. Its name, which is an acronym for Systeme de Multi-Postage Automatique (i.e. Automatic Mailing System), also means "nice" (friendly) in French.</p>	<ul style="list-style-type: none"> <li>• Request password and login</li> <li>• Create a list</li> <li>• Edit an existing list, (add/remove members)</li> <li>• Search Archives and Profile settings</li> <li>• Troubleshooting high bounce rates</li> <li>• Updates to the self-paced learning pages on the support site</li> </ul>	<ul style="list-style-type: none"> <li>• Remote sessions have been offered to members list owners this year</li> <li>• Member questions does not include queries during Sympa upgrade</li> </ul>	<p>Since 9/2014:</p> <ul style="list-style-type: none"> <li>• 2 Sessions:</li> <li>• 7 Staff</li> <li>• 37 help requests</li> <li>• 12 Member questions</li> </ul>
<p><b>New Hire Orientation</b></p>	<p>Technology orientation including familiarity with Staff resources, Digital Library on support and ALA Connect</p>	<ul style="list-style-type: none"> <li>• Login to Network</li> <li>• Login OWA; change outlook password;</li> <li>• Network folders and access</li> <li>• Access TrackIT</li> <li>• Access Voicemail/ Create password</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	<p>57 interns, new hires, contractors and new users</p>