

Library IT Annual Report– FY17 Summary

Following is a brief, high-level summary of accomplishments, challenges, and goals for the various Library IT sub-groups. Detailed reports for each group are appended after the summary.

Selected accomplishments from FY17

Help Desk

- Saved \$5000 collaborating with WNS and Veterinary Medicine Library to implement self-checkout station with Voyager software.
- Solicited feedback from library staff for staff and IT website through card sort activity and focus groups, respectively.
- Coordinate use cases for and subsequent research, testing, and selection of a system to manage Library staff (intranet) content
- Co-managed the Library Computing Technology Allocation Program (CTAP)

Workstation and Network Support (WNS)

- Replaced more than 100 Library faculty, staff and public access workstations via hardware lifecycle management, leveraging Microsoft SCCM to image and deploy applications to new workstations
- Replaced NetInfo technology management system with Library Inventory Database (LID), and fully migrated Library DHCP service to Technology Services IPAM system.
- Moved Literatures and Languages to Room 200 and Classics to Room 225; moved CAM to Room 1; moved CMS to Oak Street 3rd floor
- Refreshed all public printers in Library spaces.
- Co-managed the Library Computing Technology Allocation Program (CTAP), including developing recommended standards, meeting with Library Faculty and AP staff, and successfully fulfilling 36 requests

Infrastructure Management and Support (IMS)

- Inventory and DHCP database application refresh completed.
- Implementation of service and performance monitoring (Nagios).
- All test and development servers migrated to the Technology Services Virtualization shared service.
- Retirement of Library managed systems and realization of cost savings, including Virtualization cluster and SAN (average of \$75,000 per year over 5 years), Red Hat licenses (\$6,000 per year), VMWare licensing (\$10,000 per year), and VEEAM (\$6,000 per year)
- Support for new Library initiatives, including Scholarly Communications and Publishing (IOPN and PWW), Digital Humanities in a Box (DHBox), Content management systems (WordPress), and Illinois Experts (Elsevier Pure)
- Development of service life cycle processes and service catalog

Web Team

- Migration of units/content into WordPress, including completion of Phase 1 and Phase 2 migration projects
- Development of WordPress themes and plugins for use in WordPress Web CMS Project
- Refinements to proxy approach to serve WordPress content from www.library (the reverse proxy)

- Iterative improvements for usability and accessibility for the Library Gateway.
- Improvements of workflow management processes for code management, testing, optimization, versioning, and deployment for Gateway and WordPress content.

Software Development Group

- SDG staff member Robert Manaster was transferred to the Infrastructure Maintenance and Support (IMS) group
- Except for a few select projects, the SDG has been mostly quiescent the past year.
 - The primary software development project was probably the Library staff and unit directory database used for the web migration. This project was also spun off as a separate database for the campus Siebel Center for Design (SC4D).
 - In addition, two specialty database applications for International and Area Studies were completed and moved to production: the Conde de Montemar Letters and the Uzbek National Bibliography.

Scholarly Communications and Repository Services

- All of the applications and services supported by the SCaRS team saw significant improvements in the past year:
 - The Digital Library and IIF image servers were developed to the point that they have become the primary public access mechanism for all digital content managed by the Library
 - CONTENTdm was retired after all collections were successfully migrated to the new Digital Library application
 - The Illinois Data Bank was launched as a University-wide service for the deposit of research data sets.
 - The Medusa Preservation system saw steady improvements, including significant changes to the storage infrastructure with a major migration of content to the new NCSA Active Data Storage (ADS) system
 - Backup of all IDEALS files to Medusa and improvements to tools in support of batch ingest
 - Developed a version of Vireo to support undergraduate thesis deposit
 - Significant work in support of the Library's publishing initiatives, including support for undergraduate journals, and the establishment of the Illinois Open Publishing Network including support for multiple publishing software systems and platforms.

Challenges and Gaps

- Onboarding and managing hourly workers (Academic Hourly, student assistants, Extra Help) to fill the growing demand for IT services while retaining high quality of customer service;
- Working with strict timelines for project completion- including one Storage Area Network (SAN) retirement required before end of FY17
- Requirement to support a growing catalog of services with increased uptime and support expectations;
- Ongoing procurement challenges related to reliable and timely acquisition of hardware and software;
- Working with multiple service owners to better secure and support database driven applications;
- Intermittent unplanned critical projects requiring reassignment of unit resources to debug and address issues;
- Multiple overlapping projects/timelines for project related to the retirement of openCMS and transition to WordPress

- Finding resources to focus on high-priority Library initiatives, such as IRC, while also keeping up with the demand for smallish specialty software projects, especially those which are grant-funded or are pursuing grant funding.

Key goals and initiatives for FY18

Help Desk

- Complete migration of library staff content to library staff website.
- Explore ways to derive meaningful insights from OTRS ticket data.
- Explore sustainable solutions for keeping service commitment information up-to-date.
- Coordinate evaluation of effectiveness and value for emerging technologies within the Library.

Workstation and Network Support (WNS)

- Continue hardware (staff workstation and laptop) refresh cycle as budget allows.
- Complete search for two IT Specialist (AP) positions.
- Install and implement new technology in the repurposed Room 220.
- Refresh public desktop hardware in Grainger, instructional space desktops in Undergraduate Library Room 291, and public desktops in SSHEL.
- Continue to identify and implement end point management service (SCCM) improvements to streamline the process of software deployment and updates;
- Evaluate and update technology equipment in Library public, learning, and conference spaces, including improvements to video conferencing, display, and scanning technologies.

Infrastructure Management and Support (IMS)

- *Improve automated configuration management*: one-click server deployment, all Windows servers under SCCM; all Linux servers under Puppet, standardized server builds, and server and application deployment work flows
- *Process improvement opportunities*: Medusa use cases, Tier 2 storage needs, Oak Street and Stacks transfers, service catalog processes, and file server needs
- *Support for advanced technology*: 2 factor authentication, SOLR, high performance computing, application and service containers, Amazon Web Services, mobile apps, NINJA database, and Data transformation algorithms
- *Data management*: self-service data requests from EDW, support of Tableau web editor, and managing data files, such as performance evaluations, job descriptions, and fund reports.
- *Security activities*: researching and implementing CIS standards, developing processes for incident management and change control, implementing intrusion detection in Library infrastructure, and developing log rotation and analysis.

Web Team

- Complete migration off of openCMS to WordPress web content management system
- Retire openCMS content management system and archive data
- Iterative improvements to WordPress CMS, including development of additional templates, custom post types, and plugins to offer additional features and functionality
- Implementation of centralized web logs, including automated log shipping, tracking, archiving, and analyzing at the request of library administration (FY17 focus/preference was given to WordPress related projects).

Scholarly Communications and Repository Services

- Improve the scalability and reliability of all SCaRS applications. This includes storage and application hosting. The team is investigating Amazon Web Services as a possible avenue toward improvement in these areas.
- Improve the communications and workflows especially between the SCaRS team and other groups around the Library
- Improve the user experience and usability of the IDEALS institutional repository.
- Publish projects currently in the pipeline, and continue to improve the Library's publishing tools and workflows.

Library IT Help Desk Unit Annual Report

Date: 08/25/17

Manager: Megean Osuchowski

I Unit Narrative

1. Major activities and accomplishments of the unit in FY17 (July 1, 2016 to June 30, 2017):
 - Saved \$5000 collaborating with WNS and Veterinary Medicine Library to implement self-checkout station with Voyager software.
 - Solicited feedback from library staff for staff and IT website through card sort activity and focus groups, respectively.
 - Set up Wordpress subsite for the library staff website and began migrating content from OpenCMS.

2. Major challenges faced by the unit during FY17:
 - Staffing changes: A new Academic Hourly, JP Goguen, was trained and began end of July 2016. Drew Kenton accepted a new position outside the library in March 2017. The Help Desk has been relying on additional desk coverage from WNS Academic Hourlies, Cailin Hawthorne and Leon Wilson until a replacement for Drew's position is hired.

3. Significant changes to unit operations, personnel, service profile, or service programs:
 - Staffing changes and dependence on temporary staff for a critical role in the unit.

4. Articulate (with appropriate examples) the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement:
 - Investigated library employee needs and CMS platforms for developing staff web content into a useful resource.
 - Led implementation of a new staff website soliciting feedback from library employees and coordinating prototyping with staff intranet working group.
 - Implemented a self-checkout circulation pilot at Veterinary Medicine Library to test viability of solution for low-staffed units.

5. Progress made on Unit Annual Goals for FY17 (as enumerated in the FY16 Unit Annual Report):
 - *Serve as liaisons to non-technical library faculty and staff, building relationships on shared Library knowledge and experience.*
 - Continue to serve as liaisons to non-technical library faculty and staff by participating in Library committees and engaging faculty and staff with tech-dependent projects.

- Continue to reach out to library units expecting new full-time employees and anticipate and prepare for the addition of incoming employees into new systems and university accounts.
 - *Continue iterative development of IT unit and Help Desk web presence.*
 - Organized and hosted two focus groups with 6 library employees total to obtain feedback on Help Desk web pages. Feedback will be applied to IT website on staff website in summer and fall of 2017.
 - *Continue Lync/Skype for Business and RightFax user education and support.*
 - No major changes to Lync/Skype for Business and RightFax accounts and options. Will continue to support these services as regular Help Desk procedure.
 - *Coordinate evaluation of effectiveness and satisfaction for emerging technologies within the Library such as data analysis and visualization tools.*
 - Piloted a Scholarly Commons data laptop in the loaner pool as an attempt to save costs on expensive data software such as Tableau and Nvivo. Some library employees did check out laptop for Tableau use.
 - *Collaborate with CARLI and ExLibris to solve reoccurring Voyager issues.*
 - No Voyager run-time errors have occurred for over six months, so this issue is now resolved.
 - *Explore viable options for improved software license management.*
 - Continue to work with the Business Office on license renewals, and Mike Nelson has been working on a reconciliation system .that includes software license purchases.
 - Organized a spreadsheet to document all IT license information including, cost, users, and renewal dates.
 - *Implement and migrate library content to library staff website.*
 - Reviewed CMS options with staff intranet working group and selected Wordpress as the best candidate.
 - With help from the Web Team and feedback from staff intranet working group, successfully created a Wordpress subsite for a Library staff website that includes its own homepage design and a template for staff unit homepages.
 - Began migrating content to new Wordpress subsite in June 2017, with expected completion date by the end of September 2017.
6. Articulate Unit Annual Goals for FY18:
- Serve as liaisons to non-technical Library faculty and staff, building relationships on shared Library knowledge and experience.
 - Continue iterative development of IT unit and Help Desk web presence.
 - Coordinate evaluation of effectiveness and satisfaction for emerging technologies within the Library.
 - Complete migration of library staff content to library staff website.
 - Explore ways to derive meaningful insights from OTRS ticket data.
 - Explore sustainable solutions for keeping service commitment information up-to-date.

II. Statistical Profile

1. Hardware and Software Support Profile

- Loanable technology inventory overview
 - 208 equipment loans processed in FY17
 - Loaner inventory
 - 1 Blackberry
 - 31 Laptops (21 PCs & 10 Macs)
 - 5 iPads
 - 1 Lync speakerphone
 - 1 Microphones
 - 9 Headset microphones
 - 6 Projectors
 - 1 Clicker set of 30
 - 2 Training headphones
 - 3 External CD/DVD burners
 - 3 Video cameras
 - 1 Portable video kit with tripod and mic
 - 2 Voice recorder kits
 - 3 Webcams

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants assigned to the unit in FY15.
 - Megean Osuchowski – Help Desk Coordinator
 - 1.0 FTE (7-1-16 to 6-30-17)
 - Helen Zhou – Electronic Access Specialist
 - Academic Professional
 - 0.5 FTE (7-1-16 to 6-30-17)
 - Drew Kenton – IT Support Associate
 - Civil Service
 - 0.2 FTE (7-1-15 to 3-17)
 - JP Goguen
 - Help Desk Support Specialist
 - Academic Hourly
 - 1.0 FTE (7-20-16 to 6-30-17)
- Provide overview of physical working space for unit:
 - Help Desk space includes 4 desks, a public workstation, a workstation configured to an off-campus network, and various storage resources at the west entrance to the Library IT offices in 424.
- Specify the amount of the unit's FY15 Student Assistant wage budget and Student Assistant FTE.
 - The Help Desk did not have a Student Assistant wage budget for FY17. Student Assistants were shared with WNS and paid with printing revenue.

3. User Services

- IT support requests (OTRS tickets)
 - Total tickets that were resolved or routed by the Help Desk: 3897
 - CTAP requests: 36

Library IT WNS Annual Report

Date: August 22, 2017

Manager: Lee Galaway

I Unit Narrative

7. Major activities and accomplishments of the unit in FY17 (July 1, 2016 to June 30, 2017):
 - Replaced more than 100 Library faculty, staff and public access workstations as part of our normal hardware refresh.
 - Fully migrated our DHCP service to Technology Services IPAM system.
 - Replaced NetInfo with Library Inventory Database (LID).
 - Installed six new collaboration tables in public spaces (5 in Undergrad, 1 in Grainger).
 - Moved Literatures and Languages to Room 200 and Classics to Room 225.
 - Refreshed all public printers in Library spaces.
 - Moved CAM to Room 1.
 - Moved CMS to Oak Street 3rd floor.
 - Continuation of Library ITs Computer Technology Allocation Program (CTAP)
 - Researched and recommended hardware standards
 - Purchased and configured new products for our CTAP demo pool
 - Met with CTAP clientele to determine what hardware best fits their needs
 - Successfully filled 36 CTAP requests

8. Major challenges faced by the unit during FY17:
 - Balancing daily trouble tickets with project work.
 - Leveraging hourly workers to fill growing demand for unit services
 - Training new staff and students while maintaining a high level of service.
 - Significant staff departures in FY 17 had a major impact.
 - Drew Kenton left in March.
 - Jason Harvey and Jackson Deremiah left in December.
 - Restructured the management of our student employees.
 - Students had previously reported to the Manager of WNS.
 - Daily assignments and responsibilities not always clearly defined.
 - New student staff report directly to the four full time WNS staff.
 - Two students for each full time staff member.
 - Daily assignments and responsibilities more clearly defined and documented.
 - Two Academic Hourly employee additions have helped significantly.
 - Cailin Hawthorne splits time with WNS, the Help Desk and Grainger.
 - Leon Wilson splits time with WNS and the Help Desk.

9. Identify significant changes to unit operations, personnel, service profile, or service programs:
- Full time staff turnover:
 - Drew Kenton left in March 2017
 - Academic Hourly employee turnover:
 - Jason Harvey left in December 2016
 - Jackson Deremiah left in December 2016
 - Student Hourly employee turnover:
 - Additions
 - Damian Behymer (9-26-16)
 - Cameron Belk (6-7-16)
 - Ashley Chung (10-10-16)
 - Andrew Deangelis (3-13-17)
 - Will Gerard (5-22-17)
 - Elaine Houha (8-26-16)
 - Sue Hwang (9-11-17)
 - Sameer Jain (3-29-17)
 - Sophia Marz (9-14-16)
 - Matt Norvell (6-9-17)
 - Rohit Thotakura (9-1-16)
 - Jacky Zhao (7-1-16)
 - Departures
 - Colin Althaus (8-27-17)
 - Dennise Arres (8-27-17)
 - Cameron Belk (12-31-16)
 - Sue Hwang (12-17-17)
 - Malcolm Range (8-27-17)
 - Susan Zhou (12-31-16)
10. Articulate (with appropriate examples) the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement;
- A fundamental responsibility of WNS is the support of the entire workstation and network infrastructure that is required by nearly every Library function.
11. Review progress made on Unit Annual Goals for FY17 (as enumerated in the FY16 Unit Annual Report);
- Investigate and deploy campus tools for network address management (IPAM).
 - *complete*
 - Continue work on NetInfo replacement. Substantial completion by end of FY17.
 - *complete*
 - Install at least 6 new collaboration tables in public spaces (5 in Undergrad, 1 in Grainger).
 - *complete*

- Move Literatures and Languages to Room 200 and Classics to Room 225.
 - *complete*
- Refresh all public printers in Library spaces.
 - *complete*
- Move CAM to Room 1.
 - *complete*
- Move CMS to Oak Street 3rd floor.
 - *complete*
- Install and implement new technology in the repurposed Room 220.
 - *Waiting for administrative direction*

12. Articulate Unit Annual Goals for FY18:

- Continue hardware (staff workstation and laptop) refresh cycle as budget allows.
- Complete search for two IT Specialist (AP) positions.
- Install and implement new technology in the repurposed Room 220.
- Refresh public desktop hardware in Grainger.
- Refresh desktop hardware in Undergrad Room 291 classroom.
- Refresh public desktop hardware in SSHEL.

II Statistical Profile

1. Hardware and Software Support Profile

- Hardware
 - 308 public access desktop PCs
 - 85 classroom PCs
 - 41 circulation desk PCs
 - 44 public access printers
 - 552 faculty/staff desktop units (PC and Mac)
 - 140 faculty/staff laptop units (PC and Mac)
 - 52 loaner laptop units
 - 116 networked staff printers (laser, receipt and MFP)
 - Thousands of network ports
 - 33 network subnets maintained
- Software
 - Windows 7
 - Adobe Acrobat Pro
 - CARLI Voyager 7.2.5 (Acquisitions, Catalog, and Circulation)
 - Internet Explorer
 - Google Chrome
 - Microsoft Forefront Virus Protection
 - Microsoft Lync 2013
 - Microsoft Office Professional 2013
 - Mozilla Firefox
 - Notepad++
 - OCLC Connexion
 - Windows Media Player

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants

assigned to the unit in FY17.

- Lee Galaway – Manager Workstation Network Support
 - Academic Professional
 - 1.0 fte
 - 7-1-16 to 6-30-17
 - Scott Clemens – Research Programmer
 - Academic Professional
 - 1.0 fte
 - 7-1-16 to 6-30-17
 - Eric Mosher – Research Programmer
 - Academic Professional
 - 1.0 fte
 - 7-1-16 to 6-30-17
 - Rhonda Jurinak – Technology-Enhanced Spaces Support Specialist
 - Academic Professional
 - 1.0 fte
 - 7-1-16 to 6-30-17
 - Drew Kenton – IT Help Desk Specialist
 - Civil Service
 - 0.5 fte
 - 7-1-16 to 3-10-17
 - Jason Harvey – Academic Hourly
 - Academic Hourly
 - 0.25 fte
 - 7-1-16 to 12-23-16
 - Jackson Deremiah – Academic Hourly
 - Academic Hourly
 - 1.0 fte
 - 7-1-16 to 12-15-16
 - Cailin Hawthorne – Academic Hourly
 - Academic Hourly
 - 1.0 fte
 - 1-17-17 to 6-30-17
 - Leon Wilson – Academic Hourly
 - Academic Hourly
 - 1.0 fte
 - 1-20-17 to 6-30-17
- Provide overview of physical working space for unit
 - Workstation Network Support personnel occupy approximately 387 square feet of office space in Room 424 of the Main Library. Additionally, 315 square feet in Room 424a, 135 square feet in Room 438 and 287 square feet in Room 19c are used for hardware storage and maintenance.
 - Specify the amount of the unit’s FY17 Student Assistant wage budget and Student Assistant FTE.
 - Colin Althaus (7-1-16 to 8-27-17)
 - Dennise Arres (7-1-16 to 8-27-17)

- Damian Behymer (9-26-16 to 6-30-17)
- Cameron Belk (6-7-16 to 12-31-16)
- Ashley Chung (10-10-16 to 6-30-17)
- Andrew Deangelis (3-13-17 to 6-30-17)
- Will Gerard (5-22-17 to 6-30-17)
- Elaine Houha (8-26-16 to 6-30-17)
- Sue Hwang (9-11-17 to 12-17-17)
- Sameer Jain (3-29-17 to 6-30-17)
- Sophia Marz (9-14-16 to 6-30-17)
- Matt Norvell (6-9-17 to 6-30-17)
- Malcolm Range (7-1-16 to 8-27-17)
- Rohit Thotakura (9-1-16 to 2-25-17)
- Jacky Zhao (7-1-16 to 6-30-17)
- Susan Zhou (7-1-16 to 12-31-16)

3. User Services & Assistance Profile

- IT support requests (OTRS tickets)
 - Approximately 2000 work requests were logged for WNS in FY17.
 - These work requests varied in scope from basic hardware/software trouble tickets to requests for new equipment and services.
- Classroom & instructional space technology support
 - Main Library Room 314
 - 15 student Desktop PCs
 - 1 Instructor Desktop PC
 - 1 overhead projection unit
 - UGL Room 291
 - 40 student Desktop PCs
 - 1 Instructor Desktop PC
 - 1 overhead projection unit
 - Integrated sound system
 - ACES Room 509
 - 30 student Desktop PCs
 - 1 Instructor Desktop PC
 - 1 overhead projection unit
 - Integrated sound system
 - Grainger IDEA Lab
 - Planar 16 display video wall with HP workstation
 - Presentation space with two 84" LED 4k displays and HP workstation
 - Presentation space with one 84" touch screen LED 4k display and HP workstation
 - 5 mobile units with HP workstation and 55" LED 4k displays
 - 5 mobile units with HP workstation and 65" LED 4k displays
 - 10 collaboration tables with 42" LED displays and video switching
 - 3 TAZ 3d printers
 - 2 mobile carts with 58" LED displays for patron laptop use
- Public service point support
 - 41 circulation workstations throughout the various unit libraries
- Public printing

- 44 public access printers
 - Associated print release stations
- Technology programs support
 - Scholarly Commons
 - 16 public access workstations (PC and Mac)
 - 4 faculty/staff workstations
 - 2 laptops
 - Media commons
 - 6 public access workstations (Mac)
 - 2 faculty/staff workstations
- Other public facing service support and training
 - Rhonda Jurinak hosted dozens of training sessions on the technology offered in Library conference rooms.

Library IT Infrastructure Management and Support (IMS) Annual Report

Date: 08/3/2017

Manager: W. Jason Strutz

I Unit Narrative

13. Major activities and accomplishments of the unit in FY17 (July 1, 2016 to June 30, 2017):
 - Inventory and DHCP database application refresh
 - Implementation of service and performance monitoring (Nagios)
 - All dev servers in Virtualization shared service
 - Retirement of Library managed systems, creating cost savings
 - Virtualization cluster and SAN – average of \$75,000 per year over 5 years
 - Red Hat licenses - \$20,000 per year
 - VMWare licensing - \$10,000 per year
 - Veeam - \$6,000 per year
 - Support for new Library initiatives
 - Scholarly Communications and Publishing, including IOPN and PWW
 - Digital Humanities in a Box
 - Content management system migration
 - Illinois Experts
 - Development of service life cycle processes and service catalog

14. Major challenges faced by the unit during FY17:
 - Strict deadlines based on warranty expirations for achieving infrastructure upgrades
 - Supporting a growing catalog of services with increased uptime and support expectations
 - Onboarding new staff
 - Working with multiple service owners to better secure and support database driven applications
 - Communication issues with collaboration partners, including Technology Services and NCSA

15. Significant changes to unit operations, personnel, service profile, or service programs:
 - Centralized virtualization support for test / development services
 - Increased collaboration with NCSA for repository storage and research data programs, particularly in support of the Illinois Data Bank

- Resignation of application support specialist Mary Winters-Meyer
 - Resignation of Tim Vruwink
 - Hire of IT Specialist as academic hourly Jason Colwell
 - Shift Robert Manaster from Software Development Group to Infrastructure Management and Support
16. Articulate the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement:
- Support of Oak Street and Stacks transfer applications and work flows;
 - Tracking of digital and physical assets for preservation;
 - Support for Medusa digital preservation, including Research Data Services and the Digital Collection Registry;
 - Support of campus Exchange email system shared inboxes and distribution lists;
 - Collaboration with Engineering IT Shared Services for administrative applications, including vacation/sick leave reporting, Banner account charts, and key inventory;
 - Improved support for collection and content management systems, including CONTENTdm, Omeka, Guide on the Side, and WordPress;
 - Support for Scholarly Communications, including IOPN and Publishing Without Walls;
 - Service on the Library Assessment Committee, the Staff Development and Training committee, and numerous subcommittees of CAPT;
 - Participation in campus-wide shared service initiatives for data center consolidation and server virtualization;
17. Articulate Unit Annual Goals for FY18:
- Improve automated configuration management
 - One-click server deployment
 - All Windows servers under SCCM; all Linux servers under Puppet
 - Standardized builds
 - Server and application deployment work flows
 - Process improvement
 - Medusa use cases
 - Tier 2 storage needs
 - Oak Street and Stacks transfers
 - Service catalog processes
 - File server needs
 - Support for advanced technology
 - 2 factor authentication
 - SOLR
 - High performance computing
 - Application and service containers
 - Amazon Web Services

- Mobile apps
- NINJA
- Data transformation algorithms
- Data management
 - Self-service data requests from EDW
 - Support of Tableau web editor
 - Managing data files, such as performance evaluations, job descriptions, fund reports
- Security activities
 - Implement CIS standards
 - Processes for incident management and change control
 - Implement intrusion detection in Library infrastructure
 - Log rotation and analysis

II Statistical Profile

1. Hardware and Software Support Profile

(describe the hardware, software, and application support provided)

- **Server and service counts**
 - 8 physical servers, down from 13 last year
 - 152 virtual servers (includes development, test, and sandbox/innovation servers)
 - 200 TB usable storage
 - Tier 2 – Equallogic storage (Raw/Usable TB): 264/187
 - Disk Arrays – PowerVault for Crash Plan backup (Raw/Usable TB): 16/13
 - 47 public-facing services
 - Some important patron-facing IMS supported services include:
 - The Library Gateway and all Library websites
 - Easy Search
 - Online Journals and Databases, the Journal and Article Locator, and the A-to-Z list
 - Interlibrary Loan and Document Delivery
 - Electronic Reserves including streaming media
 - The Voyager catalog
 - Public Printing
 - Wide and varied digital collections, including the Illinois Digital Newspaper Project, Illinois Harvest, Brittle Books, Kolb-Proust, and many smaller, specialized collections
 - Ask a Librarian and the Question Board
 - 27 services used primarily by Library faculty and staff
 - 33 services internal to Library IT in support of those other services
 - 256 databases (includes development, test, and deprecated databases)
 - 253 distinct websites / web applications

- **Ongoing large scale projects**
 - Database and web application audit
 - Windows configuration management
 - Printing shared service
 - Campus security audit
 - Tier 2 storage refresh
 - Medusa back-end optimization
 - Project management support

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants assigned to the unit in FY14.
 - W. Jason Strutz – Manager Infrastructure Management and Support
 - Academic Professional
 - 1.0 FTE (7-1-16 to 6-30-17)
 - Jon Gorman – Application Support Specialist
 - Academic Professional
 - 1.0 FTE (7-1-16 to 6-30-17)
 - Chuck Kibler – Network Engineer
 - Academic Professional
 - 1.0 FTE (7-1-16 to 6-30-17)
 - Mike Nelson – Data Analyst
 - Academic Professional
 - 1.0 FTE (7-1-16 – 6/30/17, vacant previous)
 - Jason Colwell – IT Specialist
 - Academic Hourly
 - 1.0 FTE (4-19-17 – 6-30-17, vacant previously)
 - System Administrator
 - Vacant
 - Approved in hiring plan summer 2017 to replace Tim Vruwink
- Provide overview of physical working space for unit
 - Infrastructure Management and Support personnel occupy approximately 400 square feet of office space in Room 424 of the Main Library; IMS maintains server and storage hardware in Main Library Room 416, and co-located space in the DCL data center;
- Specify the amount of the unit’s FY16 Student Assistant wage budget and Student Assistant FTE.
 - IMS did not have a Student Assistant wage budget for FY16, and no Student Assistants were employed.

3. User Services & Assistance Profile

- IT support requests (OTRS tickets);
 - 286 successfully closed tickets
 - 4 unsuccessfully resolved tickets

Library IT Web Team Annual Report

Date: 8/25/2017

Manager: Robert Slater

I Unit Narrative

18. Major activities and accomplishments of the unit in FY17 (July 1, 2016 to June 30, 2017):
 - Migration of units/content into WordPress, including completion of Phase 1 and Phase 2 migration projects
 - Development of WordPress themes and plugins for use in WordPress Web CMS Project
 - Refinements to proxy approach to serve WordPress content from www.library (the reverse proxy)
 - Iterative improvements for usability and accessibility for the Library Gateway.
 - Improvements of workflow management processes for code management, testing, optimization, versioning, and deployment for Gateway and WordPress content.

19. Major challenges faced by the unit during FY17:
 - Multiple overlapping projects/timelines for project related to the retirement of openCMS and transition to WordPress
 - Much higher demand on the Web Teams time than expected for assisting units to deploy/repair WordPress projects delivered in unusable condition by external developers
 - Much higher demand on the Web Teams time than expected for assisting/teaching external developers how to do their jobs
 - Changes to Library WP Project Team membership (onboarding of four Content Specialists)

20. Identify significant changes to unit operations, personnel, service profile, or service programs:
 - Onboarding of four new positions (Content Specialists, totaling 2.75 FTE)

21. Articulate (with appropriate examples) the ways in which the unit and/or its members contributed to Library-wide programs, including information services, instructional services, scholarly communications, assessment, collection management, digital content creation, staff training and development, diversity efforts, and public engagement;
 - A core operating principle of the Library IT Web Group is the support and coordination of web content managed by Library Faculty and Staff. Specific responsibilities include:
 - Create or modify existing web templates/plugins/etc. and other elements for use by library faculty and staff in various web management systems (including

the openCMS Content Management System, Campus WordPress [PIE] and Library WordPress instances, as well as several third-party solutions, both run locally and hosted, e.g.: Primo, SFX, Voyager, vuFind, LibGuides, etc.);

- Train, support, and troubleshoot problems in the use of the library web content platforms for all library faculty and staff, including the integration of third party code/resource into library managed web content (flickr, twitter, etc.);
- Provide iterative improvement for and maintain the library gateway (www.library.illinois.edu)
- The Web Team’s major contributions to library-wide programs this year focused mostly on information services, including:
 - The development and deployment of WordPress themes and plugins.
 - The migration of all library units to WordPress from openCMS
- The Web Team contributed to staff training and development by developing both internally focused and library staff focused documentation, as well as providing dozens of hours of training to hundreds of individuals

22. Review progress made on Unit Annual Goals for FY17 (as enumerated in the FY16 Unit Annual Report);

- Exceeded unit goal: “transition 25-50% of library units from OpenCMS to WordPress CMS.” All Libraries, and nearly all administrative/service units have been migrated.
- Made significant progress with the goal of “Iterative improvements to WordPress CMS, including development of additional templates, custom post types, and plugins to offer additional features and functionality,” including the development of 2 themes, 12 templates, 6 plugins, and dozens of short codes.
- No progress made on “Implementation of centralized web logs, including automated deposition, tracking, archiving, and analyzing,” at the request of library administration, focus/preference was given to WordPress related projects.

23. Articulate Unit Annual Goals for FY18:

- Complete migration off of openCMS to WordPress
- Retire openCMS
- Iterative improvements to WordPress CMS, including development of additional templates, custom post types, and plugins to offer additional features and functionality
- Implementation of centralized web logs, including automated deposition, tracking, archiving, and analyzing,” at the request of library administration, focus/preference was given to WordPress related projects.

II Statistical Profile

1. Hardware and Software Support Profile

(describe the hardware, software, and application support provided)

- Production systems which comprise the Library web presence (in order of amount of content/prominence- this list is certainly not exhaustive but covers 95% of the servers that house our Library IT managed web content)
 - Zola stack (dev, stage, and production): Apache server configured to run as a reverse proxy server to facilitate serving/branding content from a variety of library web

servers all from the same host name, <http://www.library.illinois.edu> (stage version will become part of the High Availability zola project this year)

- cms.library.illinois.edu (only accessible from a campus IP address): current Library Content Management System (OpenCMS 7.0.4, Apache Tomcat) – contains the majority of static (non-application) library web content on systems maintained by library IT.
- WordPress CMS stacks (wordpress, wordpress-stage, wordpress-dev and wordpress-sidecar, wordpress-sidecar-stage) for hosting new Library CMS content (non-sidecar stack) as well as specialty WordPress projects that don't meet the requirements or otherwise can't be hosted in the main WordPress CMS (sidecar)
- apache-ns.library.illinois.edu – an Apache web server that houses unit library non-CMS web content, mostly content written in PHP (and some PERL), that doesn't require https or auth/auth restrictions to accessing the content.
- apacheprod.library.illinois.edu (<https://www-s2.library.illinois.edu>) – an apache web server for hosting secure (https) content, mostly composed of content that requires access restrictions
- Number of publicly-accessible web pages (files of types .htm*,.doc*,.rtf,.php,.pl) and hit counts/analytics information
 - Gateway information (<http://www.library.illinois.edu/index.php>) (from Google Analytics).
 - Fiscal Year 2017 (July 1, 2016 – June 30, 2017):
 - Pageviews: 1,287,062
 - Fiscal Year 2016 (July 1, 2015 – June 30, 2016):
 - Pageviews: 1,510,855

2. Personnel

- List, by name, all faculty, Academic Professionals, civil service staff, and Graduate Assistants assigned to the unit in FY16.
 - Robert Slater – Technical Architect for Library Web Content
 - Academic Professional
 - 1.0 FTE (7-1-2016 to 6-30-2017)
 - Jemma Ku – Internet Applications and Systems Support Specialist
 - Academic Professional
 - 1.0 FTE (7-1-2016 to 6-30-2017)
 - William Weathers – Web Developer and User Interface Specialist
 - Academic Professional
 - 1.0 FTE (7-1-2016 to 6-30-2017)
 - Helen Zhou – Electronic Access Specialist
 - Academic Professional
 - 0.5 FTE (7-1-2016 to 6-30-2017)
 - Nicholas Ferraz de Oliveira – Content Specialist
 - Academic Hourly

- 40 hours/week (3-1-2016 to 6-30-2017)
 - Marissa Mullenix -- Content Specialist
 - Academic Hourly
 - 40 hours/week (3-15-2016 to 6-30-2017)
 - Alex Pate -- Content Specialist
 - Academic Hourly
 - 24 hours/week (3-15-2016 to 6-30-2017)
 - Matt Steele -- Content Specialist
 - Academic Hourly
 - 12 hours/week (3-15-2016 to 6-30-2017)
- Provide overview of physical working space for unit
 - The Web Team personnel currently occupy approximately 300 square feet of office space in Room 424 of the Main Library
- Specify the amount of the unit's FY14 Student Assistant wage budget and Student Assistant FTE.
 - The Web Team did not have a Student Assistant wage budget for FY14, and no Student Assistants were employed.

3. User Services & Assistance Profile

- IT support requests (OTRS tickets)
 - The Web Team answered more than 340 OTRS tickets in the past year;
 - This doesn't include the large volume of direct request received via email by Web Team Members or drop-ins at the Help Desk.
 - Support ranges from requests to do minor tasks (debug and then remediate minor JS/CSS/HTML issues) to training the requesting user how to make those fixes themselves, to request for complete (re)design of new web parts/pages/sites, to support for using third-party services (like Google Calendar for library unit hours management).
- Digital signage
 - The Library licenses the use of the CITES managed 4Winds Digital Signage System to manage content (and contract for support) for 18 digital signs at various location (although only 16 are currently in use).
 - The Web Team serves as the Library Administrators for the 4 Winds Server (developing and managing templates, scheduling content "buckets") as well as developing systems and workflows that allow librarians and staff to manage their own content (or content buckets) without necessitating making them administrators on the 4 winds software

Library IT: Scholarly Communications and Repository Services (SCARS) Annual Report

Date: August 31, 2017

Manager: Tom Habing

The Scholarly Communications and Repository Services (SCARS) division of Library IT is temporarily under the direction of the head of IT Tom Habing.

The group consists of Research Programmers Howard Ding, Seth Robbins, Colleen Fallaw, Alex Dolski, and Chris Maden.

- Howard Ding and Seth Robbins were appointed to the SCARS division in FY 2013-2014.
- Colleen Fallaw was hired onto the SCARS division in April 2015 as Research Programmer for Research Data Services.
- Alex Dolski was appointed to the SCARS division in May 2015 as Research Programmer for Digital Library Projects.
- Chris Maden joined the team in November 2015 as Visiting Research Programmer for Scholarly Communications and Publishing. Chris will be moving out of state early in the coming year, but will continue to perform his duties remotely.

II. Activities and Accomplishments

Scholarly Communication and Repository Services is made up of application developers responsible for analyzing, designing, implementing, and supporting software systems related to scholarly communication, repositories, and publishing at the Library.

The list of services created and/or maintained by this group includes:

IDEALS: The campus's Institutional Repository.

Vireo: The campus's Electronic Thesis and Dissertation (ETD) deposit system, a collaboration between the Library and the Graduate College.

OJS: The Library's publishing service for undergraduate research journals.

Illinois Data Bank: The repository service for the Library's Research Data Service.

Medusa Digital Library: A digital library application that provides public access search and browse interface for the Library's digital collections.

Cantaloupe image server: An in-house developed open source high-performance dynamic image server that is used to power high resolution image viewing in the Illinois Digital Library and Illinois Data Bank.

Medusa Collection Registry: The Library's digital preservation system and collection registry.

Illinois Open Publishing Network: A series of applications that comprise the Library's open access publishing platform.

Undergraduate Thesis Deposit Service: A new installation of the Vireo ETD Deposit system for a pilot program to automate the archiving of undergraduate theses.

With the Loss of Aaron McCollough, Scholarly Communications and Publishing Librarian, and Bill Ingram, former head of SCARS, this was a year of transition for the group and its services. Harriet Green has been appointed the interim Scholarly Communications and Publishing Librarian and Bill Ingram's position will be divided between a new systems architect, for which the search is ongoing and a software development manager position, which will likely be an internal promotion.

IDEALS -

Seth Robbins created an automated backup system to improve synchronization between the access versions of IDEALS items and preservation versions in Medusa. Improvements were also made to both desktop and server-side software tools in order to streamline batch ingests and administrative functions in IDEALS. Regular meetings are taking place with Helenmary Sheridan, Repository Services Coordinator, to plan next steps for IDEALS development and Colleen Fallaw has been recruited to the project to provide additional support. There are several options under consideration including a redesign of IDEALS to more closely integrate it with Medusa infrastructure, but the project is currently in the evaluation and planning stages.

Vireo -

This has also been a transitional year for our partners at the Graduate College with the loss of Thesis Deposit Coordinator Laura Spradlin. Seth Robbins has been working with current Coordinator Emily Wuchner on new development and planning for the future, making minor changes to the software to support graduate college requests for feature improvement.

Efforts were also continued to facilitate the transfer of submissions from Vireo into IDEALS in order to ensure their accessibility by and preservation for the academic community.

Undergraduate Thesis Deposit -

Seth Robbins has set up a version of the Vireo ETD deposit system to support a new pilot service to allow for the centralized curation of undergraduate theses. The system is on schedule to be tested during the fall 2017 semester so that the program can be piloted in spring 2018 with the partnership of the departments of Anthropology and History.

OJS -

Chris Maden has upgraded the production system to the latest OJS 2.x version. The test system has been upgraded to OJS version 3; no serious problems were encountered except for the lack of Shibboleth authentication. Chris wrote an OJS plugin to address that. The production system will be upgraded after Merinda Hensley approves needed design changes on the test system.

Illinois Data Bank (IDB) -

Colleen Fallaw, in close collaboration with the Research Data Service and other members of the development team, officially launched the IDB into production in August 2017. It is currently open for deposits, and the user experience has been refined in response to feedback, particularly regarding

search and reporting. In response to requests from researchers, IDB now offers an API, command-line guidance, and a sample client for uploading files up to 2TB in size. The new upload options have been used in many of the deposits, and the researchers report appreciating the ability to upload files from the command line on the systems they use during the project.

Illinois Digital Library -

After last year's successful beta release, all collections previously accessible in CONTENTdm have been migrated to the Illinois Digital Library, as well as a number of collections being curated by the University Archives in Medusa that were identified as having interest for the wider scholarly community. Alex Dolski has continued to work with Preservation, CAM and Archives on feature improvements and new features for both content access and administration. Seth Robbins was also enlisted to develop new features for content access.

Cantaloupe IIIF Image Server -

Cantaloupe dynamically generates web-deliverable derivatives (such as thumbnails and zooming image viewer tiles) of both high-resolution preservation master images, and archival images in a variety of formats, for the Digital Library, Illinois Data Bank, and Medusa systems. It was developed and released as open-source software by Alex Dolski in 2015 and has since been deployed at numerous other institutions. Alex continues to develop and maintain the project locally, while also supporting its use in SCARS services.

Medusa Collection Registry -

Howard Ding has closely collaborated with Infrastructure Management and Support (IMS) and the National Center for Supercomputing Applications (NCSA) to replace the NCSA's "condo" storage used by the medusa collection registry with their newer ADS storage. This change allows for the usage of the University's Active Directory service for authorization in the storage filesystem. In addition, Howard has continued to perform maintenance, fix bugs, and provide administrative support for the collection registry. Howard is also researching new options for a more flexible backup feature than is currently provided by the current Amazon Glacier based feature.

Illinois Open Publishing Network (IOPN). -

Working closely with Harriett Green and Janet Swatscheno (Visiting Digital Publishing Specialist), Chris Maden has established several production-level services for the IOPN. The highlight of the year was the first IOPN monograph publication, Claude Monet: The Water-Lilies, a new translation by emeritus professor Bruce Michelson of Georges Clemenceau's memoir, which was published using Pressbooks and Open Monograph Press (OMP).

IOPN also has a journal whose first issue is in peer review in our Open Journals System (OJS) platform, another monograph in peer review published with Scalar, and other journals, monographs, and projects in

development using OMP, OJS, Scalar, Omeka S, and Commons in a Box; most of these projects are through the Publishing Without Walls grant-funded project. Chris has made significant code contributions to OMP, OJS, Pressbooks, and Scalar in the course of this work, and has also contributed to publications generated by the Publishing Without Walls (PWW) Research & Evaluation Working Group, including being the primary maintainer of the survey instruments used in that research.

Goals:

Our most significant goal for the coming year is to increase scalability and reliability of all SCARS systems with the end goal of offering repository services to a broader coalition of public universities in Illinois. Toward that end, a search committee has been formed to hire a systems architect whose primary responsibility will be to investigate and implement solutions for warm spare applications, load balancing and data replication. In partnership with IMS we are also evaluating Amazon Web Services (AWS) cloud storage as a replacement for the NCSA storage.

Another broad goal is to increase the communication and connectivity between SCARS managed services and external services. In the near future, we plan to connect items in the Illinois Digital Library that are managed by the University Archives to their corresponding entries in Archon. We would also like to build functionality into IDEALS and Illinois Databank to exchange data with Illinois Research Connections.

We are also taking steps to improve communication channels between SCARS and other library units. For example, there is a longstanding relationship between Digital Content Creation (DCC) and IDEALS and we are currently working on ways to streamline communication surrounding items digitized for batch ingest. The SCARS group also works closely with IMS for virtual machine and storage support and we've recently set up a recurring monthly meeting to discuss collective issues. We're currently in the process of internally hiring a full-time manager for SCARS to provide a clear route of communication between groups.

Our plans for continuing to expand the Illinois Digital Library's functionality are first to expose persistent identifiers for objects at the file level, then working with project stakeholders and collection administrators to create advanced features to support metadata creation and editing, discoverability of collected materials, and interface usability.

The Texas Digital Library (TDL) is currently working on version 4 of the Vireo ETD software, which should be ready for release soon. We plan to evaluate and upgrade the Vireo ETD system to version 4 in order to adopt new features that will be made available and take advantage of the more current software platform on which it is implemented. We also plan to continue to support the Vireo ETD based Undergraduate Thesis Deposit system through the pilot in Spring 2018 and beyond.

The ultimate goals of our ongoing evaluation of IDEALS is to create a better user experience for IDEALS submitters and administrators, while maintaining the level of accessibility and visibility given to repository items.

We also are interested in using the medusa collection registry as a primary file storage location given the success of that architectural pattern on both the Illinois Digital Library and Illinois Data Bank.

IOPN's technical goals for the coming year are to successfully publish the projects currently in the pipeline and smooth the process for future projects. Analytics and alt-metrics will be tested and deployed for better feedback to authors who publish with us. We will continue to improve the publishing ecosystem, particularly looking at challenges in using Omeka S and Commons in a Box for multiple unrelated projects. Chris Maden is moving out of state and will be working remotely, so communication may prove challenging, but he plans to continue to contribute code to the open source projects that have been adopted by IOPN, and to contribute to publications about these experiments.