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Problem Solved!
Managing Electronic Resource Workflows Using Ticketing System Software

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Abstract

For the second installment of the new column Problem Solved!, co-edited by Kelly Smith and

Scott Vieira, Smith explores how libraries have tackled the problem of electronic resource

(eresource) workflow management by implementing ticketing systems in addition to their

existing integrated library system (ILS) and electronic resource management (ERM) tools. Most

libraries employing ticket tracking to manage eresources have chosen one of a variety of

commercial and open source software designed for customer relations management (CRM).

Alternatively, some libraries are developing home grown systems or kluging together freely

available collaboration software to track issues.

Keywords

customer relations management (CRM), ticketing software, bug tracking, electronic resource

management (ERM), eresources, troubleshooting, workflow tracking, academic libraries, help

desk, task tracking

The Problem: Workflow Management

In a 2011 *Library Journal* survey of a librarians and library vendors, 'workflow management,' defined as "support across e-resource life cycle, including resource tracking, reminders, status assignments, routing and redistribution of workflow, and communication, or notifications to stakeholders or patrons," was identified as the top electronic resource management (ERM) priority (Collins & Grogg, 2011). Five years later, centralized workflow management remains a vexing problem for serials and electronic resources librarians.

Every stage of the electronic resource life cycle, from trial, to acquisition, to activation, to maintenance and troubleshooting, to renewal or cancelation, requires a complex series of non-linear tasks, typically involving hand-offs between multiple library staff members and follow-ups with external players such as students, faculty members, administrative offices on campus, and/or vendors. Let's just examine one of those steps in the lifecycle: maintenance and troubleshooting. Maintaining access to individual electronic resources is an ongoing process that involves a complex web of potential variables and possible root causes when problems arise. Some of the most common include: vendor problems (server issues, missing content, and platform usability); subscription problems (embargoed, lapsed, activation incomplete, max number concurrent users reach, content removed from aggregated database by publisher, etc.); metadata corrections needed (outdated link schemes, catalog metadata, openURL link resolver metadata, etc.); local system problems (campus course management compatibility issues with links and/or media, campus server problems, discovery layer or ILS system problems); authentication problems (proxy problems, proxy max virtual hosts, other authentication issue);

end user problems (login problems, failure of faculty to provide correct permanent urn, media player issues, and web browser issues - such as compatibility, cookies, and problems opening PDFs).

Frustratingly, there does not seem to be an existing ERM system that gives us a streamlined way to track these problems. Even the newly developed next-gen library systems have only addressed this issue in a limited manner, and in small parts of the lifecycle, such as license management. Successful eresource management "requires workflows that can facilitate communication and accommodate the collection of large amounts of information that can be only partially managed through tools such as ERM systems." (Rathmel, Mobley, Pennington, & Chandler, 2015)

Despite the lack of functionality found in our current systems, serials and electronic resource librarians and staff nevertheless must find ways to complete the work. Often, we struggle through our efforts using a combination of emails and shared spreadsheets. This can often lead to communication issues due to a lack of transparency, poor service outcomes and frustration as issues reported via emails get buried in staff inboxes, confusion as to whom has completed what tasks, and lack of documentation. Depending on the size of the library and the number of staff members collaborating on eresource management, this type of approach quickly becomes unsustainable. Additionally, because they don't have proper tools, it means that staff are primarily reactive rather than proactive in addressing end user issues.

A Solution: Ticketing Systems

On October 9, 2015, I contacted the ERIL-L listserv seeking librarians interested in discussing their experiences using ticketing systems for managing eresources. Librarians and staff from 14 different institutions responded (see Acknowledgements section). The scope of this column does not allow me to delve into the details of each library's local implementation, but I will explore some common themes, highlight a few noteworthy features from some of the libraries, and share my own library's experience implementing a ticketing system.

Of the fifteen libraries responding (including mine), nine have chosen a commercial product, four are using an open source solution, and two have kluged together freely available collaboration software. Most of the libraries paying for a commercial or hosted open source product elected to invest in their system because of the ability to customize features to fit their local needs or to integrate into existing systems. To avoid paying costs, several institutions using commercial systems elected to piggyback on their campus information technology department's CRM system (while saving on financial costs, they did not have the ability to choose their system based on library needs). The libraries using freely available collaboration software felt that the systems, despite having fewer customization features, met their basic needs for having a centrally located, shared space for tracking issues.

If choosing a system (rather than joining in with the existing campus CRM), it first is necessary to determine one's institutional priorities and goals, because each system varies in its features and customization options. In addition to using ticketing software for its primary purpose (to

solve problems reported by end users by addressing maintenance and troubleshooting issues),

many libraries have realized the potential of these systems to provide a proactive method for

tracking other types issues that require time and follow up or multiple steps to complete. Some

examples I gleaned from the libraries I interviewed include: building maintenance requests;

website enhancement requests; technology issue reports; lost print item tracking; new resource

rollouts (the cycle of requests, trials, acquisition, and activation); vendor downtime analysis;

licensing processes; departmental work request (such as providing information to departments

for accreditation reports or applying a subject area to a database in the A-Z list); resource

renewal and cancelation; and catalog enhancement requests.

Costs and Limitations

As mentioned previously, unless a library is able to piggyback on the campus CRM system, has

the technical staff to develop an open source solution, or chooses to go with a free option, there

will be a financial cost to implement a ticketing system. However, managers should consider the

considerable amount of staff time and effort that will be saved as well as the improved customer

service that can come from providing this type of tool for staff. Generally, libraries reported that

the financial costs were not significant and were well worth the expense.

In addition to financial costs, there are workflow limitations. Most commercial CRM systems

were designed for corporate needs, rather than for libraries, so the terminology and organization

of these systems are not always intuitive. A common complaint is that search functions are not

robust and that generally only rudimentary keyword search options are provided, making it

difficult to identify patterns or colocate related tickets. Along these lines, the systems don't sync with existing library systems, so effort will likely be duplicated as staff may need track and document collections issues in multiple systems. Finally, end users may report issues via phone or face to face which will require staff to manually transcribe them into tickets.

In terms of service drawbacks, if tickets are transferred between staff, there can be a "ping-pong effect of shuttling patrons from one department to another" (Borchert, 2006, p. 9) Additionally, if patrons will be submitting their own tickets, via either an email or a form, care must be taken to train staff to respond appropriately. Because of the lack of contextual clues in written responses, miscommunication with end users is possible. This service issue requires staff to be careful with tone and wording, etc. As Borchert (2006) writes, "In technical services, many of us are accustomed to providing terse, efficient responses while we are focused on the mechanics of solving a problem. This works well in a department of people who know each other, but patrons appreciate the effort to project a friendlier tone in responding" (p. 10).

Benefits

Libraries report many connected and inter-related benefits that arise as a result of implementing a ticketing system. The libraries I interviewed saw improvements in the following areas: communication and collaboration; customer responsiveness; workflow efficiency; service effectiveness; and assessment and reporting options.

The number one benefit to implementing a ticketing system, reported by every library I interviewed, was that it allowed them to move away from email. Not only can end user problem reports get lost among hundreds of other messages, but keeping issues and solutions hidden in one staff member's email account siloes the information that could potentially help other staff members solve similar problems. This approach is especially problematic in institutions where multiple people have responsibility for responding to end users. Characterized by several librarians as a "vast improvement" to "wading" through email, Tim Pellett echoed those sentiments when he described the University of Maine's Freshdesk system as being "crucial to help organize and manage our work and ensure that all tickets are tracked and answered."

As an added benefit, moving problem reports out of email and into a centralized location resulted in increased transparency and improved communication, both internally and externally. In a shared system that is consistently coded, staff can quickly scan tickets and identify common issues. If they notice that another staff member is already working on an issue related to a new ticket, they can transfer the new ticket to that staff member, which collocates evidence to help troubleshoot the issue and prevents duplication of effort. All libraries reported the ability to assign and claim a ticket as a vital benefit. Assigning ownership to the staff member who has expertise in a certain area enables the "expert" (often technical services staff) to communicate directly with end users rather than working through an intermediary (typically public services staff), which slows things down and can potentially lead to unnecessary miscommunication.

Several libraries reported that having both public services and technical services staff working in the same system improved collaboration within and across teams. Michael Mackin from the

Oregon Health & Science University (OHSU) explained that having both technical services and public services staff in one queue helps each have more context to understand others' work. Ladd Brown from Virginia Tech said that enabling public services to see the way that eresources staff responded to end users has allowed public services staff to develop more technical knowledge so they can do more basic troubleshooting "on the fly," preventing the issue from being escalated to a ticket. This kind of transparency also helps staff avoid miscommunication with each other and with end users.

Another feature that encourages collaboration is the ability to tag and collocate similar tickets. Such a feature is a great training tool for new staff who aren't quite sure where to start when working on a new ticket - they can grab a canned reply from a related historical ticket or they can quickly see which librarians have worked on that category of ticket in the past and go directly to the experts to get more context and instruction. Jeffrey Mortimore and Debra Skinner from Georgia Southern University believe that their LibAnswers system contributes to staff developing confidence in their ability to answer questions from end users, whether it is their area of expertise or not.

The ability to easily see patterns emerging from like tickets also enables staff to be proactive about problems, instead of always reacting to end users after they encounter a problem. Ladd Brown explained that when their new discovery layer was being implemented, they could identify systemic problems by taking note of similar tickets that were coming in, and then they could work to fix certain settings in the system rather than just addressing each problem

individually. Similar experiences were reported to me by other libraries, and are also described in the published literature.

> We noticed a pattern of titles not listed in our proxy database, all from the same publisher site. After three or four such incidents were reported, our Assistant Director for Technology pulled a list of URLs for that vendor and made sure all of them were in the proxy. Thirty of them were not, and we were able to correct the situation before thirty frustrated patrons reported the problem. (Borchert, 2006, p. 7)

Of course, our ultimate goal is to improve service to our end users. Undoubtedly, the internal workflow benefits already described in this article will help us better achieve this goal. There are, however, some unique features of ticketing systems that directly result in specific service improvements. The ability to prioritize tickets enables staff to more quickly address the most important issues. The ability to have a desktop notification pop up when a ticket is submitted enables staff to immediately respond to problems, even while not monitoring the queue. For tickets that require ongoing troubleshooting and follow up, notification reminders can be set to prevent them from being lost in the shuffle of new tickets. At the University of Mississippi, Kevin Herrera reports that a feature of their SysAid system automatically gathers a screen capture of whatever website the patron is using when they encounter difficulty, easing problem submission for the end user. Finally, the LibAnswers system has several library-specific enhancements (these will be discussed in the following section).

In addition to providing basic counts of transactions to report to ACRL and other external bodies, ticketing systems often provide robust analysis features that can be used to assess workflows and

services. Managers can analyze the frequency of incoming problem reports at certain times of the

day to help determine appropriate staffing schedules. They can also analyze the types of

problems most often addressed to help determine staffing levels on different teams and in order

to prioritize training opportunities from year to year. For an example of this, see the University

of Texas at Austin's ticket history on their public wiki, which demonstrates interesting trends in

the percentage of types of tickets tracked – notably, problems with open access resources seem

have increased more than any of the other categories (Quagliana, 2015).

As mentioned previously, these systems enable staff to search by vendor to find patterns and be

proactive about solving problems before they occur again. Additionally, having a body of

documentation about technical issues with certain databases or platforms can help inform

acquisitions staff when making decisions about whether to renew or cancel a particular resource.

LibAnswers at EKU

Eastern Kentucky University Libraries' collections and discovery services division staff

members have struggled with addressing end user issues using a shared email box. Acutely

aware of the limitations of tackling troubleshooting in this manner, a collaborative ticketing

system has been on our "wish list" for years. Without the funds to afford a commercial system

nor the staff time to contribute to developing an open source option, we simply made do with

what we had. When our reference and instruction team recently expressed an interest in

migrating their chat services to Springshare's LibAnswers, we were intrigued to learn of its

potential as a ticket tracker.

We pretty quickly determined that not only did LibAnswers offer most of the features available in other CRM systems on the market (tagging, replying by email, centralized ticket management, claiming and assigning, etc.), but it also offered integration features with our existing Springshare products (Libguides, Analytics, etc.) that would not be possible with other systems. We began setting up the system in fall 2015 with public rollout planned for January 2016.

A unique feature of Springshare's LibAnswers system is a public facing help interface that includes a LibChat feature, a ticket submission form, and a FAQ generated from answers to prior tickets ("Ask Us! - Eastern Kentucky University Libraries LibAnswers," 2015). The intuitive public interface brings up historical answers as end users type their questions. OHSU reports a reduction in question load after implementing the FAQ service.
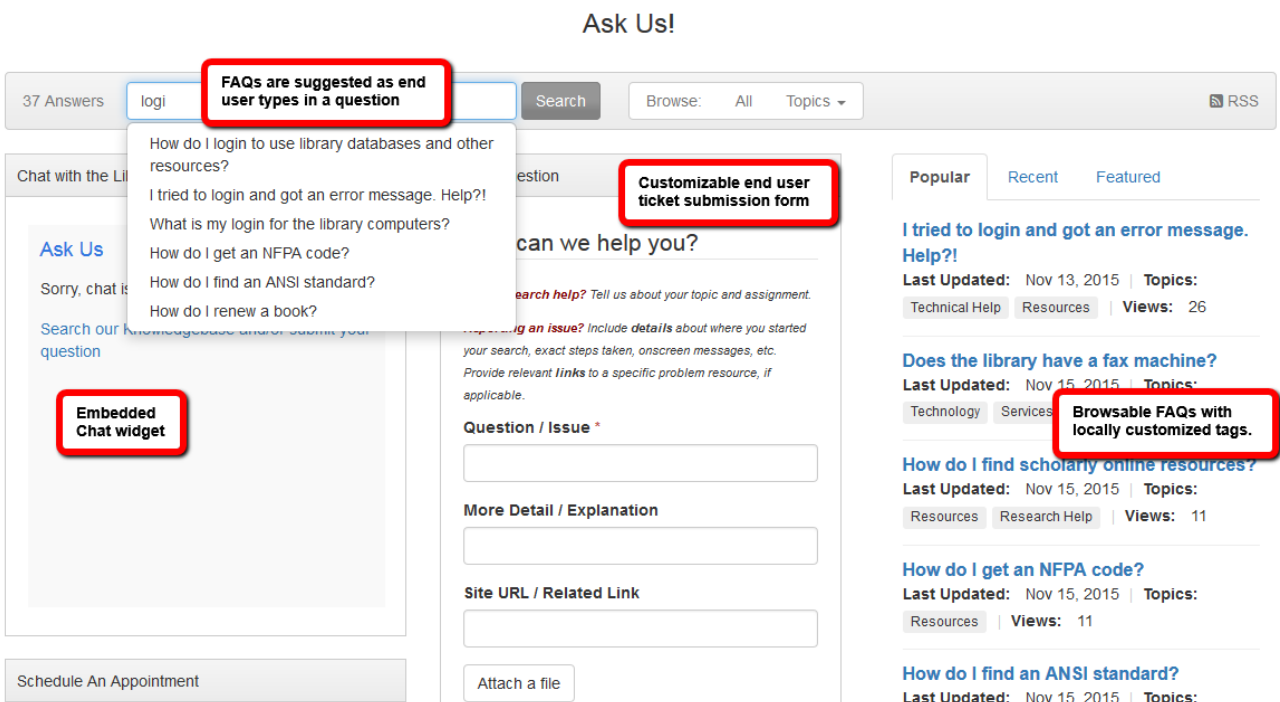
Figure 1. EKU Libraries' LibAnswers Public-Facing FAQ and Ticket Submission Page.

The LibChat feature will enable our staff to answer end user questions on the fly, submit the chat to be recorded in LibAnalytics, and then submit the chat as a ticket if further follow-up is required (Smith, 2015).
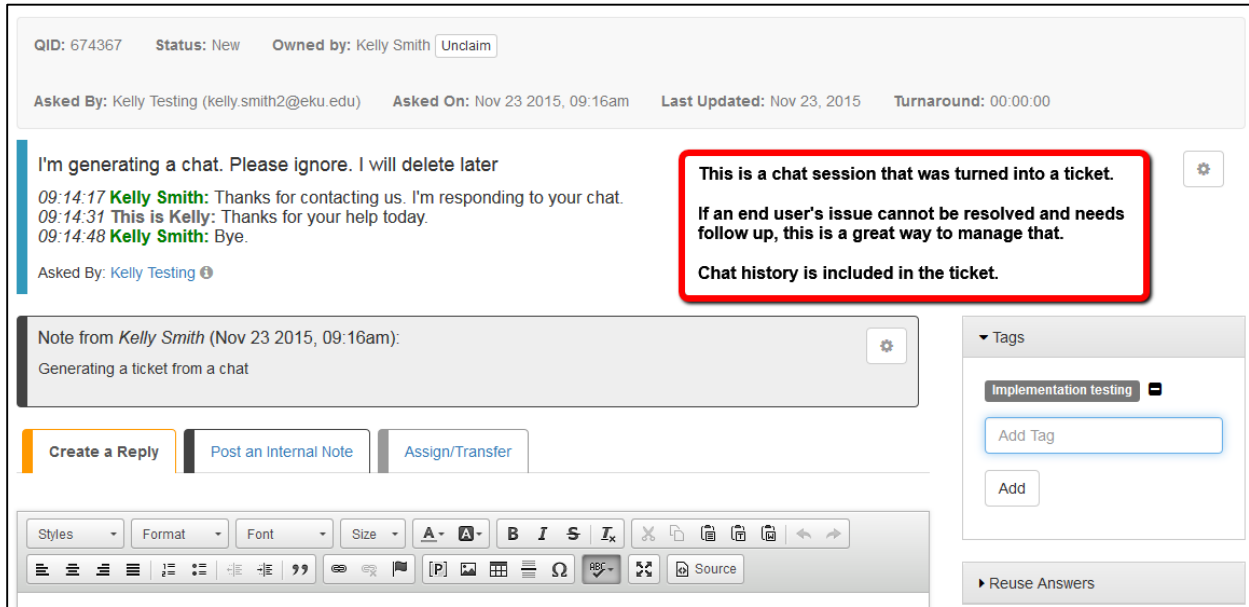

Figure 2. EKU Libraries' LibAnswers Chat Transformed to Ticket.

Additionally, we're already developing an internal FAQ to provide more context for library staff about common issues and problems.
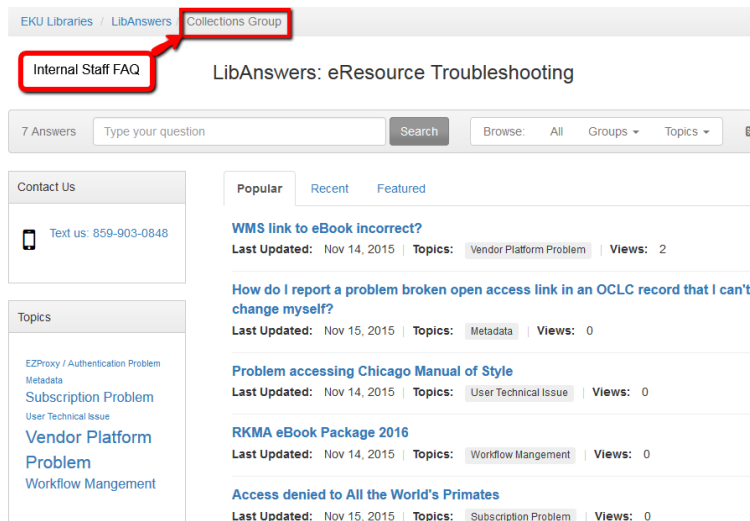

Figure 3. EKU Libraries LibAnswers Internal Staff FAQ.

We also plan to utilize the "System Status" feature with a widget that can be easily embedded in the Libguides A-Z page ("EKU Libraries - Current status of library systems and apps - LibAnswers," 2015).

Conclusion

Libraries that have implement a ticketing system to track end user issues and internal library workflows have seen increased collaboration and improvements in the efficiency, effectiveness, and morale of librarians and staff. When choosing a system, it is important to compare local needs with the available features and options. What works for one library may not work well for another. "Here at Muhlenberg College, we seriously evaluated two different options," wrote Tim Clarke. "We were careful to only evaluate ticket tracking options, and not full-blown project management tools like Asana or Redmine or Jira. Those where way overwrought for what we wanted, and too closely coupled to the software development process."

Some things to look for include financial cost, customization level, complexity, integration features, and automation versus manual entry. It is not within the scope of this article to outline the different features and options that come with each of the dozens of systems available – consult the references at the end of the article to learn more.

Acknowledgements

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