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System Statuses in Academic Libraries: Increasing Transparency and Improving the User Experience

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System Statuses in Academic Libraries: Increasing Transparency and Improving User Experience

"is facebook down" trended on Google on October 4, 2021, when Facebook became temporarily globally unavailable. Web users proactively seek information when they encounter issues online. System status dashboards are one way libraries can leverage this behavior to share changes to resources or services and improve transparency, reference services, and the user experience. The University at Albany Libraries Discovery Services Librarian and User Experience Librarian implemented Springshare's System Status Management tool to share system statuses with library staff and the campus community. The institutional context, implementation, and impact are described in this paper. The authors reviewed Association of Research Libraries members' library websites to investigate if and how system statuses are being used to communicate with patrons. Results indicate that the majority of libraries reviewed do not employ a dedicated system status dashboard to share information with their constituents, but may use other types of alerts instead.

Keywords: system statuses; user experience; reference services; communication with researchers

Introduction

On March 23, 2021, a cargo ship called the Ever Given became wedged from stern to bow in the Suez Canal, completely blocking all traffic along one of the busiest and most vital trade routes in the world. Crews worked for six days to free the vessel while the traffic in the canal built up, halting commercial traffic worth an estimated ten billion dollars a day (Hookway, 2021; Mirza et al., 2021; Yee & Nagourney, 2021). The unusual and massive predicament quickly caught global attention. The event inspired a host of memes that were shared across social media channels

(Rauhala, 2021). "Is the ship still stuck?" quickly became one of several related trending keyword searches on Google (Google Trends, n.d.a). It was such a popular search that a new website tracking the event, istheshipstillstuck.com, was created, amassing 50 million views in just four days (Neill, n.d.; Neill, 2021).

On October 4, 2021, only months after the Ever Given was freed, Facebook and its subsidiaries became temporarily, globally unavailable for 5-6 hours when their data centers went offline. In that short time, "is facebook down?" became a peak search term trend on Google (Conger, 2021; Google Trends, n.d.b).

These two real-world examples demonstrate web-users' propensity to proactively seek status-related information when they are curious or when they encounter issues online. System status pages are ubiquitous on the web, with a diverse array of digital services and commercial websites using system statuses to communicate with their users. From website hosting platforms like Digital Ocean and Amazon Web Services and technology companies like Apple, Oracle, and Google to streaming entertainment platforms like Netflix and Paramount+, online services like DropBox, Flickr, and Slack, and social platforms like Reddit and Twitter, commercial entities are using system status pages to communicate outages or service disruptions with the public. The proliferation of individual system status dashboards coupled with the multitude of system status aggregators like Down Detector, Is it Down or Is it Just Me, and Is it Down Right Now reflect the importance of sharing important status information with web users and the desire of web users to have access to that information. Libraries can leverage these same tools and behaviors to communicate changes to services or resources with their user communities.

Libraries provide access to a plethora of electronic resources as part of their collections, including databases, ebooks, ejournals, streaming video, and content from other

external digital repositories, such as institutional repositories. Where accessing physical materials is fairly straightforward (a physical item is either in the library and available for use, or it isn't), electronic resources present a variety of unique discovery and access-related issues. Changes to library services, like printing or interlibrary loan, or interruptions in access to public service points, are also important to communicate with the library's user community. Sharing this kind of information with librarians and others at service points, as well as the broader campus community, is important for supporting a positive user experience. Doing so helps ensure researchers get the resources they need more quickly and can reduce the frustration when things are not working as expected.

How and with whom to share information regarding these issues is a question worth considering. System status dashboards are one way libraries can leverage information-seeking behavior and share temporary or unexpected changes to library resources or services, which improves transparency, reference services, and the user experience. System statuses are often seen in the technology sector, and many database providers and publishers have publicly available system status dashboards for their products. However, changes or service disruptions also happen on the institution level, so publishers' system statuses do not always reflect what's happening at a given library. Not all library users know to search for a publisher's system status dashboard, and if they did, they would need to search for them individually. System status dashboards can serve as a library's one-stop shop for communicating with its user community and creating a more transparent, positive user experience.

Literature Review

The responsibility for electronic resources management has been and remains widespread throughout libraries. Originally, the electronic resources librarian was treated as a combination of

a reference and systems librarian (He & Knee, 1995). An analysis of electronic resources job descriptions posted between 1985 and 2001 found they included many responsibilities typically associated with public services positions and that many were actually considered part of public services departments (Fisher, 2003). A subsequent analysis reviewing electronic resources positions conducted from 2000 to 2008 found that the three most common responsibilities were access and troubleshooting, acquisitions, and licensing, responsibilities typically associated with work in technical services (Murdock, 2010). As libraries shifted their collections from physical resources to online ones, electronic resource management was considered the future of work in Technical Services departments (Elguindi & Schmidt, 2012; Stachokas, 2013). In large research libraries, there are now entire departments or divisions within technical services tasked with managing all aspects of electronic resources and digital information (Davis, 2015).

Technical Services Meets Public Services

Lines between technical services and public services have shifted and blurred over time. Hiatt (2015) holds that differentiating between "technical services" and "public services" is a false dichotomy and that regardless of the department or position in the library, that work serves library patrons. Mortimore (2017) notes that traditional "distinctions between the 'front office' and the 'back office fail to align with library practice" (p.498). In fact, there is concern that even the term "technical services" itself does not reflect that increasingly, the work of technical services is looking outward and focusing on the user experience (Davis, 2016). In an exploration of the evolution of department names in technical services, Biswas (2021) found that many of the changes in department names "emphasize partnerships with other groups in the library" and reflect their relationship to facilitating "patron discovery and access" (p.11).

The increase in electronic resources in libraries' collections has contributed significantly to this shift. Mortimore (2017) argues that in practice, "technical services personnel contribute to a service culture that diminishes old lines between technical and public services," specifically through their work with electronic resources (p.498).

As the prevalence of online resources in libraries' collections has increased, the potential for disruptions in access to these resources has also increased, highlighting the need for effective communication "between the technical services staff who manage these resources and the public services staff who interact with patrons" (Bazeley & Yoose, 2013, p.118). Resnick (2009) found that while technical competencies played a role in effectively troubleshooting issues accessing electronic resources, competencies related to communicating with library users and library staff played a more prominent role in resolving issues and supporting researchers. A follow up study by Resnick, Ugaz, and Burford (2010) echoed the findings of Resnick's 2009 study, reinforcing that effective communication with patrons and colleagues is even more essential than technical expertise for helping to resolve electronic resources access issues. In a presentation on electronic resources troubleshooting and tools, Skinner (2016) identified the need to "inform all public service staff about problems and solutions, not only the person submitting the problem" as a best practice and one focus moving forward. As perspectives on the role of technical services evolve, Laskowski (2015) recommends that traits such as flexibility, collaboration, and good communication, while typically more associated with positions in public services, are an asset to technical services personnel and should be considered when identifying job requirements.

While public services librarians and staff routinely provide direct assistance to library users, there may also be direct communication between troubleshooting staff in technical services and researchers having issues accessing the library's online resources (Hiatt, 2015). In

fact, taking a more "public services approach" to technical services work such as cataloging and electronic resources troubleshooting can greatly improve the discovery and access experience of library users (Gap between technical and public services librarians, 2021 ; Mortimore, 2017). There may be broad benefits to the library in encouraging these collaborations and approaches to technical and public services work. Laskowski (2015) notes that leveraging effective collaboration between technical services and public services is an emerging asset in transformative leadership in libraries.

System Statuses in Practice

There is little published research on the use of system statuses in libraries or other disciplines. However, research by Thoden, et. al (2017), Hariri and Norouzi (2011), and Inal (2019) has pointed to the lack of transparency in relation to system status as a shortcoming on the web and with online resources more generally.

To improve consistency and centralize communication from technical services with other areas of the library, The University of Miami Libraries created a LibGuide which, in part, served as a starting point for reporting electronic resources access issues and provided status updates on known issues (Bazely & Yoose, p.123). They found that with time, the increase in transparency fostered by this method of communication resulted in more streamlined communication channels and increased trust between public services and technical services staff. Whitfield (2021) noted that in addition to sharing changes or disruptions to electronic resources, Rider University records and analyzes system statuses to help inform their evidence-based collection development and subscription renewal processes.

The American Library Association's Social Media Guidelines for Public and Academic Libraries (2018) references sharing information "regarding matters related to library resources

and services" as an example of the appropriate use of social media by libraries. A 2010 study of ARL Libraries found that most libraries use social networking sites to share news and information about their services (Mahmoud & Richardson, 2011, p.369-370). James Cook University Library has used "embedded tweet feeds in web pages to display system status issues to users" (Feedback, 2013, p.12).

Usability Principles

For nearly twenty-five years, the first usability heuristic on Jakob Nielsen's usability checklist for website interface design has been the visibility of system status. Heuristics are strategies or tools that simplify complex decision making tasks and help users accomplish goals or answer questions on their own. Nielsen's list identifies evaluation criteria as usability heuristics because they are general rules rather than specific usability guidelines (2020). A classic example of system status as heuristic is the display of battery power on a mobile device. The visual information informs a user how to proceed – if the power is low they can charge the device, take no action or turn on a power savings mode (Harley, 2018). A 2018 study found Nielsen's list of principles to be one of the most commonly used to evaluate library web applications (Isabel et al., 2018). Users need to understand what is happening at a given moment on a website in order to make informed decisions (Nielsen, 2020). System status information can range from a visited link appearing in a different color than new links to a spinning icon indicating a download's progress.

The existing literature emphasizes the value of heuristic evaluation on library web applications. Raward (2013) examined several evaluation approaches and determined that a heuristic checklist is important for academic librarians to use when building and evaluating their

websites. At the time of the study, they noted that librarians are often responsible for their library's website. Using such a checklist is one way to ensure the site adheres to common usability principles (Raward, 2013). In a study by Yushiana & Widyawati (2007) the system status heuristic was applied when evaluating a library catalog. The researchers found the heuristic appropriate for applying to library systems such as an OPAC. Building on previous work, Marjo-Riitta Aitta, Kaleva, S., & Kortelainen, T. (2008) used Nielsen's heuristic checklist as a base to develop a library-focused heuristic list. Harley (2018) noted that websites that make system statuses available provide visitors with knowledge. Visitors can then use that knowledge to decide what to do next on a website or during information-seeking. "The visibility of system status is a basic tenet of a great user experience" (para. 20). Providing users with regular updates on the status of systems helps demonstrate transparency and a commitment to customer service (Shmidt, 2014).

An up-to-date system status dashboard for library databases and resources enhances transparency with patrons. Providing users with information that can help during a task, such as an estimated timeframe for an outage, helps users determine when and how to return and complete their tasks. When users encounter a system that does not work as expected, they may feel lost, frustrated, or confused. Sharing information about current and future issues can build trust and credibility between the library and patrons.

Methodology

The authors took a snapshot of the current landscape of status updates used on library websites by conducting a website review of 116 Association of Research Libraries (ARL) member libraries' websites. ARL is a nonprofit membership organization of research libraries and

archives across the US and Canada. ARL libraries were selected for several reasons. The University at Albany Libraries is a member of ARL, and the authors were curious about whether and how their research library peers were incorporating system statuses into their public-facing web presence. Member libraries must align with member values, including offering many resources to their patrons and "equitable access to substantive and diverse information resources that address the full scope of research and learning at the library's institution" (Association of Research Libraries, 2018, 1). In addition, the libraries represent/incorporate ARL's guiding principles, which include "operate with goals, values, and processes that are responsive to members' needs, well-articulated, transparent, fiscally accountable, and broadly communicated" (Association of Research Libraries, n.d.). Eight national and public libraries and one non-English library were excluded from the membership list, as the authors focused on only academic institutions.

The website review identified whether a library provided public-facing alerts for its resources or services. The authors captured the page URL containing the system status information and the method of displaying it. The authors classified the format for sharing system statuses as (1) standalone pages, (2) website banners (often displayed across the top of the homepage), (3) embedded or sidebar placement on another library page, or (4) blog/news page. The container or website placement was noted in four categories to investigate further how alerts were distributed: (1) displayed upfront on the library homepage, (2) displayed on the library's dedicated database page (could be a list/portal) or dedicated e-resources page, (3) incorporated onto the library's discovery platform or catalog interface, and (4) displayed on the library's help or frequently asked questions page.

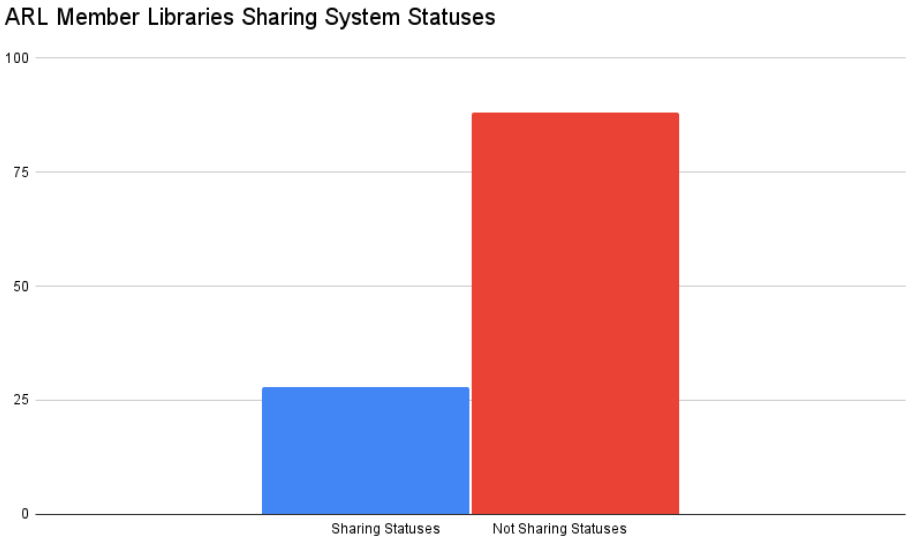
The authors created a set of definitions for terms and search strategies to ensure accurate and consistent data was collected. Data was collected from June 2021 - September 2021. The authors started by reviewing the same three websites independently, and used those as a test case to help refine the definitions, search strategies, and ensure that we were being consistent in our analysis. Each review started with browsing each library's website, looking for any links to or embedded system status content. In cases where that information could not be found through browsing, keyword searches for terms such as "status" or pages where those statuses may be found such as "FAQ" or "news" were conducted using the website's search functionality. The amount of time spent on each website depended on how much searching was required and how intuitive the website was to navigate. The authors went through each of the library's websites independently and compared their findings in an effort to reduce the chances of missing a library's system status content.

Results & Discussion

Website Review Results

The authors first determined whether or not each library was sharing system statuses on their website or in their research tools (Figure 1).

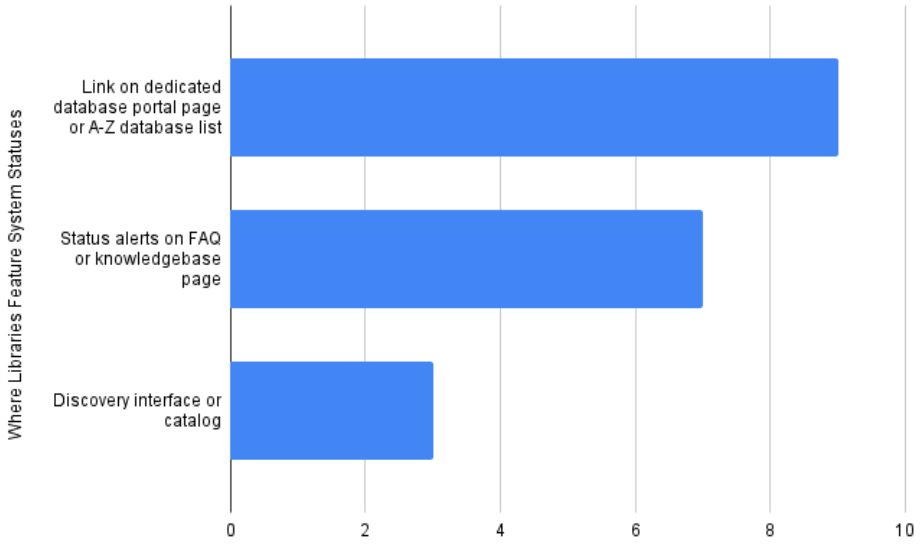
Figure 1. *ARL Member Libraries Sharing System Statuses*



Approximately a quarter (n=28, 24.1%) of the libraries reviewed use some form of dedicated system status dashboard or embedded system statuses in one or more of their web pages, while the majority (n=88, 75.9%) of libraries reviewed did not.

Libraries that are sharing system statuses may choose to do so in a variety of places in their web presence (Figure 2).

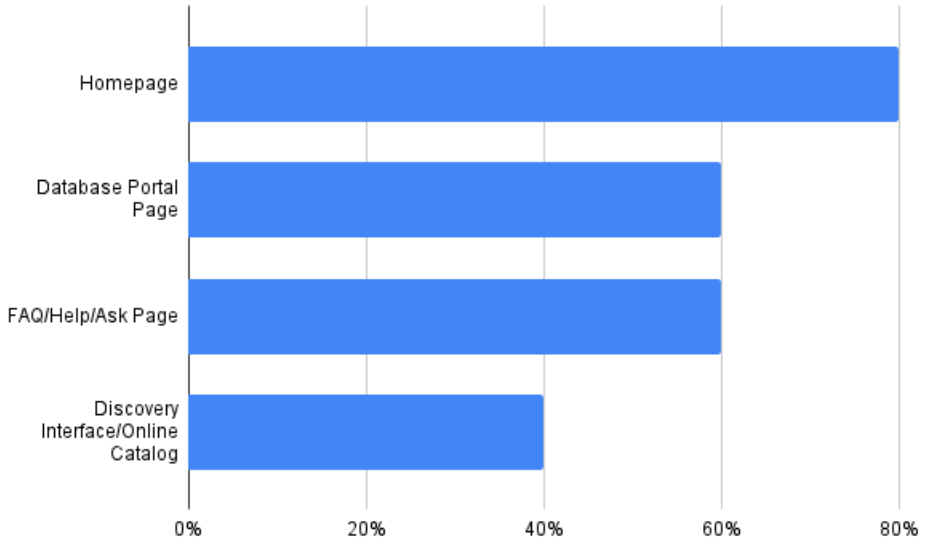
Figure 2. *Where Libraries Feature System Statuses*



Nearly half of those 28 libraries sharing system statuses (n=12, 42.8%) featured a link or referral to the system status dashboard on the library homepage. Several libraries (n=9, 32.1%) also shared system status information on a dedicated database portal page or A-Z list, which the authors defined as web pages that serve as the central searchable, alphabetical, and/or browsable list of electronic database resources. A quarter (n=7, 25%) of library websites incorporated statuses on their frequently asked questions or knowledge base web page. These pages are sometimes labeled as FAQs, and typically contain a browsable or searchable list of questions and answers for users to self-help. Few libraries (n=3, 10.7%) included system statuses in their discovery interface or online catalog.

Most libraries that use system statuses included them in one location on their website, but a handful of libraries (n=5, 17.8%) featured system statuses in more than one web location (Figure 3).

Figure 3. *Locations for System Statuses when Multiple Locations are Used*



Of those using multiple locations, 80% included the homepage, 60% on the database portal page, 60% on an FAQ/Help/Ask page, and 40% were located on the discovery interface / online catalog.

Some libraries used other methods to share changes to their resources and services. Alerts or banners on the homepage were present for 11 (9.5%) libraries and typically shared COVID-19-related changes to library access and services. Another 10 (8.6%) libraries posted updates or changes to services and resources in a news and events style blog, with system status information intermingled with other types of news, events, updates, and pictures from the libraries.

Discussion

The library website's homepage was the most common place to see a link to system status information. While this is a prominent location and may be helpful for alerting researchers and library employees to the existence of a system status portal, it may not be the most effective placement. If researchers encounter issues while attempting to access resources through the A-Z list or other discovery tools, they would need to leave their search environment and remember to go back to the library's website to find status information, which may be cumbersome or unlikely to happen. Additionally, the FAQ or Help pages seem like a particularly useful place to include links to system status information as it may facilitate self-help and support their information seeking behavior.

System statuses were especially easy to find when they were included in more than one place in the libraries' websites and research tools. Having the statuses available in multiple places made them more discoverable, as well as providing that information where researchers are likely to have the need for it, regardless of what tools they are using to conduct their research.

For this review, banners or blog-style approaches were not considered the equivalent of a dedicated system status dashboard or embedded system statuses. While system status dashboards offer at-a-glance information about services and resources, this information could be buried in a news and events blog. Additionally, the method or frequency of providing updates or reporting resolved issues in these blogs was ambiguous. It was unclear if banners would be used for communicating more routine changes to library services or resources, or if they are reserved for unique disruptions like those due to COVID-19. They also do not lend themselves to sharing information about multiple services or resources simultaneously.

Website Review Limitations

The authors determined the availability of system statuses based on publicly available information on libraries' websites. There may be libraries communicating system statuses internally amongst library staff through staff-only pages or portals or directly to their campus community through campus systems that are not visible to the public. This review does not account for those methods of sharing system statuses with constituents.

Systems Statuses at the University at Albany Libraries

Institutional Context

In response to the Coronavirus pandemic, the University closed most of its physical spaces and transitioned to a fully remote learning and support environment in March 2020. On-campus living and learning spaces were shuttered, and student support services and the University Libraries closed their buildings.

During this time, the Libraries suspended loaning physical materials, so online resources became the primary way we were able to support the research and information needs of the

University's students, faculty, and the rest of the campus community. The Libraries had been grappling with budget constraints prior to this shift to remote living, teaching, and learning. Those budget limitations were exacerbated by the effects of the pandemic resulting in the cancellation of several online resources. This confluence of events highlighted the need for the Libraries to share timely information about changes to online resources with the campus community.

The Technical Services department had struggled with sharing changes to subscriptions, temporary issues accessing resources, or disruptions to the Libraries' services for some time. This information was primarily shared using internal email lists. This approach had some issues; for example, these emails could easily be missed in a full inbox. Technical issues may take days or weeks to be resolved, and it was burdensome for recipients of the messages to tell whether something was still an active issue or not. Even remembering that there had been a message about a resource routinely presented itself as an issue.

In some cases, messages were sent to several email lists but were still not reaching everyone who would need to know. These email lists were internal to the Libraries, so students, faculty, and other researchers affiliated with the University would not receive them. In addition to email, the Technical Services department occasionally made use of a red alert banner posted prominently at the top of the Libraries' web pages to share minor service interruptions or electronic resource outages. The banner was initially intended for significant disruptions to library access, such as building closures, unexpected changes in hours, or essential services being unavailable. However, it was also used to share more routine online resource-related issues periodically. There were some limitations to this approach. It was challenging to share multiple issues using the alert banner at once, and determining what issues or resources were of high

enough importance to warrant a banner on the Libraries' website was ambiguous and subjective. There was concern that having routine alerts related to minor or temporary issues with specific online resources would dilute the impact of the banner as a notification mechanism for the disruptions it was intended to highlight.

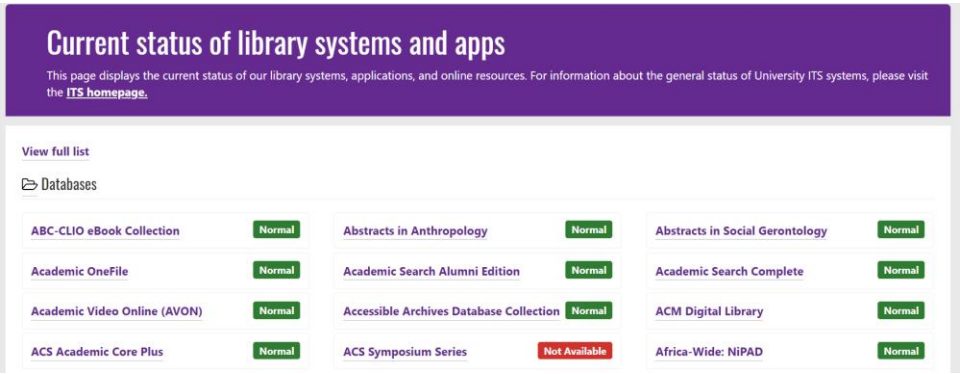
With this in mind, the User Experience Librarian began to explore the Libraries' options for better communicating the dramatic changes to subscriptions to online resources, as well as any issues that may affect researchers' ability to access and use current subscription resources. The Libraries provide access to subscriptions and open access resources through a locally developed database A-Z list, the Database Finder, and Ex Libris Primo VE discovery service. The Libraries also have access to several Springshare services, including LibGuides and LibAnswers.

Implementation

The Libraries adopted Springshare's Systems Status Management feature to provide status updates and information relevant to accessing online resources and library services. There were several reasons the Libraries chose to use Springshare's system status tool over other freely available, subscription-based, or local solutions. As a Springshare LibAnswers subscriber, the Libraries already had access to System Status Management but had not implemented it. Other Springshare tools, including LibAnswers and LibGuides, had been well-received by departments throughout the Libraries. They proved easy to implement and learn to use, incorporated into workflows well, and integrated seamlessly into the Libraries' existing public-facing research and web presences. Not only did it seem to meet the Libraries' need for a way to communicate the status of electronic resources and services with the campus, but it also looked promising on those implementation and management fronts.

The User Experience Librarian created entries for major library services, such as interlibrary loan, and technology, such as printing and off campus access, as well as a folder for the electronic resources that were to be included in the Systems Status portal. The Head of Reference and Research Services populated the electronic resources folder with all subscription and consortium resources (databases). These entries generate the Libraries' System Status Management dashboard (Figure 4).

Figure 4. Snippet of the University at Albany Libraries' system statuses from the System Status Management page (https://albany.libanswers.com/systems) showing both Normal and Not Available statuses



Systems Status Management has many default statuses available, which the Libraries started with and has continued to use. The Online Public Interface Committee helped select and define status labels. A status label of Normal is the default for all resources and services. For electronic resources, the Not Available status is used for cancelled, ceased, or otherwise unavailable resources, and the Access Issues status is used to share temporary service interruptions, scheduled maintenance that may impact access, changes to authentication or

functionality, and other similar information. News, Did You Know, and Outage statuses are available, but these have been used infrequently in practice.

An effort was made to ensure the system statuses were easily discoverable in multiple places, as the authors found helpful in their website review. The User Experience Librarian and the Web Designer/Developer worked together to ensure that the Libraries' systems statuses are shared in the Libraries' most visited research tools, the Database Finder and discovery service, Primo VE (Figures 5 and 6). Not only are these tools frequently used, they also support sharing system status information at the point of need and where a researcher is likely to encounter an issue.

Figure 5. Systems Statuses embedded in the Libraries' Database Finder A-Z list

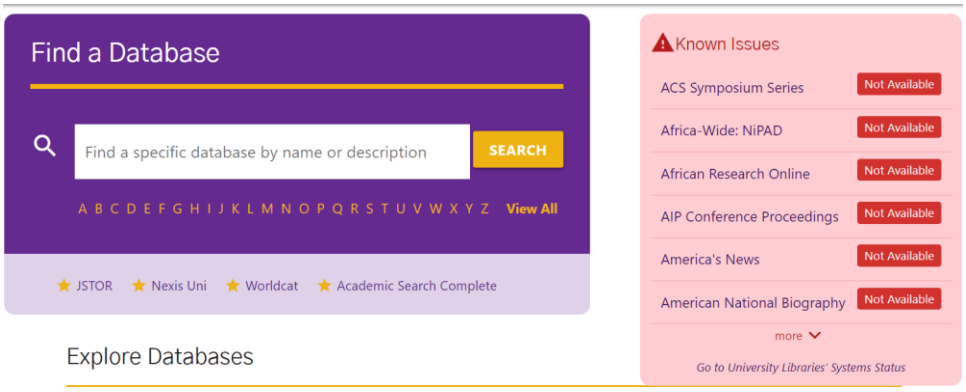
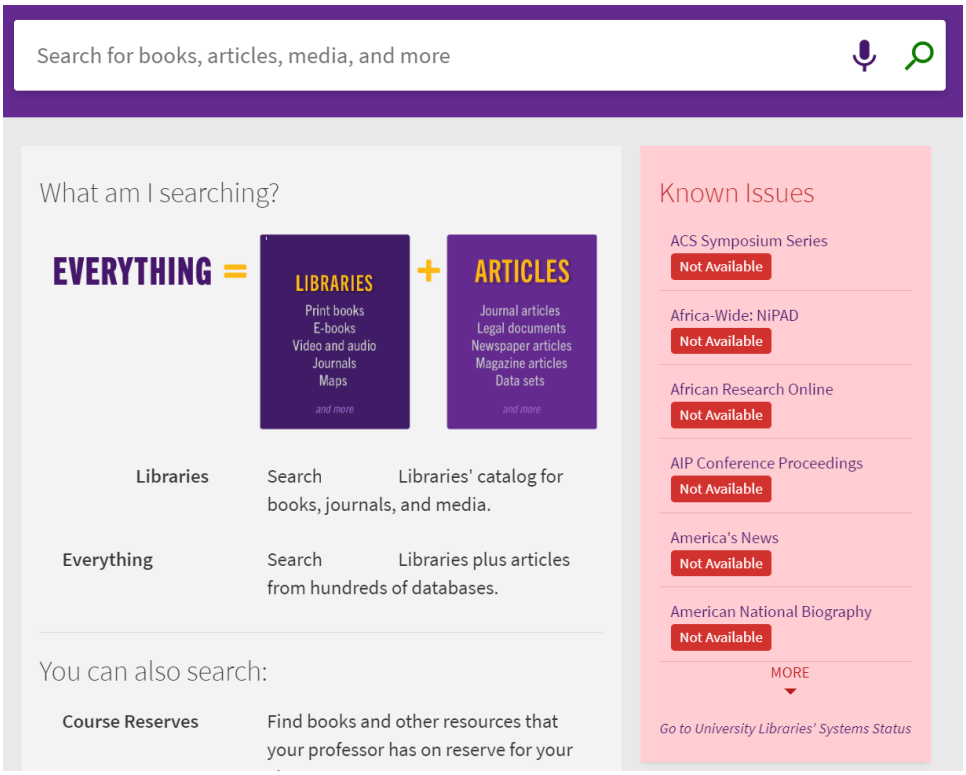
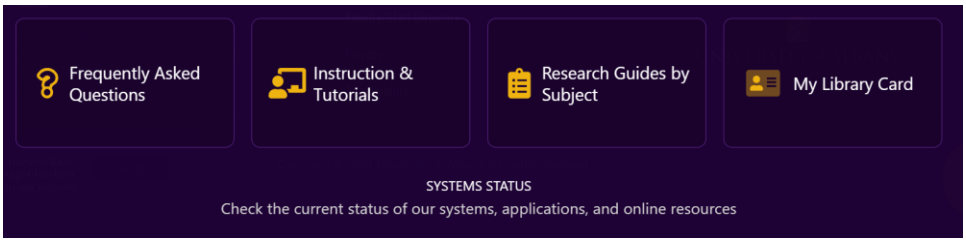


Figure 6. System Statuses embedded in the Libraries' discovery service, Primo VE



A maximum of six non-normal statuses are shown in the embedded Systems Status sidebar, with a link to see more within the widget or go to the dashboard. The Systems Status dashboard is linked on several publicly available Frequently Asked Questions pages and on the Libraries' research tools page (Figure 7).

Figure 7. Systems Status on the Libraries' Tools page



The Discovery Services Librarian was the primary contact in Technical Services for tickets, issues, and questions related to electronic resources, with the Head of Resource

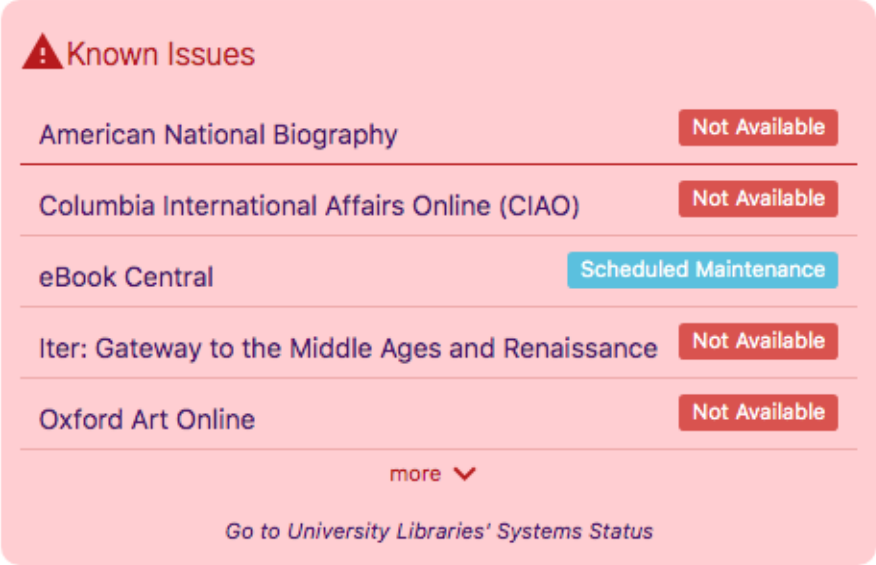
Management as support if needed. Initially, these issues were reported through LibAnswers via Reference Librarians but later came directly from researchers using a Report A Problem link in the Libraries' discovery service.

The Discovery Services Librarian and Head of Resource Management agreed on what statuses to use for specific issue types to ensure consistency in how they are applied. In collaboration with the Director of Collections, they also developed some standardized language for COVID-related cancellations to make sharing these statuses more efficient. System statuses can be added, edited, or removed with just a few clicks and in under a minute for a simple, standard message. Custom messaging for statuses can be added in as little time as it takes to craft the message itself. Actually adding, editing, or removing the system statuses in the Springshare tool itself is a very quick, simple process. The responsibility for updating and maintaining the statuses relies primarily with the Discovery Services Librarian and Head of Resource management, though two other staff members also assist with troubleshooting and posting statuses as needed.

The User Experience and Discovery Services Librarians launched the System Status Management tool in a two-step process. The Technical Services team first added the status updates into their workflow. This gave them time to adjust to creating posts to communicate information about databases, such as outages, planned maintenance, and solutions to access issues. The Head of Reference and Research Services held a forum for all reference librarians presenting the new tool and discussing how to incorporate it into work at the Reference and Research Desk.

Once the dashboard was live for internal use, the Web Designer/Developer and User Experience Librarian brought draft widgets to the Web Development Committee and Online Public Services Committee for review (Figure 8).

Figure 8. Draft Widget presented to the Online Public Interface Committee



The committees discussed the locations and titles of widgets and what information to include on the widgets. The widgets were embedded on high-traffic web pages and officially launched to the public after these collaborative consultations.

Impact

As of June 2022, 386 online resources, tools, and library services are represented in the Systems Status Management portal. Since adopting this tool, the Libraries' have posted over 175 statuses for electronic resources, including 51 cancellations or ceased database notices and 88 access-related issues, updates, or scheduled maintenance announcements.

Publicly sharing the status of the Libraries' online resources and services using the Systems Status Management tool has positively impacted the University's campus community, librarians and staff throughout the Libraries, and the troubleshooting team in Technical Services in several ways.

Researchers & Campus Community

Public statuses support proactive information-seeking behavior by providing a dedicated page for all known issues and updates to online resources and services that did not previously exist. Posting system statuses for scheduled maintenance or outages allows library users to better plan their research activities, which is an added service that we were unable to effectively provide before. Once patrons have noticed the dashboard or widget, they know they can return there to find information if they encounter a system that is not working as expected.

During the COVID-19 pandemic, the library had to make strategic cancellations to eresources, resulting in a significant number of cuts to the database list. The system status dashboard allowed the library to be completely transparent with patrons regarding changes to the Libraries collections. The Director of Collections provided the following copy for the message:

> **As a result of the financial impact of the COVID-19 pandemic on the University's budget, the University Libraries have had to make some strategic reductions to our expenditures by cancelling resources, including this database.**
>
> - Reference librarians are available on chat to help you identify alternative resources. **https://albany.libanswers.com**
> - For more in-depth assistance, consider a virtual research consultation. **https://library.albany.edu/services/paws**
> - Subject librarians are also available for guidance. **https://library.albany.edu/find-a-subject-librarian**
> - In addition, the Interlibrary Loan service continues to provide article delivery and short term loans from a vast network of libraries and document suppliers on a local, statewide, national, and international basis. **https://library.albany.edu/ill/about**

> The University Libraries remain committed to supporting the information, research, and teaching needs of students, faculty and staff.

Beyond explaining why a resource is no longer available, alternatives are provided to help students and faculty continue their research tasks.

Public Services Staff & Librarians

Public services staff were trained on the internal system status portal (where applicable) and our public-facing portal. Centralizing updates from the Technical Services Department makes it easy to remember where to look, and bookmarks make getting there fast. Staff can quickly refer to the public portal or search for status posts on the fly when helping a patron. When librarians assist patrons over chat, they can copy and paste the URL to a status update directly into the chat box. The availability of status updates has led to librarians providing swift, reliable, and up-to-date information on technical disruptions with eresources improving the reference experience for patrons and staff.

The Libraries participate in *Ask Us 24/7*, a collaborative reference service between hundreds of libraries globally. The dashboard is valuable for cooperative librarians who provide reference services after hours and on weekends and holidays. In the past, these librarians would not have access to information shared through internal listservs about systems experiencing maintenance or unavailable. Cooperative librarians and public patrons alike can easily access the dashboard.

Technical Services & Troubleshooting

The Systems Status Management tool has been a boon to those involved in troubleshooting and addressing issues related to online resources. This system is user-friendly and intuitive.

Technical Services staff can immediately share updates or alerts as needed, rather than asking the Libraries' Web Designer/Developer to post an alert to the website. As the troubleshooting team has grown, it has been easy to train new people to share system statuses using this tool. Newly trained troubleshooters were able to begin adding, updating, and removing statuses after their initial introduction to the tool.

It has also greatly improved the ability of technical services personnel involved in troubleshooting issues related to accessing online resources to share information with public services staff, reference librarians, and the broader campus community. There is now one place to share issues with, updates to, and changes to the Libraries' services and resources. Multiple people may be investigating, troubleshooting, and resolving help tickets. The dedicated system status portal is the perfect tool for ensuring that everyone is aware of current or known issues, streamlining the troubleshooting and problem resolution process. Statuses for multiple resources can easily be shared simultaneously by using an umbrella collection created as needed, such as an entry for all JSTOR resources.

A beneficial feature of Systems Status Management has been the running history of statuses at the resource or service level and an aggregated history of statuses across all services. This feature has highlighted some routine issues or recurring questions that have since become Frequently Asked Questions entries on the Libraries' website to help researchers and librarians at the point of need proactively. Anecdotally, the Technical Services Department has received fewer duplicate reports of issues and fewer recurring questions as the Systems Status Management tool has become more firmly established, the Frequently Asked Questions Entries have grown, and librarians and researchers are more familiar with the system status portal.

Lessons Learned & Opportunities for Improvement

Ensuring consistency in language, tone, and style was much easier when fewer people were managing systems statuses. As that team has grown, it has highlighted the need for a set of templates for the types of statuses that get shared most frequently, such as temporary service interruptions. Having templates available also helped Technical Services staff new to adding statuses feel more comfortable communicating these sorts of issues to the public, which is a new experience for many of them.

As the use of system statuses has matured and more statuses have been added, it has prompted discussion of how long certain statuses should remain on the page. For some statuses, such as temporary access interruptions or scheduled maintenance, when to remove a status is fairly obvious. Those statuses are removed when access is restored or when scheduled maintenance is completed. However, this is more ambiguous regarding statuses related to subscription cancellations or ceased databases. These statuses have remained in the portal for over a year in some cases, and it leads to the question of whether the system status dashboard is the best place for these messages in perpetuity. The relevance of these statuses to researchers and faculty members as time passes is debatable. While there is no limit to the number of statuses that can be active at any given time, there may be a "crowding out" effect, where new or timely status updates are less visible because of the number of persistent cancelled or ceased statuses.

Now that the System Status Management tool has been in use for over a year and there is ticket and status-related data available, the User Experience Librarian is beginning to explore more formal ways to assess the impact of using this tool to share system statuses. This assessment will include questions related to (1) correlations between reference questions, tickets forwarded to the Technical Services troubleshooting team, and statuses; (2) patterns and trends in

statuses for specific databases or publishers; and (3) feedback from constituents within the Libraries and the campus community.

Conclusion

Sharing system status updates with researchers and the campus community is one way libraries can increase transparency, improve the reference and research experience, and communicate with their user communities. Incorporating system statuses in several frequently used research tools, such as the A-Z list and discovery service, as well as in FAQ or help pages ensures that system status information is readily available to researchers at the point of need.

Springshare's System Status Management tool is helpful for libraries that already use LibAnswers, but the framework of posting system status updates can be managed using other tools. Similar pages can be created using Wikis, web pages in the content management system currently used for the library website (such as Drupal or WordPress), a LibGuide, or an alternative freely available, open source or subscription system status tool. For libraries just starting, it may be beneficial to see if there are existing system status dashboards or practices in place elsewhere on campus. It may be possible to borrow existing templates or gain access to a subscription product already in use.

While alternative platforms (such as content management systems, LibGuides, Wikis) are useful for communicating with constituents, they may not offer the same tracking, history, and embed ability as a dedicated System Status tool. However, the goal is to have a central location for updates that can be shared with staff and patrons to improve user experience, and there are several ways to accomplish that.

References

American Library Association. (2018). *Social Media Guidelines for Public and Academic Libraries*. https://www.ala.org/advocacy/intfreedom/socialmediaguidelines

Association of Research Libraries. (2018). *Principles of Membership*. Association of Research Libraries. https://www.arl.org/wp-content/uploads/2019/05/2018.04.24-PrinciplesOfMembership.pdf

Association of Research Libraries. (n.d.). *Guiding Principles.* Who We Are. https://www.arl.org/who-we-are/

Bazeley, J. W., & Yoose, B. (2013). Technical services transparency: Using a LibGuide to expose the mysteries of technical services. *Library Resources & Technical Services, 57*(2), 118-127.

Biswas, P. (2021). What's in a name? Technical services and its aliases. *Technicalities, 41*(5), 7-12.

Conger, K. (2021, Oct. 6,). Outage Tied to String of Errors. *The New York Times*, pp. B3(L).

Davis, J. Y. (2016). Transforming technical services: Evolving functions in large research university libraries. *Library Resources & Technical Services*, *60*(1), 52-65. https://doi.org/10.5860/lrts.60n1.52

Elguindi, A. C. & Schmidt, K. (2012). *Electronic Resource Management: Practical Perspectives in a New Technical Services Model.* Chandos Publishing.

Feedback. (2013). *Library Journal, 138*(7), 12. https://www.libraryjournal.com/story/feedback-letters-to-lj-april-15-2013-issue

Fisher, W. (2003). The electronic resources librarian position: A public services phenomenon? *Library Collections, Acquisitions, & Technical Services, 27*, 3–17. https://doi.org/10.1016/S1464-9055(02)00303-2

Gap between technical and public services librarians. (2021). *InfoScience Today*. https://www.infosciencetoday.org/type/articles/gap-between-technical-and-public-services-librarians.html

Google Trends. (n.d.a). *is facebook down? - Explore.* Google Trends. https://trends.google.com/trends/explore?hl=en-US&tz=240&date=2021-01-01+2021-12-31&q=is+facebook+down&sni=3

Google Trends. (n.d.b). *is the ship still stuck? - Explore.* Google Trends. https://trends.google.com/trends/explore?hl=en-US&tz=240&date=2021-01-01+2021-12-31&q=is+the+ship+still+stuck&sni=3

Hariri, N., & Norouzi, Y. (2011). Determining evaluation criteria for digital libraries' user interface: A review. The Electronic Library, 29(5), 698-722. https://dx.doi.org/10.1108/02640471111177116

Harley, A. (2018). *Visibility of System Status.* Nielsen Norman Group. https://www.nngroup.com/articles/visibility-system-status/

He, P. W., & Knee, M. (1995). The challenge of electronic services librarianship. *Reference Services Review, 23*(4), 7–12. https://dx.doi.org/10.1108/eb049260

Hiatt, C. D. (2015). Technical services is public services. *Technicalities, 35*(5), 8-10.

Hookway, J. (2021, March 28). Suez Canal: How the Ever Given Cargo Ship Got Stuck and What We Know; As trade disruptions multiply, engineers are scrambling to refloat the vast 1,300-foot vessel. *Wall Street Journal (Online).* https://www.proquest.com/newspapers/suez-canal-how-ever-given-cargo-ship-got-stuck/docview/2505899900/se-2

Inal, Y. (2019). Heuristic-based user interface evaluation of the mobile centralized doctor appointment system: A case study. The Electronic Library, 37(1), 81-94. https://dx.doi.org/10.1108/EL-06-2018-0114

Isabel, M. S., Theo J.D. Bothma, & Koos JW, d. B. (2018). Evaluating the usability of the information architecture of academic library websites. *Library Hi Tech, 37* https://doi.org/10.1108/lht-07-2017-0151

Laskowski, M. S. (2015). Technical services for changing times: Adjusting our image, our skills, and our mission. *Library Leadership & Management, 29*, 1-9.

Mahmood, K., & Richardson, John V., Jr. (2011). Adoption of web 2.0 in US academic libraries: A survey of ARL library websites. *Program, 45*(4), 365-375. https://dx.doi.org/10.1108/00330331111182085

Marjo-Riitta Aitta, Kaleva, S., & Kortelainen, T. (2008). *Heuristic evaluation applied to library web services.* New Library World, 109 https://10.1108/03074800810845985

Mirza, A., Júlia Ledur, & Mellen, R. (2021, April 4). The mammoth operation behind freeing the Ever Given. *The Washington Post*, p.A20.

Mortimore, J. M. (2017). Promoting a service culture across technical and public services: Lessons from electronic resource access troubleshooting and support. D. M. Mueller (Ed.). *At the Helm: Leading Transformation* (pp.498-505). Association of College and Research Libraries. https://www.ala.org/acrl/sites/ala.org.acrl/files/content/conferences/confsandpreconfs/2017/ServiceCultureAcrossTechnicalandPublicServices.pdf

Murdock, D. (2010). Relevance of electronic resource management systems to hiring practices for electronic resources personnel. *Library Collections, Acquisitions & Technical Services, 34*(1), 25–42. https://doi.org/10.1016/j.lcats.2009.11.001

Neill, T. (n.d.). *Is this ship still stuck?* istheshipstillstuck.com. https://istheshipstillstuck.com https://perma.cc/5YWZ-FNUH

Neill, T. (2021). *Inside a viral website.* Not Fun at Parties. https://notfunatparties.substack.com/p/inside-a-viral-website https://perma.cc/7VH5-HH2K

Nielsen, J. (2020). *10 usability heuristics for user interface design.* Nielsen Norman Group. https://www.nngroup.com/articles/ten-usability-heuristics/

Resnick, T. (2009). Core competencies for electronic resource access services." *Journal of Electronic Resources in Medical Libraries, 6*(2), 101-122. https://doi.org/10.1080/15424060902932185

Rauhala, E. (2021, Mar 29,). The best memes about the big, stuck ship. *Washington Post* https://www.washingtonpost.com/world/2021/03/26/suez-canal-stuck-ship-memes/ https://perma.cc/D8KT-FCH7

Raward, R. (2013). Academic Library Website Design Principles: Development of a Checklist. *Australian Academic & Research Libraries, 32* https://10.1080/00048623.2001.10755151

Resnick, T., Ugaz, A., & Burford, N. (2010). E-Resource helpdesk into virtual reference: Identifying core competencies." *Reference Services Review*, *38*(3), 347-359.

Schmidt, A., & Etches, A. (2014). *Useful, usable, desirable: Applying user experience design to your library.* Chicago: American Library Association.

Skinner, D. G. (2016, June 26). *E-team workflow: A case study in improving electronic access troubleshooting* [Conference presentation]. American Library Association Annual Conference, Orlando, FL, United States. https://digitalcommons.georgiasouthern.edu/lib-facpresent/26

Stachokas, G. (2013). Electronic resource management: functional integration in technical services. *Proceedings of the Charleston Library Conference*. https://dx.doi.org/10.5703/1288284315290

Thoden, K., Stiller, J., Bulatovic, N., Hanna-Lena Meiners, & Boukhelifa, N. (2017). User-centered design practices in digital humanities - experiences from DARIAH and CENDARI. ABI Technik, 37(1), 2-11. https://dx.doi.org/10.1515/abitech-2017-0002

Whitfield, S. (2021). Evidence-based e-resource management. *Computers in Libraries*, *41*(2), 22-26.

Yee, V., & Nagourney, E. (2021, March 29). Suez Canal Bottleneck Disrupts Global Deliveries, Prompting Syria to Ration Fuel. *The New York Times*, p.A9.