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Library IT Management in Times of Crisis

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Abstract

Crisis and disaster can strike at any time. During times of crisis, IT departments become even more vital parts of the organization by empowering libraries to recover and respond to challenges. At such times technology concerns, as well as leveraging technology to ameliorate the effects of a crisis, should be a major focus for libraries. This issue of *Library Technology Reports* (vol. 57, no. 7), "Library IT Management in Times of Crisis," will describe different crisis effects, ways in which technology can assist in responding to them, and issues for library technology managers to be aware of.

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Chapter 1

What Does a Crisis Look Like?

The word *crisis* invariably evokes an emotional response. It's a strong word. The fear of crises is rooted in a fear of chaos—a fear of situations that challenge our budgets, our timetables, and even our ambitions. A crisis can mean layoffs, as happened too often during the COVID-19 pandemic.[1] It can mean the loss of valuable artifacts and spaces, as happened during the 2018 Kansas State University (K-State) Hale Library fire.[2] Invariably a crisis means loss, even if there is something to be gained during recovery.

Another part of our reaction to a crisis is fear of the unknown. Chaos goes hand in hand with a lack of information . . . something particularly troubling to information professionals. Chaos is about change and uncertainty. No report like this can prepare anyone for every eventuality, just as it cannot mitigate their losses from a crisis. But it can help other library IT managers and would-be library IT managers use some of my experiences with crises to help them prepare for the next one of theirs. My goal is to lay out things to consider and prepare for, rooted in experience.

The most important thing for you to keep in mind is that, by its nature, a crisis is a temporary condition. If you find yourself facing one, hang in there. It may not always feel like it, but you will get through it. Also bear in mind that you will make missteps. I made plenty of them, and none of them was the end of the world. You just need to get up, dust yourself off, and move forward.

When we talk about managing library IT during a crisis, we should start by defining what is meant by a crisis. In my career I have led library IT departments through two events that I would describe as crises: the 2018 fire at K-State's Hale Library, and the still-extant COVID-19 pandemic at Washington University Libraries. These represented very different types of crises, yet they presented some notable similarities in the challenges they furnished to staff and patrons alike. In both cases access to the library spaces was disrupted, which led to a disruption in services. This, I think, is key to defining a library crisis: a condition that leads to a significant and extended disruption in services for patrons, staff, or both. While I'm adding staff as part of that conditional, generally what we see is if services of some kind are disrupted significantly for staff, it will lead to services being damaged significantly for patrons as a consequence. During a crisis, services may be disordered due to a deterioration of conditions at the library itself, a deterioration of conditions at its hosting institution (if it has one, as would be true of an academic or special library), or a deterioration of conditions in its locality. As an example of the first and second situations, the fire at Hale library caused damage to the library itself, but it also knocked out the university data center which was in the basement of the main library building. That one-two punch in service degradation would have serious repercussions for the initial recovery efforts, as we will discuss. The COVID pandemic brought with it degradation of some available university and local services, but those reductions were limited and invariably a consequence of the need for social distancing, pressure on networks due to remote work, and caution in materials handling. Far more serious local issues have come about from adverse weather events, such as the severe flooding that struck the Iowa City and Cedar Rapids areas during my last year at the University of Iowa in 2008. The extent of the flooding meant that not only were the flooded buildings themselves affected, but also electricity, networks, and other utilities.

The response by a library to a crisis is often initially defined by the amount of preparation, if any, the library is able to engage in. The COVID-19 pandemic provided several weeks of preparation and ramp-up time, although it was not entirely clear to the leadership elements at Washington University Libraries in

the earliest weeks just how serious the situation would become. However, the libraries, at the instigation and under the leadership of the university librarian, began discussions and broad strokes planning shortly after the first media indications of a potentially serious situation. This planning proved indispensable when the trajectory of the crisis suddenly and rapidly escalated, leading to the removal of most staff from campus in March 2020.

Conversely, the fire at Hale Library was entirely unexpected, catching the full university community by surprise. There had been significant and highly successful general disaster planning promulgated at K-State Libraries for some time. However, when those plans were drawn up originally, they had not included strategies for safeguarding the digital infrastructure, and such considerations were not introduced into later refinements of the plan prior to the fire. Even if they had been, they might not have predicted the full scope of the consequences of a library fire to the university IT infrastructure due to the presence of the data center in the library basement.

In both cases our library IT departments had to pivot quickly to practical action. In the first case, some planning and preparation had already transpired for the specific event, but those deliberations had to be translated into action with unexpected speed. In the second case, there was no warning, and the existing planning by the library, while highly successful, focused on immediate, physical disaster response efforts. That meant that there was limited preparation for the library IT implications of the fire.

One takeaway from these situations is that libraries should have a technology disaster plan, or have a substantial technology element integrated into their broader organizational disaster plan. Such a disaster plan is most useful for disasters that occur as a surprise, providing technology departments little or no opportunity to perform more specific, situational planning prior to an actual response. While each organization will have unique needs, the rest of this report can assist in crafting a technology disaster plan as a way to assist in future crisis management.

Notes

1. For more details on the effects on libraries from COVID-19, see Steve Zalusky, *State of America's Libraries 2021: Special Report: COVID-19* (Chicago: American Library Association, 2021), www.ala.org/news/sites/ala.org.news/files/content/State-of-Americas-Libraries-Report-2021.pdf.
2. Jason Tidd, "After Fire Closes K-State's Hale Library, Damages 'Great Room,' KU Steps in to Help," *Wichita Eagle*, May 25, 2018, www.kansas.com/news/local/education/article211970424.html.

Chapter 2

Triage and Immediate Challenges

The first task in either the lead up to, or after the onset, of a crisis situation is assessment. The extent of the crisis must be assessed and, as much as reasonably possible, the implications of the crisis extrapolated. There will be things that get missed at this phase . . . it is simply impossible to predict everything, although experience with crisis management is helpful. With luck and foresight, there will be some existing disaster planning in place to use as a guide. If such is not the case but there is time to plan before direct action is required, putting together a list of considerations and a game plan is very useful. In those cases requiring a more urgent reaction, assessing the totality of issues and concerns may need to happen concurrently with triage.

Triage represents the first practical steps taken to ameliorate a crisis situation. Triage requires action to be taken on the most critical and immediate problems while other, less critical problems are then queued for later action. It is at this point that the issues that arose from an assessment of the crisis are ranked based on how immediate a problem they are, how serious a problem they are for the library overall, and how much effort will be required by the existing staff to solve them. This provides an IT department with a basis for prioritizing work. Generally, there will be immediate work, such as re-establishing certain critical systems, or an emergency issue or reissue of equipment, which will take precedence. Once the most urgent work is done, a library IT department can then proceed to tackle the rest of the queue.

Generally, of most urgent concern will be critical systems that must be restored. In those libraries I worked in, the most critical systems to recover were the website and EZproxy (or whatever proxy tool is being used to facilitate access to the library's digital resources). However, there can be complications to standing these systems back up. At K-State, after the fire, many university systems, including identity management, were knocked out. Without an effective authentication method, it took some time to stand our EZproxy instance back up. However, this became an opportunity. At that point EZproxy was one of the few systems we had not migrated from the university data center to Amazon Web Services (AWS). Since work had to be done to reactivate EZproxy anyway, it proved to be a propitious time to migrate to an AWS virtual machine and replace the old LDAP authentication with Shibboleth authentication. By migrating our proxy instance, we were able to get it back online more rapidly than otherwise would have been the case, since the systems from identity management were among the first recovered by K-State central IT as it carried out its herculean efforts to respond to the fire. Other hosting services took longer to recover. Close coordination with acquisitions was required, however, so that vendors could make the necessary IP address change as rapidly as possible.

Another immediate concern is communications. Depending on what happens with local systems, communications can rapidly become a challenge. At K-State, once the identity management systems went down, university users lost access to e-mail and the university's Rocket.Chat application. It became imperative to re-establish communication, using the oxygen mask model (take care of yourself first so that you can help others). Library IT first re-established intradepartmental communication via a free Slack account before standing up a copy of the internal library wiki on Amazon Web Services that could be used for both broadcast and two-way communication by employees.

For many crises immediate concerns will include equipment issues. In those cases requiring employees to change locations (as happened with both the

K-State Hale Library fire and the COVID-19 conditions at Washington University Libraries), there will generally be a need to distribute, and potentially procure, equipment on an expedited basis. In the case of the Hale Library fire, many computers were rendered inoperable or inaccessible . . . and often both. The libraries purchased a large number of new laptops to be distributed to employees.

In the case of the COVID-19 crisis, the university ordered departments, such as the libraries, to send employees home within a specified time frame, but staff computers were still serviceable. Policies had to be quickly established to determine if staff could take any office or desktop equipment home, while those employees who needed them were provided checkout laptops and laptops from the now-unused computing labs for home use. In the case of both crises, however, a process needed to be put into place to rapidly reimage the computers that needed to be issued. A system of distribution was planned out as well, with appointment-based distribution proving to be the most effective model. At K-State, based on a suggestion by one of the developers, the entire department set dates to come together and assist the desktop support team with the imaging of devices in an assembly-line arrangement that had been expertly conceived and mapped out by the desktop support supervisor and her team. At Washington University Libraries, where it was a priority to send staff home as soon as possible and the volume of devices to reimage was lower, the equipment support unit ably handled the reimaging process and worked together with its reporting chain to establish scheduling for those staff identified in the organizational planning process as needing a laptop.

Due to human factors, distribution always poses at least a limited challenge. Inevitably some employees will miss, ignore, or skip appointments, causing congestion to a schedule that may already be severely compressed due to circumstances such as the required compliance time line we faced at Washington University for leaving the office. In some cases this will necessitate a backup process for distribution, in which drop-ins who miss the established schedule are required to collect their devices in the background, with any additional setup help they need being provided later through remote assistance.

As with any expedited process, the assistance of other departments is crucial to success. It is departmental leaders who will need to work with their staff to help them make appointments and comply with organizational needs. This is especially true with the accountability aspects of issuing equipment. At Washington University Libraries, the IT department didn't have the staffing or the time to track any equipment that staff took home from the office. Department heads were tasked with tracking the disposition of this equipment using spreadsheets provided by the IT department.

Environmental factors must also be taken into account . . . especially when handling procurement. If new computing devices and peripherals are being acquired through the university, there may be trouble in having large orders filled immediately (especially if other departments have also been affected by the crisis and are simultaneously pursuing equipment procurement). Shipping delays may cause further issues (a situation seen as the COVID pandemic matured). In the case of the COVID-19 situation, while Washington University Libraries initially made use of existing computers, the IT department did acquire a small number of cellular hot spots to assist staff who did not initially have internet access. Starting in the early days of the pandemic, stocks of many devices that facilitated remote work quickly dried up, making finding the hot spots a time-consuming challenge. As staff were reintroduced to the library and the need for webcams and similar peripherals increased (since staff desktops generally did not have the webcams needed for them to participate in the now ubiquitous Zoom and Teams meetings), it became difficult to find those models of equipment that had been ordered in the past. At such times, as new models are acquired, IT staff must exercise caution. We at Washington University libraries experienced a few incidents of items proving to be of low quality or possessing baffling limitations (including an order of webcams that did not have built-in microphones). Specifications must be scrutinized carefully, preparations made for inevitable returns of some products, and pricing expectations adjusted for a shortage environment.

As new equipment is issued, staff will still require access to specialized applications they utilized prior to the crisis. This is especially the case with those employees using platforms that require old-fashioned local client applications, such as ILLiad, or some of the older catalogs. Often installing these packages can prove to be a significant time commitment. Another way to handle this issue is to set staff up to remote into their work desktops (where such desktops still exist and have power). This was the primary method used at Washington University Libraries. All library staff were added to the library VPN at an early point in the COVID crisis, allowing them to reach their work computers via remote desktop. This mechanism generally worked well, although occasional power outages and one update issue that affected a handful of computers required library IT to work with the university IT teams that were allowed to operate on campus (and later with library building services) to physically restart desktops as needed. Such remote connections always have at least some intermittent problems, however, and providing assistance to staff

experiencing these transitory issues as they cropped up became a regular feature of desktop support.

In the case of Washington University, where office devices were still functional, employees were given an opportunity to take a limited amount of equipment home, as has been previously noted. This was permitted only with supervisor approval and if employees chose to accept responsibility for their equipment. Additionally, since this was a remote work environment, those individuals who elected to use their personal computing devices were encouraged to do so as per university and library policies for remote work.

One technical issue not to be overlooked is the data in the library catalog. In the case of the COVID-19 pandemic, most of the general information was unchanged, except for the temporary addition of some information through a sideways web development process, which is discussed a bit later in this report. In the case of K-State, however, the libraries were concerned that individuals might mistakenly try to enter the library in the belief that they could find the book they needed there, despite the building being shut down. Work was done to temporarily remove the Hale Library location from all physical media catalog entries and indicate that items from the Hale Library location were temporarily unavailable.

Chapter 3

Transitioning to Digital Services

The simple fact of the matter is that libraries are increasingly digital. Academic libraries in particular have shifted most of their acquisitions toward digital access as opposed to accumulating physical collections. While the reliance of faculty and students upon digital as opposed to physical resources varies significantly by academic discipline, many academic users now reach journal articles, and even books, through digital means. This fact makes responding to some crises a bit more palatable, as long as the core digital systems that provide this access remain available or can be re-instantiated rapidly.

However, a library provides many services beyond the digital—not only the obvious access to physical materials, but also access to expertise as well as to study and classroom space. Inevitably, there are employees who see libraries through an entirely traditional lens and who experience great difficulty in adjusting their outlook to accommodate a crisis-based shift in operations that temporarily situates the library away from physical operations. There will also be employees whose jobs consist entirely of supporting physical resources of one kind or another and who feel understandably afraid for their employment prospects during the crisis. They may also reasonably feel afraid of the prospect of being required to return to the library if danger still exists there. These concerns must be taken into account when planning out from and through a crisis.

The two most serious crises that I have been involved with in my career both interrupted physical access to the library and its services. This created situations where the library had to pivot further toward digital resources in order to provide the best service still possible to patrons. In both cases the library websites were used effectively to communicate with patrons about changes to services. Both institutions used an alert system built by the library IT department. At K-State a modal (a dialog box that must be clicked through before the web page will respond) was added to the website by library information technology services to pass early, critical information (namely, the closure of the main library building) along to users. This was a messaging solution that had to be enacted with care, however. Pop-up dialog boxes are one of the most obnoxious features of the modern web, and users who were already upset at the temporary loss of the library did not need to have their patience tried further. In the case of the modal in question, library IT designed it to use the Web Storage browser API to remember whether a particular user had already seen the modal. If they had, it was then programmatically deactivated to preserve a positive user experience.

Both libraries also already had active chat services that helped answer questions. Reference librarians at both institutions moved their normal reference and instructional activities nimbly to alternative operations. At K-State, this involved some remote engagement, as well as some use of other spaces on campus. At Washington University Libraries, this meant a nearly complete transition from in-person to using software such as Zoom or Teams. These situations also proved to be an opportunity for reference and instruction librarians to branch into the more asynchronous modes of instruction that digital technologies readily empower.

Special collections departments will require technology support during a crisis, although this support may be as variable as the crises themselves. At K-State, after the fire, library departments were soon re-situated all over the campus as generous departments provided space and resources for Hale Library employees to do their work. Special Collections quickly set up an alternate branch for itself and established hours for researchers. However, other than some equipment in the library that needed to be tested and triaged by IT, its technology needs were mostly met in the same way as other departments: through the acquisition of new

computers to use for work. At Washington University Libraries, while the spaces themselves were undisturbed, normal visits by students and researchers were interrupted, requiring Special Collections librarians to shift to remote methodologies . . . something they did with admirable skill. These methodologies included using document cameras to conduct remote classes and viewings, which for IT meant equipment consultations. Given the stress on the technology budget due to pandemic-related expenses and unrelated major projects at the time, Special Collections purchased much of the equipment it needed from its own funds.

This circumstance highlights the way Washington University Libraries now manages technology purchases. All technology purchases must go through a process of consultation with and approval from library IT (most of these are paid out of the technology fund) after approval has been granted by the department's own reporting chain. This is an effective model for a variety of reasons. It helps ensure interoperability of various software and hardware purchases, it ensures that IT is aware that the technology (which they will generally be asked to support at some point) is being acquired, it helps departments potentially avoid wasting any of their own money on equipment or software that the libraries (or university) might already possess but of which the departments were unaware, and it makes the job of handling the budget somewhat more manageable.

Under circumstances with disruptions for those trying to access a library's physical collections, a corresponding escalation in interlibrary loan demand is unavoidable. At K-State, while the collection was being cleaned, the interlibrary loan team saw a significant increase in requests. At Washington University the head of access services estimates that ILL borrowing has been elevated by 25 to 30 percent during the pandemic. Library IT departments should be prepared to deal with connectivity problems as interlibrary loan teams move workstations or do some of their work remotely. It may be necessary to acquire new scanning equipment or secure access to scanning equipment from another entity for the short term. Libraries must also be prepared for the consequent inflation of interlibrary loan costs during the crisis.

Crisis situations sometimes come bundled with unexpected opportunities. During the COVID-19 pandemic, HathiTrust activated its Emergency Temporary Access Service (ETAS). This gave libraries the ability to compensate for the inaccessibility of their physical collection through the use of HathiTrust digital holdings. Through the program, participating libraries were granted access to digital copies of those holdings they had previously reported to HathiTrust as overlapping with their holdings. The program was an outstanding service generously offered by HathiTrust, although communicating its existence to users was a challenge. Many libraries, including Washington University, used some temporary mechanism to add these holdings to their catalog. At Washington University the appropriate data was downloaded from HathiTrust and a client-side application was created to identify catalog holdings in search results that matched overlapping items from HathiTrust. This application was injected into the catalog via a process I refer to as *sideways web development*. This method allows developers to integrate wholly separate applications in the view, or user-facing, layer of web code, so that disparate services can be integrated without making major changes to code bases and without going to the trouble of creating single use case modules for those applications that will accept modules. In the case of our catalog, when matches were found, a link to the match in HathiTrust was programmatically added to the catalog results. This made it easy for users to find their way to the HathiTrust items without needing to know anything about the ETAS program. The ability of the library to perform sophisticated custom development on the fly thus became an important element to providing users with the best experience possible under difficult conditions. As per Washington University's agreement with HathiTrust, the service and the corresponding link engine were deactivated when curbside access to the library collections was initiated.

The utility of this kind of custom development capacity is not limited to externally facing services. At K-State an enormous number of print materials had to be removed from Hale Library so that they could be triaged and cleaned if they were salvageable. In the immediate aftermath, library employees were using custom-made spreadsheets to record information about the status of each item so they could track its condition and disposition. The energy of their response was admirable, but what was needed was a more consistent and universal mechanism for tracking the volumes in question. Library IT rapidly built them a custom, database-driven application with a clean, simple user interface that was fully searchable. During the build process, there was significant interaction between library IT and the employees conducting the tracking work, as well as data cleanup by those same employees to help improve the consistency of the records in question before the application went live. Some of the work done on this data is the subject of a chapter of my book *Library Web Development: Beyond Tips and Tricks*. (For those interested in sideways web development, there is also a chapter devoted to that approach.)[1] This application helped the employees at K-State Libraries more effectively track the libraries' valuable physical holdings as they moved along the multiple, sometimes parallel, routes of the cleaning and reshelving pipelines.

The recovery phase of a crisis is another place where custom development work can be helpful. When

the initial phase of the Hale Library reopening began, administration wanted to highlight the new study and collaboration rooms present on the first floor. This was an opportunity for the same technology that was used in the library's pre-fire responsive map (Stacks Guide 2.0) to be used to create a dynamic first-floor map of the new spaces. The map resized seamlessly with the screen displaying it, allowing it to work on mobile devices as well as desktops. Just like the pre-fire map, it dynamically displayed information about the floor in a way that could be integrated with other applications. It served up information about each individual reservable room and provided linkouts to the reservation form. By use of a grid-based pinning jQuery library I had invented, location indicators and clickable zones were pinned to an invisible collection of columns and rows on the map so that those locations remained accurate even when the map was resized. The map visuals were crafted by the library's graphic designer, and the map served to accentuate the benefits of the first-floor portion of the redesign while projecting a technologically nimble posture for the libraries. It was a useful tool until other floors of the library were opened up after my departure from K-State, with the feature being subsequently replaced by a PDF map of all of the library floors.[2]

Sometimes the shift to digital will result in partnerships that reimagine traditional services. At Washington University Libraries, COVID-19 removed the ability of patrons to use the research computing lab at Olin Library. As demand grew, the Data Services department, which managed the lab, reached out to Library Technology Services (LTS) to see if there was some way that users could be given remote access to use the computers in the lab. LTS worked with Data Services to use the LabStats application and a special Active Directory group that LTS maintained in order to provide access to users who were moderated by Data Services. This made the computers and the unique software packages installed on them accessible to university users despite a lack of physical access in a model that some other library departments have subsequently taken a interest in.

Notes

1. Jason Bengtson, *Library Web Development: Beyond Tips and Tricks* (Chicago: ALA Editions, 2019).
2. Bengtson, *Library Web Development*.

Chapter 4

Challenges for Library IT

Communications

Library IT departments face a wide variety of challenges in responding to a crisis. Depending on the crisis, the most pressing hurdle may be communications. The fire at Hale created the most obvious communications issue when university communications tools were temporarily knocked out. That unforeseen problem required a quick switchover to non-university communication mechanisms in order to pull the IT department together so it could respond to the fire in a coordinated way. In other situations, however, the internet itself may be down. There are few substitutes for phone trees in the most severe crisis. However, it is worth noting that in the case of a major catastrophe, cell phone service may become congested. Some employees may not choose to have internet or even phone service at home. After the Hale fire, at least one employee showed up for work the next day, having no idea that a fire had occurred. It is a common impulse for some people, in lieu of communication, to physically go to their place of employment to seek information. In the case of a crisis where there is a serious communication disruption, it may be advisable, when possible, to station someone at or very near the physical site to provide information to people unknowingly showing up for work.

A larger communication question involves the amount and type of communication necessary to maintain team cohesion during a crisis and in its sometimes extended aftermath. The Hale fire reduced the library IT department to virtual communication initially, although within the first few weeks there were already events planned by individuals within the department that allowed everyone to gather as a group. Once the department was provided with new offices, on-campus meetings and other events quickly began to normalize. At the library level, all-staff meetings were increased from monthly to weekly frequency for a substantial period after the fire, and library administration worked to provide physical venues on campus for the meetings, while simultaneously facilitating Zoom access to them as well.

At Washington University, however, the COVID crisis has played out very differently. As of this writing, the library IT department is still working remotely, and virtually all interactions are via Zoom or Teams. As a direct consequence of this situation, the normally weekly departmental meetings are now daily morning meetings: a change necessary due to the lack of the normal interactions that occur freely as a result of colocation in the office. As of this date, four separate hires have been brought into the department during the pandemic. Three of these individuals remain and have never met their colleagues in person or seen their ostensible work spaces. In their case, the daily meetings have helped foster a sense of belonging, but regular managerial interaction, both through the normal one-to-one meetings and through more situational conversation, is essential to help them settle in under remote conditions.

Another facet to the communications issue is communicating with the rest of the organization. In both crises there was a significant technology dimension involved, so, as the department head, I felt it was important to make myself as available as possible for events. Sometimes this meant physical attendance; sometimes it meant virtual attendance. Sometimes these were formal all-staff meetings, and sometimes they were information sessions or informal staff chat events. While this wasn't always the case, not infrequently there were questions by library employees about the library technology response or the campus technology response. It was important to be there to answer such questions, even if the answer was "I'm not sure what has been done, but I'll look into it for you."

Beyond the library itself, library IT departments will need to interface with the rest of campus or the

community. The library needs to remain apprised of salient conditions outside of its walls. I was on a number of committees at both universities, some standing and some temporary, that dealt heavily with crises. All of them passed along status reports and solicited information from individual departments. I also frequently asked my colleagues in our library IT department to participate in specific committees or attend for me if I was unable to participate in a given meeting. Keeping those lines of communications open and healthy was essential for ensuring that the libraries weren't taken by surprise by a technical change or detail. They were also vitally important to the community that we were a part of so that campus IT could get feedback from us as needed.

One challenge in crisis communication is the question of communication versus action. It is sometimes underestimated how much work is involved in communicating and how much time it can take away from actually carrying out a plan of action. Even outside of a crisis, simply composing e-mails and other messages takes up a significant part of my day. Similarly, I have so many operative channels of communications that I have had to cut back on which ones I actively monitor. I am currently on so many Slack channels that, along with Teams, it would be almost a full-time job just to actively participate in them all. A crisis exacerbates this situation. As a result, IT staff may need to establish some boundaries regarding communication channels, with clear expectations about which of those channels will be most actively monitored. Similarly, composing communications may be something that other administrators are willing to assist with, either with a first pass or by helping you review a communication prior to sending it out.

It can be easy to underestimate the scope of effect for a particular change. I have definitely been guilty of that at times, leading me to undercommunicate. In crisis situations, lack of communication is often a source of anxiety for library colleagues, and library administration will have a particular need to be aware of major changes to the IT landscape. It can be useful, depending on the tempo of change, to schedule regular meetings or additional meetings with other administrators or your reporting chain.

Logistics

Closely coupled with the challenge of communication is the challenge of logistics. This is a significant issue in remote work environments when the need to work on or distribute equipment arises. It was exacerbated during the COVID crisis at Washington University Libraries by an inability to colocate even off campus and by slowdowns that occurred in shipping. Additionally, as noted earlier, some equipment became harder to find from vendors and sometimes became more expensive when it could be found. Sometimes unexpected problems cropped up, such as organizational leaders responding to calls for equipment needs well after a response deadline has passed. When packages arrived at Olin Library, they needed to be quarantined in order to safeguard against any surface transmission of the virus. This required Library Technology Services to plan carefully for potentially extended shipping times. Some of these difficulties also meant that on several occasions I ended up having to pick up or deliver items at private homes.

Throughout the COVID crisis, the nature of equipment needs changed. Remote work created an organizational dependence on productivity tools like Teams and Zoom, which require a webcam in order to be useful with a computer. In the early days of remote work, when most employees were using laptops, they had access to built-in webcams and microphones. However, as they returned to the office, they required webcams for desktop systems that lacked these peripherals, since not all staff had returned and certain elements of remote work continued. However, this also provided our department with an opportunity to plan ahead, since it is increasingly likely that Teams and Zoom will be a regular feature of future meetings for all library staff, even post-pandemic.

At K-State, recovering equipment from the interior of Hale Library after the fire became a significant logistics project. A great deal of digital hardware, from workstations to large monitors and everything in between, had been placed in a couple of triage rooms by the reclamation teams. This equipment had to be inventoried, sorted, and evaluated once the building could be re-entered safely. Complicating the problem was the presence in the building of corrosive soot from the fire, which took a toll on all of the computing equipment in the building. Even devices that had been spared soot and sprinklers, such as devices from the top floor of the building, were found to have hardware problems as a consequence of sitting through a Kansas summer in a building without climate control. One copier from the fifth floor, upon being opened by a technician, had marks inside the case where humidity had condensed and run down the cover, like rain on a window.

In such situations another logistics issue becomes dealing with the insurance companies. It is no secret that insurance companies would prefer to not pay out on claims, and a great deal of the work that we did within Hale Library was done to comply with strictures the insurance company required us to fulfill for payment. Remember that if a third-party service provider is recommended by the insurance company, its loyalty will be to the insurance company. Third-party work must be scrutinized carefully. In the case of the Hale fire, the company initially brought in to clean,

assess, and inventory the computer equipment inside the library provided spreadsheets that proved to be so inaccurate that when library IT and campus IT went into the building to begin organizing and assessing the equipment, the inventory had to basically be redone. The same company claimed that various pieces of equipment were fully reusable based upon a "sponge test" conducted on the exterior of the cases of the devices once they had been cleaned, ignoring the fact that the corrosive soot had, in many cases, been moving through the vents (and thus over the circuit boards) in the devices. This test also ignored the environmental conditions that a lack of climate control had subjected the electronic equipment to.

The compelling nature of photographs is useful in such instances. The main library server rack, which was moved out of Hale Library after the fire, showed obvious corrosion artifacts from the soot. One of the library IT sysadmins took copious and detailed pictures of the state of the server rack . . . images that were used in explaining matters to the insurance providers, among others. Numerous equipment failures by devices that were removed from Hale and repurposed also served as useful evidence of the effects of the fire.

In the case of both of these crises, a significant amount of new equipment had to be ordered. Such unexpected acquisition of equipment can create stresses in the library budget. At Washington University Libraries, this was exacerbated by expenditures related to other major projects scheduled around the same time as the outbreak of the COVID crisis. The environment of remote digital work meant that the situation remained suitable for projects such as the new Washington University Libraries website, but that also meant that expenses related to such projects continued unabated.

During the COVID crisis, logistical difficulties have proved to be as much about people as about equipment. Policies were enacted by Washington University and the libraries that established specific, and at times strict, protocols for coming onto campus. Staff had to self-test and go through certain training as well as getting permission from the libraries reporting chain in order to return to campus for any reason. External contractors, including vendors who had to be brought in to service printers and copiers, were required to go through a similar process. Library staff were needed to escort them during their work in Olin Library, meaning that provisions had to be made for someone from Library Technology Services or another team to be available on-site. Special provisions also had to be made to pick up or distribute equipment to remote workers, including those who left the organization or were newly hired. This sometimes meant going to someone's home or a meeting in a parking lot if access to the buildings was out of the question.

The Human Element

Onboarding during a pandemic can be a fraught experience. No fewer than four Library Technology Services staff members were added at various points during the pandemic. Of the three who still remain, to date not one of them has had a chance to meet all of their departmental colleagues in person. This has created a dynamic that will require what amounts to a second onboarding once the department returns to campus. They must still be familiarized with their eventual workspaces, issued keys, taught physical procedures, and allowed to begin the process of interacting face-to-face with library staff that they may know only through remote tools.

Even for existing staff, situations like the COVID pandemic are likely to be a challenge. Robbed of the physical routine of work, they can find it difficult to maintain focus and time lines. Morale is hard to maintain when colleagues can no longer see each other outside of a computer screen. Frequent virtual meetings that contain generous amounts of general conversation, while seemingly a bit wasteful on the surface, can be an indispensable tool in maintaining team integrity under such problematic circumstances.

However, there is no getting around the stress that goes hand in hand with a crisis. Especially in the initial phase of a crisis, staff may be asked to work extremely long hours in the service of solving complex problems. In the first days after the Hale fire, Library Technology Services staff worked long hours, often very nearly around the clock, to resolve a variety of technical issues. Such work is a zero-sum game; as exhaustion sets in, decision-making and quality of work inevitably suffer. Exhaustion, stress, and the other issues that go along with them exacerbate every kind of health issue and negative behavior.

A few days after the Hale Library fire, my health suddenly declined precipitously and, after finally going to an urgent care facility for the first time in my life when I began to experience some difficulty breathing, I discovered I had contracted a tick-borne illness. I had traveled just prior to the fire, spending some time in the woods, and the characteristic half-bull's-eye rash was a clear indication to the doctor of what had transpired. My reaction to the disease was severe, and the effects of the illness still linger. There is little doubt that the severity was increased by my mental and physical condition at the time. This highlights the critical importance of self-care for leaders in crisis situations. I admit that this has never been a strength of mine. I tend to be quite concerned for the welfare of my colleagues in the IT department, but in my own case I have a tendency to just want to power through difficult circumstances. This becomes a less tenable solution as a crisis situation shifts to extended alternative operations and often sets a poor

example. While the first stage of a crisis response often demands extraordinary effort, that stage should be short-lived and followed by opportunities for rest and situational assessment. It is appropriate for the leadership to conspicuously work hard and share in the difficulties of a crisis, but it is equally appropriate for leaders to model a sustainable work-life balance in difficult circumstances and avoid creating implicit expectations of unsustainable effort.

Another source of stress for library staff in a crisis situation can be equity issues. I have seen situations where staff members felt insecure because certain positions were central to recovery operations while theirs were not. I have had difficult conversations with staff members who felt that they were being eclipsed because others in the department responded quickly to the rigors of a crisis but did not include them in a way they felt was adequate. I have heard staff members upset because they were working long hours performing unpleasant tasks while some persons in the library who already occupied privileged positions did not seem to be sharing in the collective difficulties of the crisis, even when there were jobs that they could have done to assist.

The COVID pandemic generated a host of unique equity concerns for library staff. Some positions were such that work could be conducted remotely almost as easily as on campus, while others revolved specifically around work with the physical collection or location. Some staff members were required to return to campus much earlier than others, potentially exposing them to greater risk of infection. There were staff who worked with deliveries, or books that had been returned: a potentially unnerving prospect in the early days of the pandemic when there was still considerable apprehension about the possibility of surface transmission of the virus. In most cases little could be done about these issues beyond the libraries scrupulously following the best available science and providing adequate protective equipment. But it was nonetheless important to recognize these feelings in staff and the stress they caused.

By the nature of crises, their timing is rarely convenient and their disruption of pre-existing plans only elevates the stress associated with them. When the fire struck Hale Library, extensive plans had already been drawn up for a new makerspace on the first floor. These plans were the result of months of work by a combined team of libraries and central IT staff. Numerous other projects and programs were heavily disrupted by the fire, which kept employees out of the Hale Library building for years. However, the fire also provided unexpected opportunities to expand the original makerspace plans into a much more comprehensive offering.

The COVID disruptions occurred at Washington University Libraries just weeks after a major migration of all of the libraries digital infrastructure from a local library data center onto services provided by campus IT. Dealing with inevitable migration issues was exacerbated by a variety of obstacles that included the transition to remote work. It also occurred during a period when a variety of other major projects and personnel changes were occurring. Like the surprise timing of the Hale Library fire, the timing of the COVID pandemic, even without its other complications, was a source of tremendous stress at organizations worldwide.

Transitioning to Alternative Operations

A challenge during such stressful circumstances is doing the work necessary to pivot away from emergency operations to the alternate operations that necessarily characterize a longer period of disruption. Part of the reason for this is that dealing with emergencies can become a habit. Too often in such situations I have found it increasingly difficult, in the time I had between dealing with more immediate concerns, to sit back and re-engage with normal administrative tasks. It was easy to fall into a rut, where I was balancing multiple serious, time-sensitive priorities in a way that made it difficult to reorder my thoughts so that I was managing time and tasks in a less crisis-focused manner.

However, as a crisis stretches into a longer-term event, the stress of emergency response becomes untenable. It also often causes essential planning and administrative work that characterize normal operations to be neglected. This last issue is one that I've seen play out at a number of organizations, where unusual and stressful operations (some were emergencies, while others were just major projects that required particular focus and effort) caused leaders to shift away from their normal planning and oversight roles and not return to them without intervention. Invariably, this lack of attention to those management fundamentals led to degradations in service. In such cases leaders need to make a conscious effort to begin to set aside time for planning and administration, even when it is difficult. As the tempo of the crisis slows, leaders may find themselves in a position to delegate more tasks, freeing up time for this purpose.

Organizations should seek to transition to alternative operations as rapidly as possible. Once initial response measures have been taken, with systems stabilized and staff mostly or completely able to do their jobs in their new circumstances, some key changes need to begin. In the first phase of a crisis, communication channels are often used in a less-than-structured way. Essentially, whatever modality is needed to communicate an issue to another key staff member

in a timely fashion is what is used. However, as operations shift away from emergency conditions, the organization should begin encouraging a more normative use of communication channels. IT departments in particular should begin encouraging individuals who have gotten into the habit of reaching out informally to colleagues about problems they need assistance with to return to using whatever ticketing system their department uses to track work. The department may want to consider discussing how it has been communicating during the early days of the crisis and using those mechanisms as part of a re-evaluation of the overall departmental communication strategy. This is a good time to send out gently worded, but clear, reminders to library staff about the appropriate means for requesting equipment, getting help, or conducting other business with the IT department.

Staffing issues should also be addressed at this point, and they will need consideration on multiple levels. At its most basic, staff should be able to begin to return to more normal working hours and conditions. After the first period of emergency response, it should become clear what areas now require more assistance and what areas are under less pressure due to changes in operations, allowing duty assignments to be shifted accordingly. In academic libraries that have faculty and staff, it can be a challenge to move faculty from one area of emphasis to another, both in administrative terms and in terms of faculty resistance. However, it is unfair to expect staff to carry the entire burden of change, and a conspicuous resistance by faculty toward sharing in the burden of alternative operations will likely lead to significant morale problems.

Some library employees, be they faculty or staff, may work in areas that no longer require their efforts on the same scale as was true precrisis. This is particularly relevant in cases where physical service points and operations are disrupted. If employees are unable to scale their work into the digital theater, one challenge will be finding work that they can do to avoid layoffs or other negative outcomes. This can be an opportunity for the organization to tackle tasks that need significant human intervention and can be accomplished on computers, but would ordinarily have had to wait for student employees, grant-funded temporary employees, or some kind of crowdsourcing effort in order for them to be completed in a timely fashion. At Washington University Libraries, a large metadata project being undertaken by Special Collections provided work for many library staff who were otherwise unassigned. In such cases the organization must be careful to take into account the administrative overhead of such a large influx of temporary help into a department. The available labor for a given project may increase, but that will mean a corresponding increase in the time and effort needed to manage and oversee such a project.

Alternative operations also often means lower-than-precrisis productivity. Part of that can be ascribed to exhaustion by some employees after the frenetic pace of emergency response operations. However, another major factor is the constellation of difficulties, large and small, faced by employees who have to adapt to unfamiliar work environments . . . especially when they are working from portable computing devices. For those who, prior to the crisis, did not have an alternate workspace they were accustomed to using (such as a home office) and for those who aren't used to working from improvised spaces, adjusting may be difficult. Suddenly being confined to a laptop screen and keyboard, for instance, can make working on multiple products simultaneously more difficult. Working from home can present many challenges, especially to staff members who have other family or pets with them in the same space. Managers must exercise discretion and understanding. Even after alternate office arrangements were found for Hale Library employees after the fire, a lack of colocation with some colleagues, adjusting to new workspaces, and adapting to new, often portable equipment, posed difficulties for many.

It is important to note that alternative operations doesn't have to mean working from home, although it can. After the Hale Library fire and an initial period of work from home, a variety of departments at Kansas State University found space for library employees. These departments stepped up generously, a fact which library employees appreciated. However, this still resulted in staff displacements and inevitable difficulties. The Library Technology Services department systems and developer teams, along with my new office, were relocated into the central technology building (the Unger building) a short distance off of campus. Our desktop and equipment support unit, LIST (Library Information and Support for Technology), was located on campus to make it easier for it to support the other library departments. This required me to frequently travel between locations and required LIST staff to travel to the Unger building for many of our meetings, including departmental meetings. It also weakened some of the team cohesion that had existed pre-fire, when the entire department was colocated in one office space on the fourth floor.

However, the shift to alternative operations should provide employees with the opportunity to slow the pace of their work and begin to return to the normal planning and assessment processes that should be part of their nominal operations. Managers should return to some forward-looking topics and planning processes within departmental meetings and one-to-one employee meetings. Within the IT department, time can be made again for team meetings focused on longer-term projects or consensus building around

strategy. Assignments should begin to reflect a return to work on precrisis projects and priorities where possible. This will be the time to start weaning staff members off more chaotic emergency response schedules and response footings so that a new normal can begin to be established. Meeting formats and schedules adopted specifically for emergency response can be assessed at this time to see if there is anything to be culled from them that fits into the larger renormalization process. Otherwise, those meetings and structures should be wound down with a return to previous patterns and schedules.

At this point it is best to manage expectations. As of this writing, the Washington University Libraries technology services department is still working remotely as it has been for over a year. I left K-State Libraries in November 2019, at which point Hale Library personnel were still working mostly at alternative locations, as only the first floor of Hale had been opened. It was not until early 2021 that most staff were able to return to work at Hale. It is normal in the aftermath of a major crisis or disaster for people to want things to return to normal. However, staff must be redirected by leadership away from the temptation of focusing on when (or if) things will return to a precrisis status quo. Leaders must project confidence but also an acceptance of altered circumstances as well as a sense of gratitude. At both K-State and Washington University, the organizations took significant, and to me sometimes surprising steps, to ensure job security and provide employees with a continuing sense of community despite the crisis. At both institutions many people went above and beyond in responding to the crisis. Leadership responded flexibly to the demands the situation placed on the organization and evidenced real concern for the well-being of staff. The leadership should make it clear that employees need to settle into alternative circumstances to the greatest extent possible and work with them to help establish a relatively comfortable new normal. Staff should also be coached to understand that, even after a full recovery from a crisis, it is likely that there will be lasting organizational change.

Alternative operations are also the point at which the leadership element needs to begin to take stock of lessons learned from the crisis. There will be more lessons likely to come until a broader normalization occurs, but the calming of the operational tempo provides opportunity to consider what went well and what didn't in the emergency response phase. What changes have been made to accommodate the crisis that might be worth keeping? Do the larger organizational procedures and approaches need to be rethought? COVID-19, in particular, has been an opportunity for university libraries to reconsider often calcified positions on remote work. This is especially vital for library IT departments. Remote or partially remote work has long been a regular facet of the technology world, but universities generally, and university libraries in particular, have been slow to adapt their policies to this reality. This issue has led to the loss of at least one highly skilled developer at a library IT department I headed, and I'm glad that COVID is giving at least some university libraries food for thought.

In the same vein, this crisis has forced many in higher education (some kicking and screaming) to take the need for an asynchronous model of education more seriously. The traditional college experience has long been a privileged one, but the rising cost of this experience is placing it far out of reach for many in the United States. Moreover, daytime class schedules, physical attendance, and office hours designed around that traditional experience place enormous barriers in the path of qualified nontraditional students. In the same way that a large segment of the population of potential students is poorly served by the traditional model, many public universities are increasingly poorly served by it as well. Facing drops in enrollment and ever-more-significant hurdles being erected in the path of the international students that comprise the most lucrative segment of the student tuition share, while simultaneously dealing with severe budget cuts due to over a decade of collapsing public support now coupled with COVID shortfalls, many public universities have been struggling to stay afloat. Such public universities have been forced to make up for politically motivated budget decimation by escalating tuition costs in a vicious cycle that effectively removes a cost-effective college option that was originally designed for the children of working people.

Despite hopes by people like me that the need on both sides would eventually converge into new offerings by higher education, the only place this seemed to happen was at institutions of so-called proprietary higher education. These were private, mostly online institutions that saw an opportunity and seized upon it. I have some experience in this area; my first job out of library school was as the director of library services for the Cedar Rapids branch of Kaplan University. However, many of these schools engaged in practices that were, to put it mildly, not as student-focused as they should have been. Eventually, changes to rules around student loan borrowing put many of them out of business. However, this should have been a wake-up call to higher education. These schools were so successful precisely because there was such an enormous level of unmet demand. While some mainstream universities, such as Purdue and Georgia Tech, have been moving to capitalize on this reality, too much of higher education has seemed incapable of innovating in this direction . . . even to save itself. However, COVID-19 has forced the issue, and it is possible that universities

that have had to learn to adjust for the pandemic will repurpose some of these lessons learned by expanding into the asynchronous education market.

Eventually, alternative operations will give way to a postcrisis status quo. In the lead-up to this change, and throughout the planning process for it, managing expectations will remain important. Employees may be returning to spaces and space assignments that are very different from those they initially left. They may be occupying entirely new positions, with vastly different duties, from those they held before the crisis. Lessons learned from the crisis may lead to changes in hours or management practices, but they will certainly lead to at least some changes in procedures. Staff with a low tolerance for change may continue to experience anxiety or disappointment that conditions will not be returning to what they regard as normal. It is also important in these times to celebrate the crisis itself. Something bad happened, but your team dealt with it and made it through to the other side. This is an accomplishment that is worth savoring and can form the basis for team building. Take this opportunity to celebrate any positives that came out of the crisis. The rebuilt Hale Library is a magnificent space. The Washington University Library Technology Services department is emerging from the pandemic with a new sense of purpose and accomplishment.

And this sentiment goes to the heart of the matter. Whenever and wherever possible, leadership should turn crisis into opportunity. Every crisis is an opportunity for organizations to reimagine themselves, rethink who and what they are, celebrate the talent they possess, explore new ways of doing things, and sacrifice a few sacred cows in the name of innovation. Doing these things is often an uncomfortable experience for some, or all, in an organization, but it is a means of avoiding calcification and encouraging growth. Crises can introduce new ideas and demand re-examination of ideas that no longer serve their purpose. They can force organizations to consider whether their standing interpretation of their core mission has become something that merely serves the interests of powerful internal or external groups. Crisis often operates as a change engine, and responding to one can force change in organizations where change has otherwise become politically toxic. As leaders it is our responsibility to imagine the future and move our organizations, our professions, and our disciplines toward it.

Chapter 5

The Things No One Seems to Talk About

In the preceding section I've laid out many of the nuts and bolts of managing a crisis from a library IT perspective, but there are other matters worth mentioning for library IT leaders who have had limited experience in this area. It is not that these things are not practical matters; they are. But they fall somewhere outside the comfortable rubric we might associate with a more staid treatment of the subject. They are the "that's good to know" sort of personal experience that can forewarn members of the leadership element who have been put in the position of managing such crisis elements for the first time. Some of these will take the form of recommendations from lessons learned. Some of them will just be a heads-up about what you might expect. I believe they are worth covering, and after you read this section I hope you agree.

Put It to Paper

One of the biggest mistakes I made just before the Hale fire was that I was too confident about our wiki. At the time we used Atlassian Confluence, a product that predated my arrival at K-State, and it worked pretty well. We had a lot of very thorough documentation on it, including the departmental emergency contact numbers. As convenient as it was, that fact did me no good at all when the wiki was one of many products knocked offline along with the data center due to the fire. Our department's head sysadmin had a version of the wiki that the library would use for an internal communications backup in AWS within a few days, but that didn't help me much when I needed to reestablish communications for the department in the wake of the fire. Luckily I had the numbers of a few of my departmental colleagues in my phone. I used that as the core to work from as I asked them to reach out in turn to anyone whose number they had until we were all on Slack together. I learned a valuable lesson from that. I love digital systems, but even distributed digital systems can fail quickly in a crisis. Have core information, like those emergency contacts, on a good old-fashioned piece of paper. The same goes for any place where, in an emergency, you have a series of steps you need to follow. In my opinion, very little beats a simply worded, straightforward checklist for those situations that has been transcribed onto a heavily laminated piece of paper with a handy grease pencil. If you really want to live right, attach that grease pencil to the checklist with a thick string. That's the way we did it in the military and it worked.

Finagle's Law and Disaster Preparedness

Most of us are familiar with that old chestnut: Murphy's Law. Fewer are familiar with the extrapolation from that: Finagle's Law. Put simply, Finagle's Law states that anything that can go wrong will go wrong at the worst possible time. That will be true in a crisis more often than you might imagine until you end up hip-deep in one. As I noted earlier in this report, no more than a few days into the Hale fire crisis, I found myself severely ill and on a course of antibiotics. It was easily one of the worst times in my life for that to happen. During other crises I have had to deal with personnel issues, including the loss of key staff, simultaneous failures of systems not directly related to the main crisis, demands emanating from other parts of campus, poorly timed university initiatives, and a variety of additional problems. In every case these colocated challenges had one important thing in common: the timing of their appearance was terrible. I promise you that my experiences are not an outlier. When trouble knocks on your door, expect it to bring friends,

know that they'll arrive late, and don't be surprised when a few of them decide to sleep on your couch no matter how badly you try to get them to leave.

In the face of that last, colorful paragraph it may seem like I take a dim view of disaster planning. Far from it. Eisenhower is often quoted as having said that "In preparing for battle I have always found that plans are useless, but planning is indispensable."[1] What the general meant was that, in the moment, Finagle will have its way and plans will need to be continually readjusted to fit the reality of the situation. But through the act of planning, preparations will have been made, alternatives considered, and the apparatus needed to adjust to realities on the ground constructed. Even the act of turning one's mind toward the problem of planning for a crisis puts the subconscious to work preparing for the worst. Planning takes effort, and engaging in that effort creates an attitude of preparedness.

At K-State Libraries a tremendous amount of general preparation had resulted in a highly organized response plan, well-trained responders, and immediately available response supplies. I recall comments that even the firefighters who put out the fire were impressed. The only area that would have benefitted from more attention was technology. The IT department had not been included in the plans in any meaningful way, which meant in areas like technology redistribution, plans had to be spun up on the fly. Other dimensions to the Hale fire, such as the data center being knocked off line, had not been considered by the disaster planning committee or IT. Nonetheless, thanks to extensive disaster planning and the mindset that it inculcated in library personnel, the initial response by library employees was extremely effective.

At Washington University Libraries, planning for the COVID-19 pandemic began at a very early point. Organized by the university librarian as soon as it became apparent that the COVID pandemic had the potential to affect the US in a broader way, brainstorming sessions began that resulted in the broad outlines of a plan. These sessions also facilitated a shift in perspective by all participants toward considering how the pandemic might affect their individual areas. This meant that planning also began at departmental levels, often informally, as a direct result of the fact that key associate university librarians and department heads were forced to consider contingencies as part of a broader planning process at the organizational level. As the tempo of the crisis increased, brainstorming turned into practical planning between departments. When the requirement to move operations off of campus came, rather abruptly, from Washington University administration, the library already had preliminary plans developed to distribute computing equipment, widen VPN access, and move staff out of the library at a brisk pace.

In these examples we can see that plans had some utility, but the act of planning itself actively changed the mindset of participants. As most managers can attest, given the challenges we must all face each day, it can be difficult to extricate ourselves from more focused mindsets. Yet, as managers, doing exactly that is fundamental. Much of what we must do as leaders is plan and work to see a larger picture. Taking the time to do this, and actually engaging in such an exercise, is legitimate work. And working with colleagues and our own staff to try and plan ahead for challenges creates a mindset that such challenges are inevitable and can be met with planning, flexibility, and grit.

The Reward for Success Will Often Be Greater Challenges

Sometimes, when we confront terrible disasters and monumental challenges with limited resources, we lose sight of the fact that such victories will not bring an end to challenges themselves. In fact, often the reward for success in a crisis will be more challenges from our colleagues. In the case of both of the crises that I have discussed to this point, when new service types were facilitated by our IT departments in response to a crisis, the inevitable response was additional requests for an expansion of those services or the creation of others. This can feel overwhelming . . . especially when you have been stretching staff time and resources to the limit in order to provide help in the first place. Sometimes you will simply need to be clear with your stakeholders about the capacity your team has. Sometimes you will need to explain to stakeholders that you may be able to expand a service eventually, but not immediately. But in every case you need to step back and take a breath. And yes, I'm saying that as if it's easy, and it isn't. It's very hard. Nonetheless, while it may not feel like it at the time, such a response from your colleagues and stakeholders is a sign that you and your team are doing work that matters to them. When you and your team need some breathing room, you should say so. That can feel like you're failing in some way, but you are not. Teams may work past normal capacity in the early phase of a crisis, but continuing to push in such a fashion is not maintainable. Most of your colleagues will understand that. Even the ones that don't will benefit from your setting boundaries.

The Danger of an Unqualified "I Don't Know"

One thing that remains a commonality in confronting tech issues, whether it is under crisis or in more nominal circumstances, is the danger of a naked "I don't

know." For someone working in IT, giving an initial, unqualified response of "I don't know" to a problem is very ill advised, no matter how true it might be. This may seem counterintuitive. Most of us have been in positions where we did not receive fully honest responses to a question, and I think most of us would agree that we found such responses less than useful. Most of us have heard, said, or both, that we wished that if someone didn't know something, they would just admit it.

To be clear, I am not advocating that IT staff and leaders lie to their users. In fact, I would argue that an unqualified "I don't know" is more disingenuous than a carefully qualified response. Most technologists have some diagnostic ideas when initially confronted with a new problem, even if they don't think those ideas are the likely cause. More than once I've had one of these first-thought responses prove to be correct, despite its low probability of being the culprit. And the truth about technology is that many people find it scary and confusing. We are the experts they call when that technology, for some reason that they find baffling, refuses to work. One sure way to compound their disquiet is to indicate that we are initially baffled ourselves . . . especially in a crisis.

After all, being baffled initially is okay. Given the breadth of technologies many of us work with routinely it is, in fact, inevitable. But we jump in, do the research, talk to the right people, and sort it out. That's a process we're familiar and comfortable with, but it provides little comfort to those who want the reassurance provided by the presence of someone who conspicuously knows how to handle a situation.

In technology, when I'm uncertain about the source of a problem, I communicate that to my colleagues, but not in an unqualified manner. While explaining that I will need to look into a matter further (something necessary in the vast majority of cases) I will also describe one or two possible causes for a problem that fit some or all of the conspicuous symptoms I am seeing. In my experience, this has a powerful effect on users and colleagues. It's one thing to project uncertainty and quite another to explain (much more honestly) that you have a few ideas, but you're not yet certain what the source of a problem is. Most people understand the latter response and find some reassurance in the fact that they are dealing with a technologist who has enough knowledge and experience that they see some potential causes for a problem at the beginning of the remediation process. Especially under crisis conditions, it is helpful for people to know that there is someone involved in the response that has some possible answers, however preliminary they may be, and they understand that as new information surfaces, understanding of a situation may change. What is not reassuring is to hear the technologist who handles things that, to them, seem rather confusing say that they have no idea what is wrong or what to do about it.

Again, to be clear, I do not lie to my colleagues or my users in these situations. I bring up possibilities that are plausible, even if unlikely, based upon the facts and the circumstances that I am seeing. I work very hard to have more to tell colleagues who are faced with serious conditions than I'm not sure what is wrong or how I can help them.

Strategic Silence

Just as there are many circumstances where it's necessary to say something, there are others where, no matter how difficult it is, the only healthy way forward is to stay silent. For someone as chatty and as outspoken (for better or for worse) as me, that can be a challenge. But in a leadership position you are often left in the uncomfortable situation of having to pick your battles. I am personally working on improving that skill. And crises have been a very effective, if somewhat abusive, teacher. When dealing with the exhaustion, multitasking, and crushing stress of a crisis situation, it is particularly difficult to avoid being defensive. But surrendering to that impulse isn't useful.

One situation that epitomizes that fact is one that has occurred in various forms for me across more than one crisis. As I previously mentioned, during times of crisis libraries often increase the frequency of all-staff meetings and increase online access to them. I always try to make myself as available as possible for those meetings, as there are often some requests for information or updates about tech issues. One of the common follow-ups to these questions is the turning of that question toward the rest of the staff. For example, in one meeting, I was asked if we had seen many university network access issues since staff had become remote. I answered that the IT department had not; I knew of only one active ticket to that effect at the time. I noted that there had been some issues with VPN and remote device access early on, but those challenges seemed to have been sorted out. The director then asked my library colleagues to jump in and let her know if they were experiencing issues.

The predictable happened. Around ten people accepted that invitation, expressing discontent with their connectivity to campus systems. I took down names, as did another of my technology colleagues. It sounded bad . . . without any context, it sounded as if I were unaware of significant university technology problems and that a lot of people were suffering with failures that had been unaddressed by my department. Even for those who had some idea of the context involved, it was not a good look.

I did the only thing I could reasonably do in that situation. I gritted my teeth and accepted it for what

it was. Our department followed up with every person who spoke out, and what we found was unsurprising. In every case the problems had nothing to do with campus networks or systems . . . those issues, along with connectivity to remote devices and VPN access, had largely been resolved. People were having trouble with their home networking equipment or their internet providers. One person mentioned that their apartment building shared a single Wi-Fi connection, and a large number of people had simultaneously entered lockdown there, causing their connection speed to drop off. Of all of them, only one had a ticket in for IT help, and they had already been informed that the problem was their home router.

It was a frustrating moment, but it was also one that would have only been made worse if I had gotten defensive about the dearth of tickets about connectivity or if I had begun to try and drill down on the remarks by any of the respondents. My library colleagues were justified in letting off a little steam. Some of them had likely misunderstood what was being asked. Others had no idea where the real problem might be and had, for whatever reason, not sought assistance. Some had specifically not sought assistance from the library IT department because they knew how busy we were and were afraid of causing us more work. And no matter what the source of their connectivity problems, it was understandably infuriating for them. I sympathized; they were just trying to do their jobs under new and stressful circumstances. Many of them had home networks that were more than suitable for general connectivity or entertainment and were only now discovering the unexpected frustrations of trying to conduct business over those connections. Local ISP networks were also feeling the strain of elevated traffic at that time. The shabby state of last-mile internet connections in the United States was certainly not my colleagues' fault. It was a situation where I was going to look like a goat, and I needed to sit back and take it for the good of everyone. If you are a new technology manager, understand that you will have those moments. During a crisis you will have more of them.

I did, however, take a moment when we got to a kudos section of the meeting to call out the excellent work of my library IT colleagues during the crisis. That got at least as enthusiastic a response in the comments area from library staff as the director's earlier question. As a manager, it's my job to shoulder criticism at times, but my departmental staff should get to feel the appreciation they've earned. Such small gestures go a long way toward helping to bolster morale.

In yet another situation, I was in a planning meeting at an early phase of crisis response where we had just begun to issue temporary laptops for remote work. A schedule had been drawn up and provided to the planning committee and managers for people to collect equipment. However, one department had ignored that schedule, and many of its staff had simply shown up at random intervals on the first issuance day expecting to receive equipment. This was a problem, as the devices required a certain amount of setup. We had streamlined that setup process, but the scheduling had been designed to provide for adequate setup times with some opportunity for IT staff to take breaks and perform prep work in between sessions. I brought this problem up with the head of the responsible department at the next planning meeting and was met with anger. They felt they needed their machines as soon as possible. They were uninterested in the agreed-upon schedule. Unexpectedly, the issue was taken up by a much higher level administrator who sided with them. Despite the fact that no one on the committee had raised any objection to the schedule before, they were adamant that the department in question just get what it wanted.

These were not unreasonable people, despite their reaction. The higher-level administrator, in particular, was one I had a great deal of respect for. However, things were happening quickly, and I suspect they were increasingly concerned that the libraries would not be able to issue equipment by the drop-dead date we had to meet, schedule or no. That concern fueled their reactions.

At that point I ceased engaging on the problem, sat back, and absorbed their rather strident remarks. There was nothing I could say that was going to resolve the situation favorably for my team, and I was dealing with a level of organizational authority that vastly outstripped my own. Furthermore, the argument threatened to derail other important response work that needed to be addressed. It was an extraordinarily stressful moment for me, but continuing to plead my case would have achieved nothing. No one was listening. It was another moment where I needed to simply accept a bad situation for what it was.

Fortunately, the noncompliant staff were mostly confined to a single department. The schedule worked as intended, and everyone who needed their equipment during that issuance period received it. Library IT staff worked incredibly hard to image and issue a large number of laptops in a short amount of time, enabling our colleagues to work offsite.

These situations were stressful, but the important thing to remember is that, fundamentally, everyone was trying to do the right thing . . . they just didn't happen to agree on what that right thing was. And these were situations where, past a certain point, the only useful course of action that remained was to sit back and take it.

Ideas Take a Team

In any crisis response, teamwork is vital. The IT department must work as a team to coordinate its

actions, leverage internal expertise, confront problems using diverse viewpoints, and apply effort effectively. When leveraging that internal expertise, the overall intellectual capital that your team possesses must not be ignored. In responding to any crisis, ideas take a team. When the fire happened at Hale, I had some good ideas about how to respond. *But so did every other member of the Technology Services department*. Our head sysadmin leaped into action to save critical systems. She needed no direction to do that. She was the one who had the idea to stand up a copy of the organizational wiki for use in early communication efforts before the university got its other systems back online. The coordinator of the LIST unit and her staff put together the assembly-line style process for imaging over a hundred new computers in only two days, and it was one of our developers who immediately jumped in with the idea that we should all gather together and make it a group effort. These are only a few examples of outstanding individuals adding their ideas in an environment that had been made friendly to open contributions by everyone. Together, as a team, we were far smarter in our response than we ever would have been if such contributions had been discouraged and every idea and specific of our response efforts had originated with me or those I reported to. Skilled, intelligent individuals exercising initiative and contributing to our departmental response planning was one of the keys to our success in dealing with a huge, unexpected calamity.

The same was true at Washington University Libraries when the COVID pandemic hit. I was a relatively new manager at the time, having occupied my position for only a few months before we were required to stop reporting to campus. The crisis struck at the most inopportune of times. We had just finished migrating our entire digital infrastructure off of the local data center and were still dealing with cleanup from that operation. We had just lost one of our most experienced and talented staff members. We were at a historically low staffing ebb with multiple projects about to be initiated that would be contemporaneous with the pandemic conditions. Despite these facts, every member of the Library Technology Services department stepped up to the challenges of the crisis. My LTS colleagues worked together to deal with everything from equipment issues to bug fixes on legacy products. Elements of the response were discussed and brainstormed in small groups and departmental meetings. At every turn our plan of action was shaped by ideas and input from across the department.

As a manager in such situations, it was my job to make decisions and provide overall direction rather than to try to be the source of all good ideas about how to respond. In fact, a big part of managing a department, in my opinion, is about encouraging contributions and creating a forum to express ideas, concerns, and viewpoints, even if I don't agree with them. Empowered people are capable of outstanding efforts. They feel a sense of ownership over their job and the organization they are a part of. They feel empowered to express themselves if they work for someone that they know will take them seriously and who is capable of being persuaded by facts, data, and good ideas.

There is something quietly sacred, to me, about being entrusted with the intellectual production of others. Part of that comes from my reverence for good ideas, but another part stems from the trust that goes along with such a collaborative process. I have worked for a few supervisors, some placed quite high in organizations, who could not be trusted with ideas. The worst of them distrusted any ideas that were not their own. They swept them aside, or pretended that the ideas were theirs, sometimes in the face of extraordinary evidence to the contrary. One of the worst library administrators I have ever dealt with once met with me and two members of a committee I was chairing shortly after they had assumed their position to tell us that our committee needed to start engaging with faculty on the rest of campus. We explained that we had been doing that very thing for months. Those engagement meetings had been documented. The schedule for future engagement meetings was on our Teams site. The administrator's response was that we had our viewpoint and they had theirs, and they summarily dismissed any further contention throughout that meeting that campus engagement had not been their original idea. They expressed that they were correcting the trajectory of our work. We three left the discussion stunned and discouraged.

Managers should respect the ideas of their staff. They should go to pains to note that such ideas, when passed along to their reporting chains or committees, were not theirs, but rather cite their sources. They should regard the input of their teams as a precious commodity, a resource that is key to success in everything from crisis response to future scaling a department. That is not to say that they must adopt every suggestion, agree with every idea, or refuse to challenge any contribution. Some discussion and disagreement is a healthy feature of an exchange of ideas. And, as the manager, it is your job to decide which ideas to implement and how they should be implemented. But your departmental colleagues should know that they are free and encouraged to express their suggestions about the work, no matter who agrees with them. No one on my team ever got a black mark next to their name just because they disagreed with me. In fact, a common refrain from me is that if one of my ideas is a bad one, I'd much rather hear about it from my team than be left to deal with the repercussions after it's been implemented.

Managers must build trust with their IT colleagues by properly apportioning credit for good ideas

and good work. Dwight D. Eisenhower, always a fine source for quotes, had this to say about the matter: "Leadership consists of nothing but taking responsibility for everything that goes wrong and giving your subordinates credit for everything that goes well."[2] Remember that a team, however ineffective it might sometimes be, can exist without a manager. But a manager is nothing without their team. It can take time to build that trust, but when a team gets there, the results are well worth the investment.

Budgets

One thing that is often pushed to the wayside at the beginning of a crisis is the question of budgets. For some it may even seem crass to talk about budgets at the beginning of a crisis situation. After all, we librarians are entrusted with valuable intellectual and cultural treasures. When any part of those resources is threatened, or any part of that mission is interrupted, it is our job to get things back to one hundred percent for the sake of our patrons, donors, and trustees. At such times it's difficult to think about what that recovery will cost, and it is unavoidable that the organization will absorb expenses it did not expect. However, I offer this word of advice: never stop thinking about where the money is coming from. In the beginning even administrators are often willing to throw the budget to the winds, but that bill will come due. *It always comes due*. Remembering that on the front end goes a long way toward making things easier on the back end of a crisis.

One of the challenges to the budget of a crisis is that, by definition, the circumstances of a crisis are special ones. It's easy for people to feel that the normal rules don't apply. During one crisis period, a team member suggested that we purchase a piece of equipment that we had been unable to get under ordinary circumstances because purchases were receiving a conspicuously lower amount of scrutiny. I refused that notion on general principles, but it made for a good teachable moment. I had been through smaller-scale crises before and told them the truth of the matter. Even if I agreed with the ethics of that action, and I didn't, someone always belatedly scrutinizes the books. We might get away with something like that in the short term, but eventually (and rightfully) such unusual purchases would be questioned.

Another budgetary challenge of crisis conditions is helping people understand the trade-off of temporary expenses for recovery expenses. As one example, I have seen departments in crisis make requests to relocate what would have essentially been decorative equipment to temporary service point locations. These were large pieces of ornamentation, not required for the mission of the service point, which would have cost thousands of dollars to move there and back—thousands that would then have to be subtracted from the funds available for permanent recovery efforts. A very poor trade-off.

Inevitably, as situations like remote operations drag out, staff will begin to request additional peripherals and equipment. Some of those suggestions will be practical, and some will be extravagant. It is important for IT departments to take steps to mitigate the more extreme requests and to put any consequent purchases on the firmest budgetary footing possible. One way to do this is to select standard, reasonably priced products in common request categories that are approved for purchase. Staff who want something more lavish should purchase it as personal gear.

It is also important to properly route requests that come into IT as ergonomic in nature. Most libraries have staff who are trained in conducting ergonomic assessments and making organizationally approved adjustments. HR and those staff should meet with the affected employee to generate recommendations for equipment that satisfies the needs of that employee. Simply ordering equipment suggested by affected employees can often lead to expensive acquisitions that don't solve the problem they were intended to ameliorate. This situation becomes especially tricky when dealing with remote work situations. Libraries should establish clear policies about what workspace environments they are responsible for.

Effort may also need to be put into determining what fund to draw some expenses from. As the manager responsible for most tech fund purchases at Washington University Libraries, I have had to make determinations about what constitutes a true technology purchase and what is more logically situated as a furniture or office supply purchase, which would move it under the aegis of departmental funds.

Notes

1. "Dwight D. Eisenhower 1890–1969, American Republican statesman, 34th President 1953–61," *Oxford Essential Quotations, Fourth ed., edited by Susan Ratcliffe* (New York: Oxford University Press, 2016), www.oxfordreference.com/view/10.1093/acref/9780191826719.001.0001/q-oro-ed4-00004005.
2. Originally quoted in Edgar F. Puryear Jr., *Nineteen Stars: A Study in Military Character and Leadership* (Coiner Publications, 1971), 289.

Conclusion

Managing IT in a library crisis means managing the crisis. Be flexible—in approach, with staff, and with yourself. Understand going in that you aren't going to be able to cover every base and no one expects you to. If you're an IT manager you have a whole team that you're leading. If you have been as fortunate in your career as I have been, that means that you have a team of colleagues with great skills and great ideas. They'll be relying on you to make difficult decisions (and take responsibility for them), keep organizational communication active (both vertically and laterally), and coordinate their efforts, as well as enacting ideas of your own. The organization will be relying on you to project confidence, make yourself as available as possible, and react in an agile fashion as conditions change.

It won't be easy, but remember to try and practice self-care. Stick to your routines as much as possible. Keep on top of this with your IT colleagues as well. Your staff may need you to step in and make sure they take some time off and are able to step away from the crisis situation. None of you can help anyone if you're burned out.

Remember: your organization hired you and your team for a reason. You have the skills the library needs. Keep your chin up, and keep in mind that every crisis situation eventually ends. Don't let inevitable mistakes shake your confidence. Your library needs you.

Notes

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