L. Angie Ohler and Joelle Pitts **From peril to promise** The academic library post–COVID-19

s in so many other parts of our society, COVID-19 has forced many changes to the ways in which academic libraries operate. The response of higher education to the pandemic has revealed both how vital academic libraries are to the academic enterprise and to scientific advancement at-large through open access initiatives. It has also highlighted that libraries are not alone in confronting the long-term challenges of sustainability with respect to the current scholarly communication marketplace, and the affordability of higher education more broadly. For academic libraries to assume a leadership role in higher education's search for solutions, we must first reconcile our own identity in the new landscape. We need to ground ourselves in a new way of operating: embracing iterative development techniques while deliberately combining collections strategy, digital initiatives, and outreach efforts to support open scholarship.

One approach to meet these challenges is to infuse agile development structures learned from industry to adapt iteratively and swiftly to changes and evolving needs of our communities.

Shifting sands

Of the many articles and think pieces that have been written in the wake of the pandemic, some common themes are emerging. The financial impact of COVID-19 has only compounded the economic challenges higher education was facing, including skyrocketing personnel and healthcare costs, fierce competition for new students and research funding, and deferred maintenance costs for physical infrastructure. While this moment could demonstrate to the wider world the merits of higher education funding, as universities lead the way in researching and developing better treatments for COVID-19, one concern is that research funding will become focused almost exclusively on disciplines conducting pandemic research and those institutions already wealthy enough to engage in it.¹

The push toward open science we are seeing during the pandemic will no doubt result in greater collective benefit of scientific discovery,2 but scholarly models cannot simply shift to open without consideration of the potential inequity and exclusivity of new digital infrastructures. Having access to open source applications and software is one thing, but having the personnel and technical skills to customize, develop, and maintain them has been a privilege enjoyed by wealthier institutions. If our goal is to encourage more disciplines to engage in open scholarship, academic institutions must reward faculty for publishing and engaging in open initiatives, and they must also adequately fund those units engaged in support of them. As proponents of open access, academic libraries are often key players in open infrastructure development on academic campuses, the irony of which is they may also simultaneously be seen as "cost

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centers" targeted for reductions because of their historical role as repositories of expensive purchased collections.

Desperate times call for different measures

Despite the dire situation for higher education, there may be an opportunity here for libraries who are willing to rethink the business of collections. If there was any doubt before the pandemic, it should be clear now that libraries will no longer be able to sustain bundled Big Deal journal packages and will be even less likely to replace these with even more expensive transformative agreements that would add additional costs to supplement open access. But this is not a new phenomenon. Lisa Peet³ reported that half of library directors surveyed before the pandemic said they were likely to cancel a major journal package and very few indicated they were planning on replacing it with a transformative agreement. Our own survey of academic librarians conducted in the fall of 2019 showed similar results. Of the 65% of respondents who indicated they had already broken up a Big Deal, 53% indicated it was because they could no longer sustain journal inflation, almost 23% because of a mandated budget reduction, and only 4% indicated they had negotiated a transformative agreement to replace their Big Deal.

Changing the library collections business model has been controversial territory, especially when the affordability of academic materials is seen as a library problem and not a scholarly conversation problem. With the pandemic, the pressure for academic libraries to reduce collections costs will be even greater. Danielle Cooper warns that "This trend will lead to gaps in coverage for patrons and increased reliance on alternative access channels including interlibrary loan, preprints, and peer networks. In this rapidly shifting resource landscape, it is imperative for academic libraries to understand researchers' evolving strategies for discovering and accessing scholarly resources and how these shifts are affecting their perceptions of the library."4 This requires a shift in how we envision academic library services into one that moves away from traditional one-sizefits-all models and more toward on-demand services that can meet each researcher, scholar, or learner at their point of need.

Rethinking our collections budgets will allow academic libraries the opportunity to invest elsewhere. The pandemic made it necessary for libraries to pivot seamlessly between in-person and virtual services, an expectation our users are likely to continue having in a post-COVID world. To be successful, we'll need to make significant changes in how we develop new services, spaces, and collections strategies.⁵ Many academic libraries have already implemented new services aimed at helping researchers comply with funding mandates for data management, better support for online teaching and research, and continue to lead in developing institutional repositories, open access publishing, and open educational resources. They have invested in purchasing electronic resources through regional networks and consortia, but now need to shift those relationships toward building the infrastructure for shared collections, open networks, and open scholarship. Paired with outreach and liaison initiatives, and new ways of thinking about virtual and physical library spaces, we must think beyond the library as a repository of collections and toward a concept of library as incubator, think tank, or institute. "Library as institute" means repositioning and reframing our spaces as hubs for new learning and research, where open science and publishing are the focus, the starting point for data services, curation, and management.

Industry as model, not enemy

Per our survey research, libraries are succeeding in shifting their operational focus to engage in the following activities:

• long-term open access engagement and advocacy with campus faculty and administrations about the unsustainable costs of traditional academic publishing;

 structural changes to accommodate the new work: resources, funding, new positions, or new library units to focus on creating and implementing new services and initiatives; deliberate engagement in a collections strategy that unites the purchasing power of the library's collections budget with scholarly communication advocacy, institutional repositories, and digital initiatives;

• elevation of open access as an organizational priority; and

• revised partnerships with institutes: deliberate promotion of core initiatives, collaborating to create new ways of operating, leveraging industry partnerships and vendor relationships for real change.

As academic libraries fundamentally shift from repository of the scholarly record to scholarly communication institute, they must consider the funding and resources required to successfully make that leap. Libraries, like any business, must adopt a model that sustains both their current operations and builds in growth capacity for future services. Academic libraries, particularly those with large print collections, have been slow to shift staffing and infrastructure away from print library activities.6 Strategic plans centered on new digital initiatives, partnerships with academic departments and other library consortia, and outreach and advocacy efforts have the potential to overcommit the most innovative library personnel while leaving others with more traditional skill sets underused. Sinking effort and resources into designing, implementing, and evaluating these initiatives can be politically costly when students and faculty don't perceive them as integral to their own teaching or research goals or when library leaders have misjudged the impact of competing priorities on limited personnel, mismatched skill sets, and missed opportunity costs. The irony of this situation is highlighted in a pandemic landscape, where layoffs and furloughs are more likely. Libraries will be forced to rethink structural accountability and consolidate portfolios with fewer personnel at exactly the moment when they may need to invest them more strategically.

Libraries can look to the private sector for a better understanding of resource management, startup costs, and moving research and development initiatives into operations. Specifically, academic libraries can use rapid prototyping techniques to develop an iterative operational model that helps target user needs and respond quickly to them without spending months (or years) developing those solutions. Agile development models are not new to libraries, particularly those familiar with library instructional design programs.7 They are also familiar to library marketplace providers, who continuously look for ways to pivot their own services to meet library needs.8 What will be new for libraries is accepting that iterative development means continuous change. This is not a strategic planning process, but instead a tactical method libraries can use to quickly identify what works for users, what's more efficient for workflows, and what structures best support success. Risk-taking is the norm, and failure is acceptable. If the prototype for a new initiative does not work, one moves quickly to the next possible solution or improvement. To succeed, failure and iteration are necessary.

Failing faster, together

The COVID-19 pandemic has turned the entire academic world on its head-no small feat for such a historically entrenched institution as higher education. Academic libraries cannot miss this opportunity to finally leave behind the traditional physical repository, and shift into the scholarly communication hubs our campus communities need us to be. Academic libraries will likely always have physical collections and the workforce necessary to purchase and manage them. We will continue to collect and curate special and historically meaningful physical collections. We will continue to support our patrons in the shift from just-in-case collection development to user-driven models and the resulting logistical changes. But we must do those things considering, and in support of, a profound and strategic shift to open scholarship. We can help ourselves by setting aside our aversion to industry models of budgeting and operations and recognize that our institutions function within a revenue and expense structure, in which academic libraries are an expense. We need to build agility and iteration into our everyday workflows to adapt to our changing campus environments made ever more uncertain under the pandemic. Rapid prototyping is one way to adopt such a shift, but it isn't the only path forward. There are no perfect sprints, scrums, or development cycles that will reframe academic libraries in a modern light. Agility, risk-tolerance, and think-tank operational attitudes should be our takeaways from industry.

We need to learn how to fail faster and share our mistakes publicly as much as we celebrate our successes. If academic libraries can fail faster together, we just might have a shot at emerging from the pandemic as the transformational campus leaders that higher education desperately needs.

Notes

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5. See Lyda McCartin et al., "Assessment: 100-Level LIB Course Assessment Plan," University of Northern Colorado, 2020, https://digscholarship.unco.edu/infolit/24.

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