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INVITED ARTICLES

Taking Action in a Critical Moment: From Innovation to Impact

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In an era characterized by rapid technological change, academic publishers and the many stakeholders who support them have adapted and morphed, shifting our procedures and priorities to meet the challenges of dissemination and stewardship in an increasingly digital world. This article discusses today's critical moment in academic publishing and its implications for the future. Using a sociology of culture lens, it considers current and prospective models for transitions in publishing, information management, and communities of practice. The article closes with a discussion of the Collective Impact Model and its potential utility in coordinating an ever-widening circle of stakeholders in order to move from collective action (where we are now, systemwide) to collective impact (the system-level change we aspire to create).

Keywords: innovation, scholarly communication, Collective Impact Model

INTRODUCTION

Although there is much debate about the causes (and culprits), most players agree today that the established order of academic publishing has been shaken. Yesterday's business models are losing viability in our digital world, as witnessed by the shrinking numbers and reduced outputs of university presses and scholarly societies as well as the steady stream of mergers and buy-outs within trade publishing (Munroe, 2007).¹ The very definition of "publishing" is in flux, especially where dissemination strategies are concerned. Large commercial publishers are paying premium rates to identify and acquire new digital communications channels, specifically those that scholars use for search and aggregation.²

In the emerging, increasingly digital, publishing landscape, there is a mix of old and new voices—both within the academy (faculty, students, administrators, university presses, libraries, information technology divisions, research centers) and beyond it (societies, nonprofits, commercial publishers, consortia).

The groundwork laid by these players today will provide the foundation for the next generation of scholarship—making this a critical moment for scholarly communications. Our response to this moment on many levels will help define how the field of scholarly communications functions in the future. Will it be closed or open? Elite or broadly relevant? Connected or siloed? Preserved or lost? These are all open questions today. And there are other questions—of crucial importance: Who will control the means of production? What roles will be played by stakeholders in this work—scholars, publishers, and librarians? This critical moment requires our response. But how shall we respond?

INNOVATION AND INVENTION

Many times, we talk about that response in terms of "innovation." We place a high premium on "innovation"

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¹More recent mergers include the infamous Random House/Penguin merger in July 2013, among others.

²For example, the often-cited 2013 Elsevier purchase of Mendelay.



FIGURE 1 Basic definition of innovation from Google.

in the scholarly communications industry and in academia more generally. We have done so for several decades. For the last dozen years or more, it has seemed like this term has been absolutely *everywhere*—from grant agency calls for proposals to conference titles, and that has been true not just in our immediate industry but also well beyond it: The term *innovation* has been *buzzy* throughout the corporate world—the term *disruptive innovation* perhaps most particularly.

So, that makes me wonder, why does this term “stick” so well for us? What function does it play in our immediate landscape? The basic definition on Google (Figure 1) provides a good starting point—innovation has some enticing synonyms: *change*, *alteration*, even *revolution*. And in this Google-based definition, notice how the emphasis is placed on the “new”—this understanding of “innovation” is consistent across many different definitions. Innovation, at least by definition, hinges on originality.

Innovation’s “buzziness” aside, the term’s history is complicated and worthy of exploration in its own right. As Canadian historian Benoit Godin (2015) has shown, this term emerged first with negative connotations—theological innovation, as an example, was tantamount to treason in the 16th and 17th centuries. Newness, after all, is not always welcomed, much less celebrated. The term was often interchangeable with other terms still familiar to us in the 21st century, including *invention*.

Although these terms continue to seem to be synonyms in popular usage, differentiation between *innovation* and *invention* can be traced back to the 20th century. Godin (2015) notes two definitional moments—first, a 1939 description by Joseph Schumpeter, who used economics as the point of differentiation between invention and innovation, and second, the use of the term in scientific labs from midcentury forward. In both cases, invention was used to denote a purely creative event, and innovation signified an invention that was complemented by packaging that made it marketable (Green, 2013).

Using a common case study—the light bulb—we can see the distinction between these terms. In common lore, Thomas Edison invented the light bulb. In a sense, perhaps he did (depending on your definition of *invention*)—but he did so more than 75 years after Humphry Davy first invented a light bulb. Most of us do not remember Davy because the initial invention did not lead directly to change.

Edison—and really Edison and Joseph Swan, his British competitor-turned-counterpart—were the ones who took the invention and successfully improved it, lengthening its life and making the technology more practical and affordable.

Invention, then, is only one small—if significant—step in a complicated dance that leads to change. Innovation is a key second step, where someone(s) makes the invention viable for “the market,” for broad usage.

But research across the fields of sociology, economics, and business has demonstrated that there is a crucial third step here—one without which an innovation stays on the fringes instead of moving to the center of a field. That third step is the network of distribution and reception into which it is received.

Returning to the light bulb as an example, Edison and Swan also built the electrical system to support the light bulb, and they established a business model and network that enabled the light bulb to become a core part of our daily lives, fundamentally changing our world in the process. They did not stop with invention or innovation—they carried forward, establishing an environment and network of users that could move their path-breaking work to the masses.

Without positive reception by markets and audiences, even acts of brilliance go unnoted and unnoticed. So, in order to inspire change, real change, we need to foster more than invention and innovation—we also need to foster networks of reception.

SCHOLARLY COMMUNICATIONS AND INNOVATION

In scholarly communications, we have arguably been on a quest for “innovation” for the last few decades, and the academic library has become one of the hubs for this activity. Grant dollars have funded a tremendous amount of research in digital publishing, much of it around “innovation” as specified in the grant application category titles and proposal guidelines. Digital humanities and digital library research projects have been seeded in abundance—and many of them have flowered. But none of them has really transformed the academic publishing landscape.

One of the reasons is that funding and attention have been given almost exclusively to invention and innovation projects—*new* mechanisms, *new* approaches, *new* tools, *new* practices. And gearing resources toward “innovation” leaves everyone vying for their own, unique approach—it does not encourage consistent practice.

We have to shift our thinking—stop looking for the magic bullet of innovation and start thinking about the *process* of changing a system. Research findings from the field of sociology can help us in this system-oriented analysis and planning.

Sociologists have extensively studied the process of change in fields and systems, asking how business practices stabilize, transform, and evolve over time. They have asked what factors are consistently present when we see dramatic

alterations to existing practices and the development of entirely new practices. And they have studied both the dangers—and opportunities—to existing organizational forms during intensive moments of change.

Research shows that when modes of communication change, new fields and new business practices are more likely to emerge (Bourdieu, 1987). This concept echoes early philosophy, including Plato's *Republic*, which warned that changes in the modes of music could cause a full-scale social revolution. As an example—look at how the printing press transformed society and laid the groundwork for significant religious and political change. Just to touch on one small piece of this, look to the Church—by that time, a seemingly permanent, deeply conservative infrastructure. It had begun to splinter into a multidimensional field of practice, where Christianity no longer meant “Catholic,” and priests no longer controlled the market and the message—the people now had access, for the first time, to the Bible, and they could interpret it for themselves. Modes of communication matter, and changes within them can open the door to radical societal change.

Research has also demonstrated that established businesses are rarely the spaces where significant innovations happen (DiMaggio, 1982; Dowd, 2003, 2004). The giants of industry and their leaders (whether private or public, religious or academic) are conservative by nature—these institutions have vested interests in the system that already exists and are unlikely to upend their established ways of doing business. Instead, it is the innovators at the fringes of the field who more often demonstrate the capacity to redefine the operations of a field.³ There are widely cited exceptions such as IBM's creation of the PC or Apple's creation of the smartphone, and many industries do deliberately strive to “innovate” in today's market, but even still, research shows that the most likely location for innovations that have the capacity to change a market is on the margins, far from the center of a field.

Take, for example, the phonograph. There was a huge market for phonographs in the early 1920s, and most of the manufacturers made both phonographs and records. Edison, Victor, RCA, Columbia—these were just a few of 150 companies making records or record players at that time. Enter the radio. By 1922, although its quality was still very poor, it was extremely popular, and sales of records and record players declined rapidly. By the time the Great Depression hit, the market for records had largely collapsed. But then, around the late 1930s, it began to rebound (Peterson, 1997).

The jukebox was the innovative technology and practice that enabled this change. Jukeboxes were not created by those that were at the center of the music industry but rather by a small player piano company, the National Automatic Music Co. (later known as AMI). The core mechanism—the

invention—was developed by AMI in order to allow multiple music rolls to be selected and played on a player piano. This invention was adapted for use with records in the form of the jukebox—the innovation—by AMI in 1927. Neither the company nor the jukebox was taken seriously at first. But the Great Depression made it increasingly difficult for restaurants, social clubs, and other establishments to afford to bring in live bands to perform for their patrons. And the jukebox provided a steady stream of music at low cost. Records were usually changed out weekly, creating a steady market.

Jukeboxes took off—and they revolutionized the industry in multiple ways, including through making audible, for the first time, music that was banned from the radios—music by African Americans. The jukebox marked White America's first full exposure to Black music—and it opened the door for African American musicians to participate actively in the shaping of musical tastes and expectations. In jukebox-land, rags and boogie-woogie and later blues and early R&B were hits. So the jukebox—which came out of left field, not from the leaders in the industry—changed both the industry and music itself.

INNOVATION AND NETWORKS

This brings us to another systems analysis change principle—one that runs counter to our notions of the rugged individualism that defined the settlers of the frontier landscape of the United States. Single innovators do not create change—the “lone genius” concept is a fallacy that's been pretty roundly debunked (Becker, 1984; DiMaggio, 1982; Dowd, 2007; Levine, 1988). Instead, both inventors and innovators are key parts of a larger cultural system of production, distribution, and reception.

That system always depends upon networks of people. It is those networks of people that work together to legitimize an innovation. It is these networks of people that move innovations from the fringes to the center, where they can transform practice at the system level.

Systemwide change requires systemwide involvement. Or, to say that another way, it is difficult to make system-level progress by solely treating institution-level interests. And, while seeding innovation is tremendously important, innovation alone will not promote change across the scholarly communications system.

Right now, our networks do not include all of the players that need to coordinate in order to move our operations up several levels. In scholarly communications, no single stakeholder group has the power to work in silo to fix the system; we are all part of the system, and our activities and interactions reinforce that system's isomorphism from every angle. We have to work directly across all of the stakeholders in the cycle—the creators, the publishers, the researchers, the technologists, the libraries.

Alignment is such a powerful tool. I pivot around to the same question over and over again: How can we tap into

³See Allen and Lincoln (2004) and DiMaggio (1987).

communities to ensure that we—as librarians, researchers, scholars, publishers, and producers—build a strong digital infrastructure that serves our mission well and ensures the broadest possible transmission of knowledge in the 21st century?

ACADEMIC PUBLISHING AND THE CRISIS

Since at least the 1970s, libraries, publishers, and researchers have all described scholarly communications as a system in crisis. To understand how we got to this point of “crisis,” let alone how we might get out of it, let’s go all the way back to the historical roots of academic publishing, the production of the first research journal 350 years ago, *Philosophical Transactions of the Royal Society*. The journal was an important “invention,” to say the least.

It was also an effective innovation—this publication fundamentally changed the way research was documented, disseminated, and preserved. And the package and process it provided has functioned as a cornerstone in the scholarly communications environment for centuries.

Why did the *Philosophical Transactions* work? First, it successfully encapsulated research: provided a ready mechanism for registering, disseminating, and archiving ones research. It was a good, practical innovation. But again, why did it *work*? Key to its success was the network in which it was embedded—the Royal Society. This was a ready network of influential players. The journal was an effective mechanism that helped practitioners reach each other. It came into being at a time when scientific discoveries and progress were escalating in the Western world. There was much to publish, much to learn, and many who had the wherewithal (interest and means) to use and enjoy it. The network moved this innovation into practice at the center of a growing field of scholarly inquiry.

From roughly the late 1600s to the 1970s, academic publishing became a fairly stable, predictable business. Creators (the author/researchers, usually ensconced in tenure-track or tenured positions) worked with publishers (mostly university presses and nonprofit scholarly societies, who practiced “publishing” in a service-oriented manner) to produce two main forms of written scholarship: monographs and journals (Skinner & Lippincott, 2013).

Publishers served as gatekeepers, editors, and disseminators of scholarship, and they engaged networks of scholars to ensure the merit of each publication they issued. Academic libraries purchased these works; cataloged, organized, and provided access to them; and preserved them for future generations of researchers. Everybody had a role, and the system thrived.

The unsettling of this relatively healthy system, and the resulting articulation of “crisis,” can be traced back to at least the 1970s (notably, an economically volatile moment for Western markets). Conventional wisdom today cites two main culprits as the causal agents in this crisis: (a) the shift

from print mode to digital mode of communication, and (b) the consolidation and infamous “bundling” practices in the journal publishing market. That explanation is a gross simplification, though. Reality is much, much more complicated.

One factor was a new invention: the Xerox machine, which rose to prominence quickly in the 1960s—not due to its use in the scholarly market but due to its effectiveness for secretarial functions in the business world. One side effect of the Xerox machine’s success was that scholars and researchers could now copy any portion of a journal for a fraction of its cost and *take those copies home* (Rosenbluth, 1979).

This improved researchers’ access to diverse literatures; it also became one of several factors that destabilized journal sales, which hurt the two main journal publishing groups of that time—university presses and societies. Libraries saw price hikes from publishers, some of which were compensating for the drop in their market. Libraries started cutting subscriptions. And then publishers raised their prices more to compensate for increased losses of subscribers, which led libraries to cut more subscriptions. And the subscription spiral—the first wave of the serials crisis—began.

A second culprit was disciplinary specialization in the 1960s–1970s. Faculty and researchers began subspecializing in very specific research areas, each of which now seeded its own journal or journals. The introduction of new societies and journals fractured the subscription and membership base for longstanding societies. And libraries could not keep up with the sheer volume of volumes issued anymore (Weingart 1991, 2010).

A third, intertwined factor was the rise in scholarly output during this same time frame. Scholars began producing more publications, more quickly, in large part because of the attention given to publishing in higher education rankings—both for disciplinary departments and across the university. The “publish or perish” dance began in earnest, and increased supplies of journal articles yielded still more journals—and libraries’ acquisitions budgets suffered under the increased weight. Libraries made hard decisions regarding the journals they purchased.

The drop in revenues from subscriptions from all of these (and other) factors left societies weakened—and opened the door to industry consolidation and market concentration practices. Commercial publishers bought out the weakened societies.⁴ The commercial publishers were feeling the burn of market saturation as well, though, and they sought a way out of what they experienced as “the subscription spiral”—where libraries cancelled journals, and publishers responded by increasing the price-per-subscription for those journals, which then yielded more cancellations.

Commercial publishers knew they had to do something, both to address the spiral and also to start moving

⁴See, e.g., Sarah Glassmeyer’s illustration regarding how that played out in one academic arena, the field of law, ramping up in the 1980s and 1990s: “Legal Publishing Mergers,” <http://sarahglassmeyer.com/?p=1210> (accessed May 2015).

strategically toward a more electronic future. And one publishing group—Academic Press (AP)—developed an innovative strategy that it hoped might help with both: Bundled subscriptions, or the Big Deal (Poynder, 2011).

The innovation itself was largely an accident coupled with serendipity, as so many innovations are. The key to its success, though, is that *all stakeholders in the system embraced the innovation*. The positive initial reception of the Big Deal was truly astounding in both breadth and depth.

Academic Press initiated the idea. They spotted a source of government funding for electronic content in the UK, and they pitched a project. The UK's Higher Education Funding Council funded the Academic Press with a multijournal, multiyear license that provided all UK higher education establishments with “free”-use access to all of AP's titles.

The arrangement seemed like a win for everyone when it launched in 1996. The UK's Higher Education Funding Council could cite the success of this strong project in filling a notable gap in electronic transmission of journals and serving as an example of a new national digital infrastructure. Libraries and researchers experienced vastly increased access, especially through early consortial arrangements. And AP gained a multiyear funding stream and a relatively easy mechanism for providing electronic access to all of its publications in a way that did not require difficult administrative technical restrictions (i.e., identity management issues for logging on and seeing content greatly reduced due to the national scale of this project). And by now bundling everything into one subscription, AP found that it could leverage its “all or nothing” status to break the cancellation cycle.

It was a bold move in a critical moment. The sense of crisis that permeated the scholarly communications landscape left the Big Deal largely underanalyzed, even by AP itself, which later revealed that it had not thoroughly evaluated the cost model that became the new base model in academic publishing.

There were a few people in the field—mostly librarians—who quickly pointed out that the Big Deal was a short-term win for individual institutions and a long-term loss for the whole field. But because it appealed to local interests, most institutions bought in. Once they bought in, their campuses experienced vastly expanded access to content—and they became unwilling to give that up, systemwide.

As the Big Deal practice expanded across the big publishers (those that had consolidated), it further damaged an already broken scholarly communications system. As Richard Poynder (2011) has described, the problems in the system—rising numbers and costs of journals versus the shrinking budgets of libraries—were not addressed by the Big Deal. Library budgets continued to decrease, and journal prices continued to increase, but now libraries had agreed to “all or nothing” packages with the big publishers.

They had signed Big Deals that limited their negotiation powers with the biggest publishers. As libraries cut their collections to balance their budgets, they had to cancel a

disproportionate amount of two publication types—journals run by smaller publishers (who didn't have the market share required to “bundle” publications) and monographs.

That weakened the small publishers, who often perished or were taken over by the conglomerates. It also weakened the university presses, which depended upon library purchasing power to recoup costs associated with monograph publication. And it was disastrous for the relationship between libraries and university presses—two groups situated on campuses that might instead have been great partners and collaborators. Ultimately, the Big Deal increased market consolidation and decreased the power of the purchaser. It also caused a sharp split between these two university campus-based units.

Most of the efforts that have tried to resist or respond to the Big Deal have inadvertently reinforced it. Some of these serve to help smaller publishers stay afloat, but they do not treat the systemic problem.

CHANGING THE SYSTEM

Scholarly communication is not the sole burden of libraries; there are a lot of stakeholders and interests in the landscape. But in this case, the crisis has largely been absorbed by—and at times, occluded by—the libraries.

In order for any activity to have an impact on the system, players from across the system must be involved, whether by accident or by design. Stakeholder buy-in—the successful distribution and reception of an innovation—is a mandatory component of systemwide change. Arguably, two key stakeholder groups had not noticed the problem until recently (if at all): the commercial publishers and the researchers.

As researchers are touched directly by the problem—that scholarly publishing as a system has hit a critical moment where publishers cannot publish enough content to meet author demands *and* libraries cannot purchase enough content to meet researcher demands—they will be incentivized to act. Likewise, as commercial publishers see revenues decline, they are incentivized to act.⁵ Under these conditions, the likelihood of systemwide change increases. But that change could take on any of a number of forms.

⁵Indeed, these actions may be already underway—take, for example, recent movement by Elsevier (including through its Analytical Services division) to address upper administration representatives directly with a new pitch and new products. The products include more learning technology components, assessment tools, and data. In other words, Elsevier, as one of the critical stakeholders, seems to be shifting its attention from the library, with its limited power and limited budget, and toward university higher administration. See, e.g., <http://www.elsevier.com/online-tools/research-intelligence/resource-library/resources/analytical-services-catalogue-of-offerings> and <https://www.youtube.com/channel/UCffqIj7ICiYccxNDPEEjHHg> (accessed May 2015).

LIBRARIES AS CHANGE AGENTS

Libraries have sought ways to transform the system for years, often supported by “innovation” funds from grant funding agencies and foundations. But as described, many factors must align in order for innovations to stick, even if those innovations have the potential to change the system.

Libraries have tried to address the scholarly communications crisis in a variety of ways to date. These include (but by no means are limited to) the following:

- The Big Deal
- Raiding the materials budget
- Raiding the staffing budget
- Institutional Repositories
- Open Access (OA) policies
- Research and publishing about the Big Deal (see, e.g., Bergstrom, Courant, McAfree, & Williams, 2014)
- Public termination of Big Deal contracts
- Engaging in “library publishing” activities

The Big Deal was effective because it involved and incentivized all of the stakeholders. There seemed to be something in it for every group, and every group chose to participate accordingly. Each of these other attempts to change the system has been hampered thus far in the lack of full stakeholder involvement.

Institutional Repositories (IRs) actively disincentivized publishers from participating and offered only vague benefits to researchers. Some librarians continue to advocate for the IR as a mechanism that libraries could use to flip the system overnight—for example, by having every campus pass a Promotion & Tenure (P&T) rule that only the content that is deposited into the institution’s IR counts toward P&T.⁶ The problem with this approach, though, is that neither researchers nor publishers will back such an initiative because there is no clear advantage in it for them. And with two powerful stakeholder groups absent, such a change is unlikely to occur.

Open Access policies have been more successful, and arguably do hold the most promise for a systemwide change, in large part because all three of the core stakeholders—publishers, researchers, and libraries—have found that there could be something in it for them. But politics have hindered OA’s success as a methodology. OA has often become a battleground where “publishers” are lumped into one category and “librarians” in another, and the two are pitted against each other. Recent work by SPARC (Scholarly Publishing and Academic Resources) to illuminate and reveal the economic argument for OA may help this pathway to continue to be one potentially viable pathway forward.

On the research and publishing side, there have been recent studies that seek to provide hard data about current practices and constructively addressing the economics of scholarly publishing (see, e.g., Bergstrom et al.’s [2014] efforts to surface numbers that previously were protected by nondisclosure clauses regarding what different campuses and classification levels have paid for the Big Deal). Similar to the success of OA policies, such documentation helps to provide both evidence and positioning that could eventually have great impact.

Terminating Big Deal contracts publically—explicitly talking about how and why this is happening—is another helpful piece of the puzzle, particularly in helping faculty to understand how the system is failing them.

And library publishing? The jury is out: Hundreds of libraries are investing effort in these experiments, and many of these are beginning to partner with other publishers. These partnerships could be the key to incentivizing each of the necessary stakeholder communities to act in accord to build a thriving 21st-century scholarly communications system (Lippincott, 2015).

CULTIVATING SYSTEMWIDE CHANGE

Systemwide change is best accomplished when all of the players in a system work together. There is great power in alignment, and it remains relatively unexplored in scholarly communications today.

A common complaint in libraries and related institutional fields is that we lack adequate resources to seed field-changing, “innovative” research and development work. In a society that remains among the wealthiest in the world, it is difficult to accept that as an accurate diagnosis of the problem. What if instead of blaming the lack of resources, we begin to question how our available money is focused and what it can enable through adjusting that focus?

Collaboration (similar to, yet not synonymous with, alignment) thus far has been encouraged and seeded primarily through funding small cross-institutional teams that work together to address a research question that aims to establish new knowledge, new development, or new models of interaction. This “let a thousand flowers bloom” approach has led to many amazing projects, almost all of which have been bounded by the two- to three-year funding cycle that supported them.

A difference between academia and industry here can be illustrated through a rather canonical example: the 1970s and early 1980s video format war, VHS versus BetaMax. Industry players built multiple options, and for a brief window, the various players dug in their heels, some in support of VHS, and others in support of BetaMax. But having multiple products confused the public, many of whom decided to wait to buy anything. Sales plummeted and plateaued near zero. It took only a few years for the industry to determine that

⁶Stephen Harnard, conversation with the author, 2014.

losing buyers was not in anyone's best interest. VHS emerged the victor, but really, the whole market benefitted from that consolidation of practice.

In academia, although we do not typically use these terms, we do have a "market" of users (scholars and researchers), and we have numerous market drivers that impact those users—including P&T, prestige, and remuneration. The stakeholders in scholarly communications also have access to investment capital for some of our work, and those funding streams are tied directly back into these market drivers. Most of this investment capital exists through federal or foundation-based funding sources. As we compete with each other for these resources, we follow the calls for proposals. Over the last few decades, many of these have rewarded "innovation." While innovation is a key component of system change, an overabundance of innovation arguably does not yield an environment of plenty. Innovation loses its potential to transform practice if we innovate without follow through or facilitation, without networks that are incentivized to help move those innovations from the outskirts to the core of our field.

So—what if we imagine something different, a way of encouraging collaboration, not between institutions, but across systems? What if resources and attention were also geared toward helping innovations succeed?

In 2014, several major scholarly communications funders—including the Institute of Museum and Library Services (IMLS) and the National Endowment for the Humanities (NEH)—began to openly reevaluate and transform their longstanding focus on innovation.⁷ This shift in mindset values alignment and networking *in addition to* innovation. Indeed, throughout the 2014 IMLS Focus Strategic Priorities meeting, stakeholders from across the library sphere encouraged IMLS to shift its National Leadership Grant category away from "innovation" alone and toward efforts that combine innovation with networking into a "national digital platform." They also discussed the need for funders to better coordinate their own work toward the development of a national resource and technical infrastructure.

This approach echoes significant shifts in the broader public sector, where such methodologies as Design Thinking and Collective Impact emphasize stakeholder alignment and network building. The scholarly communications field may benefit from employing these facilitation methods in order to

orchestrate change thoughtfully and purposefully, engaging the broad range of stakeholders including scholars, reviewers, editors, publishers, distributors, technologists, and librarians.

SYSTEMS CHANGE METHODOLOGIES

In the social sector, initiatives geared toward system-level transformations are increasingly turning to methodologies that cultivate multisector stakeholder alliances in order to create and sustain transformative change (e.g., environmental improvement, reductions in homelessness, lowering teen pregnancy rates).

In these approaches, systemwide change is encouraged through the work of cross-stakeholder networks, gathered purposefully to develop a shared vision and to engage in iterative development (with regular check-ins and refinements along the way) over an arc of years to achieve that goal.

Focusing on one of these facilitation methodologies, Collective Impact emerged as a term and set of principles in 2011, through a publication in the *Stanford Innovation Review*. Since that time, the method has been deployed in numerous settings and has become popularized through publications, testimonials, and facilitator-training workshops and other educational opportunities.

Collective Impact projects begin with an identified problem area that both affects and is impacted by a range of stakeholders. Facilitators gather all of the relevant stakeholder communities and help them to come to agreement on a common vision or goal for change. This vision cannot be a platitude—it has to be an attainable goal toward which progress can be mapped and measured. The stakeholders must agree, not only on this goal, but also to work toward it together over an arc of years. These are not usually short-term, 1–3-year projects but rather 5–10-year journeys.

Each stakeholder or stakeholder group determines what specific, incremental steps it can take to forward progress toward the system-level goal and also how the progress in this stakeholder-level work can be mapped and measured. This stakeholder-specific work must be coordinated and facilitated such that each group's work bears a visible, explicit, and reciprocal relationship with the work of the whole collective. These mutually reinforcing activities have to meet the vested interests and economic drivers of each stakeholder group *and* the system itself—a hard balance that is only struck by constant communication and consistent refining of the goals of the stakeholders, both individually and as a system.

Active engagement continues throughout, with a lightweight "backbone" of facilitation providing the necessary connection work—both within and between each of the stakeholder groups. Progress is evaluated incrementally, and recalibration takes place as necessary.

The purpose behind this methodology is to encourage every player to change simultaneously, deliberately, and in concert with each other. These changes then reinforce each

⁷For example, at the Institute of Museum and Library Services' (IMLS) Focus Strategic Priorities 2014 meeting, Chief Information Officer of the National Endowment for the Humanities (NEH) Brett Bobley called for a new approach, saying, "All of our funding efforts must synergize with DPLA." See video from the IMLS Focus Strategic Priorities 2014, at 14:30. Slide text: "Federal agencies must recognize that DPLA isn't just another grantee, it is a national resource, and all our funding efforts must synergize with them. All of them": http://www.tvworldwide.com/events/imls/140429/globe_show/default_go_archive.cfm?gsid=2491&type=flv&test=0&live=0http://blog.imls.gov/?p=4886 (accessed May 2015).

other at a system level, making it more likely that those changes will “stick.”

As noted by John Kania and Mark Kramer in 2013,

The traditional model of social change assumes that each organization learns its own lessons and finds its own solutions which are then diffused over time throughout the sector. In effective collective impact initiatives, however, learning happens nearly simultaneously among all relevant stakeholders and, as a result, many organizations develop and respond to new knowledge at the same time. This has two important consequences: first, new solutions are discovered that bridge the needs of multiple organizations or are only feasible when organizations work together, and second, all participating organizations adopt the new solution at the same time. . . . All organizations are better able to learn what *each* organization learns, enabling a more aligned, immediate, and coordinated response.

Utilizing this methodology to bridge the interests of stakeholders in scholarly communications could help the system to evolve more effectively and smoothly. Instead of innovating and competing, institutions could reinforce and magnify the investments that they are already making today, spreading innovations through networks of action.

Educopia Institute has used this facilitation methodology to guide its work with communities—including those that span subsectors (public, academic, and special libraries), sectors (journalists, press association directors, publishers, researchers, technologists, librarians, archivists), and fields (museums, archives, and libraries). The model requires a different set of investments, namely in the five key “conditions” of Collective Impact: a common agenda, shared measurement, mutually reinforcing activities, continuous communication, and backbone (facilitation) support. These efforts are necessarily decentralized in terms of where the work takes place (through working groups—sometimes uni-sector, and sometimes cross-sector) but centralized in terms of the vision and connectivity (steering committee and facilitators).

Exploring the utility of this methodology, or of a blend of this methodology with other system-change methods (e.g., Design Thinking) in scholarly communications, could build on cross-sector network experiments that are already underway, including the Research Data Alliance, Force11, and the Committee for Coherence at Scale. Empowering scholarly communications stakeholders to see themselves as key parts of a system, not just as competitors for funding and opportunities, could have transformative power in the scholarly communications field.

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