

Building Resilience Through Cooperation: Two Case Studies

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Conflicts of interest: All authors have provided consultancy services to the organizations offered as case studies in this article.

Key points

- There is evidence that cooperatives provide greater resilience in times of crisis than conventional enterprises
- Cooperatives subscribe to seven values associated with economic and governance participation as well as equality and concern for community
- We present two case studies; one well established (Crossref) and one new (the UK national research identifier coordinating committee) that have adopted some cooperative principles
- There is a strong push toward greater cooperation in the scholarly communications sector
- There is enough evidence from our own sector and the wider socio-economic landscape to justify prioritizing cooperation and cooperative values in our common endeavors in coming years.

Introduction

There is some evidence that cooperative organizations are more resilient than 'conventional' competitive ones. Much of this evidence has emerged from analyses conducted after recent economic and political crises (Roelants, 2012). The risks emerging at this turbulent moment in history require us to address issues of resilience directly and urgently, so this evidence should provide food for thought for all of us concerned with the present and future health of the scholarly ecosystem. We provide two case studies which show how the benefits of cooperation have been, and are being, operationalized in this space, and examine the principles of these initiatives in the context of the core cooperative values.

According to the Democracy at work institute, worker cooperatives in the United States survive their first six to ten years at 7 percent higher rates than conventional businesses (Palmer, 2020). The 2011 annual report of the International Organisation of Industrial, Artisanal and Service Producers' Cooperatives (OIASPC) suggests a reason for this statistic, noting that there was, "a better situation in terms of economic performance, employment and enterprise survival rate for worker and social cooperatives compared to conventional enterprises." (CICOPA, 2011) A 2016 paper, *What Makes Rural Co-operatives Resilient in Developing Countries?*, found that, "co-operatives both have the potential to develop, and also need, capabilities in five key areas: (a committed) membership, external networks, collective skills for governance, innovation and an enabling government. These areas ... [are] the foundation of current and future resilience." (Johnson et al, 2016)

Further to this, the abstract of the International Labour Organization's report *Resilience of the Cooperative Business Model in Times of Crisis* describes "historical evidence and current empirical evidence that proves that the cooperative model of enterprise survives crisis, but more importantly that it is a sustainable form of enterprise able to withstand crisis, maintaining the livelihoods of the communities in which they operate." (Birchall and Ketilson, 2009)

Is the same sort of increased resilience also seen in scholarly publishing endeavors that are built on cooperation rather than competition? There is a body of work which makes a compelling case that competition actively harms resilience, such as Alfie Kohn's seminal *No contest* (Kohn, 1986), which adds special force to this question.

The cooperative values and scholarly communications

In this article, we will look at two examples of cooperation in practice in our industry — one a well-established organization, the other a new initiative. We will discuss the opportunities and challenges this cooperation presents, and consider whether or not they are, and will be, more or less resilient as a result. While neither are formally organized as cooperatives, they both share a number of principles with those of the cooperative movement (International Cooperative Alliance, 2012). These are:

1. Voluntary and open membership - "Cooperatives are voluntary organisations, open to all persons able to use their services and willing to accept responsibilities of membership, without gender, social, racial, political or religious discrimination."
2. Democratic member control - "Cooperatives are democratic organisations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership."
3. Member economic participation - "Members contribute equitably to, and democratically control, the capital of their cooperative. At least part of that capital is usually the common property of the cooperative."
4. Autonomy and independence - "Cooperatives are autonomous, self-help organisations controlled by their members. If they enter into agreements with other organisations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy."
5. Education, training, and information - "Cooperatives provide education and training for their members, elected representatives, managers and employees so they can contribute effectively to the development of their cooperatives. They inform the general public – particularly young people and opinion leaders – about the nature and benefits of cooperation."
6. Cooperation among cooperatives - "Cooperatives serve their members most effectively and strengthen the Cooperative Movement by working together through local, national, regional and international structures."
7. Concern for community - "Cooperatives work for the sustainable development of their communities through policies approved by their members."

First, though, what do we mean by resilience? In his 2015 report, *Organizational Resilience*, David Denyer defines it as, "the ability of an organization to anticipate, prepare for, respond and adapt to incremental change and sudden disruptions in order to survive and prosper." According to ISO 22316, it is more simply, "the ability of an organization to absorb and adapt in a changing environment." (Denyer, 2017)

The centrality of cooperation to resilience has been recognized in many environments, and underpins vital developments in such apparently hyper-competitive spaces as the motor industry. In his presentation for an NIH workshop on the Role of Generalist Repositories to Enhance Data Discoverability and Reuse (Martone and Stall, 2020), Sayeed Choudhury outlined the concept of 'co-opetition' as practiced in the motor industry. Co-opetition relies on a 'value line', which is used to distinguish between features or services which offer a competitive advantage, and those which do not, meriting cooperation.

In the example given, rival companies compete on their car designs and performance metrics (above the 'value line') and cooperate on components that come below the line, that is, components that demand high (or compliant) standards but which don't typically count as part of the purchaser's decision-making, such as seat belts. This enables pooling of resources, with accompanying economies of scale, and benefits all the stakeholders by freeing up additional

resources for more consumer-critical innovations, resulting in more attention being paid to purchasers' differential preferences. Thus cooperation underpins the industry as a whole, and serves to direct competition toward areas which ultimately benefit specific customer segments.

The workshop concluded that in the repository space, a spirit of cooperation was well established; we would argue that this concept could be applied more widely to scholarly communications. Shared and open infrastructures underpin aspects of the functioning of seeming competitors and enhance the author experience (for example, the use of ORCID for logging in to journal platforms from rival publishers).

The examples given in this article serve as a contrast to potentially deleterious trends in the industries that make up scholarly communications, trends borne of a more 'traditional' competitive business approach. The last 20+ years have seen plenty of change in the scholarly publishing and wider scholarly communications world, including the wholesale digitization of journals, then books; the rise and fall of the Big Deal; the steady expansion of open access and open research; not to mention a global pandemic and two global financial crises, the second of which is still ongoing.

During the same period, many scholarly communications organizations have been acquired, merged with others, or failed — presumably at least in part because they were unable to thrive (or even survive) one or more of these changes. A few examples include Wiley's 2007 acquisition of Blackwell; Digital Science's acquisition of numerous small startups; LYRASIS's acquisition of DuraSpace and the subsequent closure of CASRAI; Elsevier's acquisitions of Mendeley, Bepress and SSRN.

One could argue that this competitive consolidation has strengthened the acquiring organizations, and from a narrow shareholder perspective, that may be true. However, a strategy of perpetual growth and consolidation is not sustainable in a finite market with limited resources. The concentration of market share and power in a dwindling number of companies risks distortions to many of the dynamics which support the health of scholarly communications as a whole. Can a model which risks the health of its own ecosystem and relies on unsustainable growth be said to be resilient?

This evolving landscape of consolidation has added fuel to the rise of the 'Open Movement' which emphasizes the common good and a communitarian ethos as a counterpoint to the perceived damage done by this concentration of power and control. While many commercial organisations have participated admirably in open initiatives, some larger corporations have occasionally agitated against openness in the pursuit of corporate self-interest.

This throws the cooperative 'below the line' initiatives into sharp relief. The contrasting (and sometimes contradictory) value systems in play in co-opetition serve to illustrate the systemic benefits of cooperation: a focus on shared benefits and common goods has added resilience and efficiency to scholarly communication. In this article, we present two case studies which

have sought to implement cooperative principles at an organizational level, though with one eye on the systemic benefit to be obtained by doing so.

We will look at how closely their principles and practices are aligned with the cooperative principles above, and ask: how much of an impact might these have on their organizational resilience?

Crossref

Our first example of such an organization is Crossref, a global provider of digital object identifiers (DOIs) for research outputs and, more recently, grants, which also provides a number of value-added DOI-related services. According to their original certificate of incorporation, Crossref's mission is: *"To promote the development and cooperative use of new and innovative technologies to speed and facilitate scientific and other scholarly research."* (Crossref, 2000)

Crossref was founded in 2000 by a group of 12 publishers, in cooperation with the International DOI Foundation. AAAS, Academic Press, AIP, Association for Computing Machinery (ACM), Blackwell, Elsevier, IEEE, Kluwer Academic, Nature Publishing Group, Oxford University Press, Springer-Verlag, and John Wiley & Sons Ltd recognized that it was essential for them to collaborate if they were to solve the citation linking problem which, in turn, had been created by the move to digital publication.

They were joined by four more publishers before the official launch: The University of Chicago Press, Institute of Physics Publishing, World Scientific Publishing, and Taylor & Francis. Under normal circumstances, many of these organizations would see themselves as competitors but, in the spirit of principle #6, instead they worked cooperatively to achieve their shared goals for the good of the wider scholarly community (#7).

This diversity was also reflected in the composition of the original Crossref Board, which, according to Bob Campbell (then of Blackwell), was critical to Crossref's success. "Right from the start, we had very significant representation from key societies and not-for-profit organizations. That was tremendously helpful politically, in gaining acceptance within the broader scholarly community."

Crossref's policies and practices around its Board, membership, and sustainability are firmly aligned with principles #1, #2, #3, and #4. It is supported financially by member organizations (principle #4), which pay a membership fee that is tiered according to the size of the organization; there is also a fee per content item registered (principle #3).

Membership has evolved from a primary publishing focus to a more inclusive definition that "is open to all organizations that publish professional and scholarly materials and content", a move formalized in 2018 with the inclusion of this language in Crossref's by-laws (Crossref, 2018). It has expanded very significantly since launch, with members from 118 countries in 2018 (ibid.) and including organizations large and small, commercial and not-for-profit, from publishing and

beyond (principle #1). The Board is elected by members, on a one member, one vote basis — irrespective of how large the member organization (principle #2). This principle separates representation within the organization from the scale of the dues paid by, or economic power of, the member. It is a key factor in maintaining fairness in Crossref's governance.

Crossref also has a strong commitment to education, with a large section of its website devoted to open online resources, as well as an ongoing program of in-person and virtual educational events, which are open to everyone (principle #5).

The concluding sentence of *The Formation of Crossref: A Short History*, published to celebrate the organization's first 10 years, reads, "It may not be possible to predict what [Crossref] will achieve in the next 10 years—but whatever it is, it will be decided by consensus, and realized through collaboration." (Crossref, 2009) It hasn't always been easy to maintain a spirit of collaboration among such a diverse group. As Executive Director Ed Pentz noted, writing on the Crossref blog when the organization turned 20, "While we've been very successful, there is a lot we can do better and it is tricky keeping all our stakeholders happy - but that's what we've always done and we'll continue to do it by being open, inclusive, collaborative, and willing to change and adapt." (Pentz, 2020)

Looking forward to the next 20 years, Amy Brand wrote on *The Scholarly Kitchen* last year that, "The Crossref of 2040 could be an even more robust, inclusive, and innovative consortium to create and sustain core infrastructures for sharing, preserving, and evaluating research information." (Brand, 2019) Encouragingly, at their July 2020 meeting, the Board approved a motion, "That Crossref should proactively lead an effort to explore, with other infrastructure organizations and initiatives, how we can improve the scholarly research ecosystem. Crossref is committed to the collaborative development of open scholarly infrastructure for the benefit of our members and the wider research community." Together with their structure, governance, and business model, this commitment to the cooperative principles augurs well for Crossref's future resilience.

Proposed UK national research identifier coordinating committee

Newer organizations and initiatives, launched during a time of rapid change and other challenges, must plan for their future resilience from the outset. Our second example is an initiative which is doing just that — the proposed UK national research identifier coordinating committee.

In 2018, Professor Adam Tickell's report on open access to research publications included a recommendation to the UK government that Jisc should "lead on selecting and promoting a range of unique identifiers ... in collaboration with sector leaders with relevant partner organisations." (Tickell, 2019) Jisc and UKRI subsequently commissioned a report in response to Professor Tickell's recommendations which outlined the component parts of a comprehensive UK persistent identifier (PID) strategy. (Brown, 2019) This strategy is now being put into practice, led by a group of UK research sector stakeholders.

The components are designed to create a resilient, sustainable network of PID adoption and oversight, led by the UK research community, broadly defined. This network will be coordinated by a national research identifier coordinating committee, which will advocate for improvements to PID integrations and coverage, and will manage the risks of the dependencies created by these integrations on organizations such as Crossref and other allied PID providers.

Although still at a nascent stage, this initiative is founded on principles that can be closely mapped to most of the seven principles of the cooperative movement as listed above. The stakeholder group comprises representatives from across the UK higher education community, as well as funders, publishers, research information experts, and the identifier providers themselves. In recognition that research and the open research infrastructure are international, discussions with the global community are also planned, focusing first on repositories, community infrastructures, and publishers, particularly OA publishers as a consequence of the origins of the initiative in the Universities UK Open Access Coordination Group (principle #1).

The proposed values for the committee, which were adopted at its September 2020 meeting, demonstrate this commitment to collaboration and can be mapped back to the seven cooperative principles:

1. **Include:** take the broadest view of stakeholders in the PID community and invite participation across sectors and disciplines, as well as different types and levels of organization (#1, #2, #3)
2. **Respond:** seek out and act upon cross-community input and priorities, and help UK research information management to stay ahead of changing circumstances (#4)
3. **Reinforce:** develop existing strengths with minimal duplication of effort, and prioritize the resilience and sustainability of the evolving PID network (#4)
4. **Connect:** recognize that the PID network can be more than the sum of its parts and pursue interoperable and open solutions to shared challenges (#6)
5. **Develop:** help strengthen and grow existing and new communities, standards, and open, transparent governance across critical research information infrastructures (#2)
6. **Extend:** increase the coverage, adoption, and utility of the PID network to the benefit of the UK research community in its work nationally and internationally (#7)
7. **Demonstrate:** showcase the potential of PIDs to enhance real-world workflows and provide evidence of the benefits such enhancements have brought (#5)
8. **Advise:** gather and share sector and community expertise and ensure the group's insights and experience are used for the benefit of policy-making and practice (#7)

While it won't be possible to tell how successful or resilient this initiative will be for some time given that it has only just been established, it represents an attempt to 'design for resilience' through its values of cooperation and its collaborative approach to governance. It is certainly explicitly targeting resilience with these principles, most obviously principle number 3 (Reinforce), but also — critically — with an eye to future evolution and adaptability, for example with principle number 5 (Develop).

The influence of cooperative values on these principles is clear. By consciously seeking to incorporate the practical and ethical strengths of the cooperative movement (such as resilience and egalitarianism) alongside the communitarian ethos of the open movement, this initiative hopes to address the urgent needs of its core constituency (the UK research community) whilst bolstering global cooperation with the research infrastructures upon which it depends.

Conclusion

Embracing principles of cooperation and collaboration in both governance and strategic planning appear to be an important way for organizations to help ensure their resilience. Certainly, there are strong indications based on the performance of cooperative organizations during and after recent crises that this is the case. Within the scholarly communication community, organizations like Crossref have shown the way towards more cooperative governance. The success and sustainability of Crossref would seem to bear out the findings of research into the resilience of the cooperative model, notwithstanding the fact that Crossref is not a formal cooperative.

There is a strong push toward greater cooperation in the sector, exemplified by Crossref's move towards greater collaboration and inclusion, and in the cooperative-influenced design of the UK national research identifier coordination committee. These case studies show that at this time of crisis, and perhaps in part in response to the distortions created by recent consolidation of power in the hands of a small number of corporate entities, there is an appetite for enhanced cooperation in areas of common need in this sector.

We would argue that, while only time will tell if the promise of greater cooperation will truly prove to be more resilient and sustainable, there is enough evidence from our own sector and the wider socio-economic landscape to justify prioritizing cooperation and cooperative values in our common endeavors in coming years.

Authors' note: The authors have recently established a co-operative and their analysis is based in part on the research they undertook before beginning that process, and in part on the recognition of the similarities between the initiatives used as case studies and the co-operative principles which they were seeking to integrate into their new collaborative venture.

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