CASE STUDY

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From being disrupted to being a disruptor: How university presses are helping to drive positive change

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Key points:

- Digital disruption is not new and there are plenty of examples of university presses embracing radical change to help achieve our goals.
- Cambridge University Press has shown the benefits of moving from being disrupted to being a disruptor in early open access (OA) transition.
- University presses are well positioned to be part of the collaborative, systemic change now required to fulfil OA ambitions.
- Being focused on the real needs of our communities enables us to see even major disruptions, including artificial intelligence, as just part of our development.

DIGITAL DISRUPTION IS NOT NEW

Disruptions, evolutions and revolutions are essential for the development of any industry or ecosystem. Over the years, digital disruptions have impacted university presses like every other part of the publishing ecosystem and far beyond. Digital transformations have fundamentally changed what we do and how we do it. A historic example would be how printing has changed so much: first, technology made printing safer, then we were able to work with printers around the world to benefit from different approaches, specialities and of course cost benefits, and now with print-on-demand (POD) it is possible to print just the quantities we need, when and where we need them (better for costs and sustainability). Each step of the way those developments have disrupted established processes and people's roles, but they have also catalysed new roles and have brought significant benefit to publishers and our customers.

Digital disruption has been part of academic publishing for over 30 years:

- 1989: the World Wide Web was invented and was the seed for so much change that has followed
- Early 90s: journals went online, initially just as PDFs but over time more and more functionality has been added to provide greater service to our customers
- Mid-90s: Google and Amazon launched. No one could have predicted the lasting impact they would have, but they have fundamentally changed the landscape we are all living and working in
- 1999: the first open access (OA) journal was launched
- Early 2000s: the rise of ecommerce and the start of POD taking off
- 2004: Facebook launched and social media started to change how we interact with each other and with our customers. This was followed by Twitter (now X) in 2006 which many academics are active on

These changes have sometimes been challenging, and in many ways fundamentally changed some aspects of what we do and how we do it. But they have also often improved the service we can provide and therefore helped us fulfil our organizational missions. For example, digital developments have enabled us to reach unprecedented numbers of scholars, teachers and learners. Sometimes the disruption is directly about digital impact, for

example, journals going online, and other times it is what follows from that, for example, OA. Moreover, the pace of change is not slowing down. Generative artitificial intelligence (GenAI) and AI are obviously the poster children for this disruption and it is impossible to imagine that the scale of change in the next decade will not dwarf that which we have seen in the past decade.

DISRUPTION CAN HELP AS WELL AS HINDER

Sometimes the digital disruption can be harnessed to help us reach more people or work smarter. In a print world, we were limited in whom we could reach or how they could access our content. For all publishers, but especially for university presses driven by our mission, maximizing the impact of our content is what we are all about, so the benefits of digital dissemination are obvious, especially when they enable us to reach entirely new markets as was possible through working with initiatives such as Research4Life, which provides peer reviewed content to academic institutions in lower- and middle-income countries. Digital developments have also made our content more accessible, with screen readers making it so much easier for visually impaired researchers to access our content.

But there is no doubt the relentless pace of change can sometimes just feel like a tsunami and there are of course some that use technology to undermine good scholarly publishing and act illegally. For example, the digital pirates who have used technology to steal content for their own profits, which not only is theft of intellectual property, but also risks the circulation of outdated, un-curated content. This wave of change and all its implications are hard for publishers to keep up with and especially smaller publishers, including many university presses.

UNIVERSITY PRESSES CAN APPROACH DISRUPTION DIFFERENTLY

Publishers are innovators and most have continually invested to ensure we are serving our customers using the best that technology allows. University presses are no different. We each will have made choices about which innovation or disruption is most important to us and our customers, within the constraints of our own budget, but there are many examples of where university presses can be seen to have taken radical approaches and been part of the disruption, being driven by our mission to step away from the crowd of what everyone else is doing.

- Oxford University Press (OUP) flipped Nucleic Acids Research (NAR) to OA in 2005. This was a bold move as NAR was (and still is) one of the largest journals on the OUP list. They made a decision based on the drive of the editorial team and the needs of the academic community. It would have been a very difficult decision for a commercial publisher to make at that time because of the level of risk associated with the change. But for OUP, driven by their mission, this was the right choice and they were able to demonstrate that a flip of a large journal could be a sustainable success if it is supported by the author community
- In other cases, university presses have collaborated, for example, Johns Hopkins University Press collaborated with the JH Library to launch Project Muse initially hosting JHU Press Journals in 1995 and then hosting journals from other scholarly publishers from 2000. Project Muse now hosts over 800 journals and 100,000 books from 400 publishers in the humanities and social sciences, many of which would not have been able to have an online presence, especially in the early years, without the collaborative approach taken by JHU Press
- Moreover, sometimes university presses have just harnessed technology and innovation to help fulfil their missions, whether that is University of California Press with the launch of Luminos, which they describe as an OA publishing programme for monographs with a transformative model, built as a partnership where costs and benefits are shared. Or Global Social Challenges, from Bristol UP, which is clearly not the only publisher using digital publishing to focus on UN SDGs, but a fantastic example of a UP using digital developments to fulfil its mission. Or how during Covid many of university presses, like other publishers, made relevant content freely available and this helped accelerate critical developments. The same drive to provide wider communities with access to high-quality, evidence-based information also led many of us to make content free around Black Lives Matter. In these latter cases, the disruption may be about what wide access to our high-quality content can do to society as we help to drive and inspire informed debate.

FROM BEING DISRUPTED TO BEING A DISRUPTOR: A CASE STUDY

For Cambridge University Press, until ~5 years ago the OA movement was something happening to us. We did not feel in control and we were behind the curve. We were being disrupted. There were many reasons for this, largely based on our list being strong in humanities and social sciences, whereas the OA movement was being driven largely by STM funders, communities and journals. But the consequence of our passive role in the transition was that we were unable to proactively support our journals and society partners as well as we would have liked through the transition and we could not project what it would mean for us.

It became clear we needed to change the dynamic. It was also clear we were missing the opportunity to further our mission by actively embracing and supporting OA. So we paused, and considered what we could and should be doing in this space and how we could make it work. Subsequently, we have developed OA models that work for us, our journals and partners. This has enabled us to give HSS journals a louder voice on the OA transition and we have a much clearer path forwards.

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Taking this bold approach and moving from being disrupted to being a disruptor has brought tangible progress:

- In 2023, 63% of our journals research content was published OA
- ~2300 institutions are covered by a Cambridge transformative agreement, including 500 in North America
- We have launched journals that really embrace not only OA but interdisciplinarity, for example Cambridge Prisms
- We created the Cambridge Open Equity Initiative to provide funding to ensure that no author has a financial barrier to publishing OA
- In addition, we have created a new model, Research Open, to reflect the needs of journals, especially in humanities and social sciences, that publish a wide range of article types, not just research. We felt it was critical that such journals are sustainable in an OA environment and our proactive approach to OA enabled us to champion the need for such models. We have not limited our drive towards OA and have also innovated with books OA models, including the launch of Flip it Open for our monographs, and the OA options for the Cambridge Elements programme.

But this is just the first phase of the transition and just to reach this point has required huge infrastructure changes. In addition, having successfully navigated this first wave of disruption, we can now more clearly see the next wave coming and consider how best to 'ride' it. Diamond models are often proposed as a solution to this issue, but however good they may become, they cannot work at the scale required to support all research needs.

Many of the challenges we now face were known at the outset, but they are now more clearly defined and we have to address them if we are to ensure that the transition to OA is a sustainable success:

- Our average costs per research article exceed our average revenue per article from Transformative Agreements at present
- We are projecting revenue decreases as many of our current customers do not publish significantly with us
- We must continue to invest heavily in open workflows and infrastructure for the future
- We publish a large number of low output journals and those with high volumes of non-research output
- The shift to OA, combined with other digital developments increases the risk of publisher disintermediation.

This is the nature of digital disruption: once we address one set of changes, we need to work on the next set. This is not a time to give up. In fact, we believe it is vital that university presses embrace OA to help fulfil our missions, helping ensure that we deliver high-quality, sustainable publishing models that support excellence in research. And so, we must disrupt again and this time the level of disruption could be more significant.

The challenges we face are symptoms of wider systemic issues with the academic publishing ecosystem. The shift to OA was never going to solve all of the issues and in some cases, it has exacerbated existing problems. First, the economics just do not add up: Academics globally are encouraged to publish their research results in journal articles and are often rewarded (by funders, their institutions and their scholarly communities) for the venue and quantity of their publishing rather than just the impact of the individual piece of research. This has contributed to a massive growth in research article output. Some blame publishers for this, and whilst publishers can only publish what they receive and have not driven the increase, publishers do monetise this growth in output. It is also clear that some of the output growth has been encouraged/facilitated by publishers who saw an opportunity for new types of publishing to drive profits: Publishing more content does lead to increased costs, but for some it also leads to increased profits and that grates for many in academia. So, on the supply side, there is massive growth leading to increased costs for purchasing journals (in the read model) or for publishing (in the pay to publish world). But library budgets have never kept pace with this output growth and fundamentally when there is more being created but not more money to pay for it, there is a problem. This is especially the case for smaller institutions, and for institutions paying international subscription fees in currencies much stronger than those of their institution's home country. However, in some areas there has been more money flowing into the system, for example in the United States, OSTP analysis estimates that Federal agencies spent c. US$380 m on APC publishing costs in 2021. So for this extra output there is some extra money, but it is not equitable in its availability and there is no guarantee of sustainability. The flow of this money within institutions is inherently complex, leading to double counting and high-output institutions having little ability to know what they are spending in total and whether this equates to value for money.

Some of these rising costs have been managed by cost efficiencies within publishers, libraries shifting budgets (e.g., from monographs to journals) and new business models (the consortia deal and more recently TAs). But this can only go so far without undermining quality, service and access. The economic models will remain broken if we do not change the publishing drivers.

OA does not solve this fundamental imbalance (greater rate of growth of output than budget increase to pay for it) and in fact it has made it worse in many ways as the cost of publishing is centred around the research-intensive institutes that are creating the content rather than sharing those costs across a wider base of all of those who benefit from the research. Preprints and data sharing happens across a number of disciplines, but it usually is followed by journals publishing, duplicating costs not reducing them.

Second, in a world of technological advances that mean in theory content can be distributed by anyone, one of the main values added by journals is the peer review and curation of content. But this is under threat both because it is undervalued in academia, so researchers do not get recognition/time for this vital

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work, and because the very reward and recognition systems that encourage researchers to publish are fostering a tidal wave of papermills and fraudulent papers that are increasingly hard to detect. This is a problem for the integrity of all scholarly publishing and needs a joined-up approach if we are to solve it together. The answer is likely to be a combination of taking away the driver for the abhorrent behaviour combined with a web of detection tools and consequences for those caught.

Third, journals publishing is inherently inequitable. In the past, this inequity meant that despite publishers making online access free for researchers in many LMICs, there were financial barriers to reading content, so those at more affluent institutions had access to more content and resources than those with less funding. With OA, those barriers have been removed but now we have a potential barrier for authors. Again, most publishers are offering waivers for authors, but that does not feel like a good long-term solution. Publishing content from authors with no funds does cost money so the real incentives for publishers to actively attract authors that will need waivers are limited and with the desire for more transparency funding these waivers should not rely on opaque publisher profits (which is why we created Cambridge Open Equity Initiative). We need a global solution to a global challenge.

And finally, journals only publish fairly traditional journal articles—they do vary a bit between subjects, but the overall format is pretty consistent. However, this no longer reflects the full spectrum of research outputs both technologically and culturally, whether that is more data, interim results, protocols, lab notebooks, non-textual content and so on. Journals publishing has evolved in the West and researchers have become accustomed to working with this format. But for researchers in other parts of the world, there could be more appropriate outputs and approaches to share their work and why should success mean that they conform to a Western tradition? If journals remain the sole dominant accepted and respected vehicle for publishing then we will be missing out on so much.

It is also worth noting that many academic and learned societies rely on profits from journals to provide their vital services to members. Most people in academia recognize the central role societies play in academic communities, but not everyone agrees that they should be funded as a byproduct of journal profitability, although no other credible models have gained momentum.

When you add all of this together, this is a crisis in need of disruption and university presses are well placed to support that disruption, although we cannot manage it alone. We are past the point where more iterations and tweaks can solve these fundamental issues. More radical change is required. But that change has to be in tune with real authors and how they work and publish. And it needs to be realistic about what publishing millions of articles a year takes—this is not a cottage industry that can be done by a keen academic or librarian alone in their spare time.

At Cambridge, we seek to hold on to what has made journals publishing such an intrinsic part of research, but seek more radical change across a number of areas.

1. All research output should be OA. OA brings real impact benefits. We are past the tipping point and should just get on with the transition.
2. Existing high-quality journals should of course remain and continue to be funded and developed. Authors value them, they form communities and readers know they can trust them. They should be paid for by institutions based on clear value metrics (not historic spend) and APCs (for those countries and authors without institution 'pay to publish' deals). It is likely that to make this sustainable, the cost burden cannot be carried by the research-intensive institutions alone and there will need to a level of financial support needed from other institutions who benefit from this content.
3. Non-research content matters too. Highly used and valued non-research content will need to be funded in an OA world. There will probably be a variety of models for this.
4. Low-quality journals add costs into the ecosystem and do not offer enough value. Over time, they should disappear. The definition of 'low quality' is subjective and the bar for when journals are valued and when they are not will vary by region and discipline. Authors need to be able to decide when a journal really does add value and is where they want to publish. The pace of change will be dependent on author drivers—until authors are recognized for publishing in formats other than just recognized journals they will keep on following traditional, unaffordable models. Such new models need to include open platforms, which can be run more cost effectively than journals, although these will only work if they provide authors with the value proposition they need. Funders and institutions need to actively recognize the impact of individual outputs irrespective of where it appears. 'Publishers' need to help by providing this information.
5. A far greater focus needs to be placed on research integrity and peer review. Peer review will become more, not less, important for high-quality journals and supported by a growing range of tools to make it easier for the reviewers and more robust. Model evolution and variation will also continue, including open peer review and different models for different content types. But for this to work, the role of reviewers needs recognition within academia. As publishers we will need to continue to work with academia to tackle publication fraud and research integrity issues and good tools in this area are likely to be 'hygiene factors' for both journals and open platforms.
6. Open infrastructure with trusted publishing services has to become a recognized publishing venue for articles that would previously have been published in low-quality journals. The benefits will be speed, transparency and cost efficiency, with funders and institutions having greater control. Models can vary to meet regional needs, rather than valuing the Western approach over others. This will only work though if such services meet authors expectations and needs—telling authors that this is the right model for them will not make it happen.
7. Content will be accessed on a variety of platforms. Publishers cannot be gatekeepers. Over time this may mean that

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publisher platforms become more distribution centres (pushing content out to the platforms readers use most highly) and a trusted home for the version of record.

This is a changing world. We know that academic publishing does not change over a matter of months, but that does not make these changes any less radical.

We believe that as a university press, we are a vital player in making this transition successful. Such radical change is going to need a joined-up approach across stakeholder groups. As the world's oldest academic press, and a trusted part of the academic community, we can help convene such discussions and help us look for shared solutions to shared challenges.

GenAI: THE NEXT BIG DIGITAL DISRUPTION

It is clear to everyone that GenAI will radically change research and education landscapes including the role of us as publishers and the service we can, and need to, provide.

In research publishing, we can see both established publishers and new entrants/start-ups creating AI driven tools across the research workflow, for example, in discovery, summarization, and writing. Similarly in higher education, new AI-based products are being created to support students and lecturers. But it is still very early in the adoption of AI tools and many of us are starting by focusing on how GenAI tools can improve our internal operational efficiency and considering tools to help authors.

For university presses, GenAI can feel like yet another technological development that we need to invest in and play catch-up just to compete let alone stand out. But reflecting on the Cambridge experience with OA, it is clear not every publisher needs to jump in right at the start. Smaller university presses can pick their battles and wait until it is clear what it right for them, and the communities they serve. There will be many opportunities to partner and collaborate in this space. Whether GenAI will prove to be a space where we, as university presses, seize the technology to disrupt, or whether we just, in time, ride the tide of disruption is yet to be seen.

CAN WE LEARN TO EMBRACE DISRUPTION?

Disruption is often a word that brings a feeling of organisational pain, but it is not necessarily a bad thing if we learn to pick our battles. It would be far worse to become irrelevant because the market changes have just passed us by. The needs of our users are changing dramatically; the researchers and learners of tomorrow (and today) were raised using digital content and thinking quite differently. This opens up endless opportunities for us to rethink how we can best fulfil our missions as university presses in today's world.

CONFLICT OF INTEREST STATEMENT

The author declares no conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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