Information Services & Use 42 (2022) 275–283
DOI 10.3233/ISU-220161
IOS Press

The APE lecture: Life in a liminal space; Or, the journey shapes the destination

David Crotty*
Senior Consultant, Clarke & Esposito and Executive Editor, The Scholarly Kitchen, New York, NY, USA
ORCID: https://orcid.org/0000-0002-8610-6740

Abstract. This paper is based on a presentation at the APE 2022 Conference and two blog posts published first on *The Scholarly Kitchen*. It explains how the scholarly community is currently in a liminal space; a place of transition to the end goal of open access (OA), open science, and open research. It argues that the publishing landscape is marked by two waves of consolidation: in the journal's publisher space, and in the scholarly communication infrastructure. With respect to the first wave, Uncertainty, Transformative Agreements, and the required Technology and Reporting Burdens of Plan S led to an increased emphasis on publishing in quantity, smaller society publishers being dissolved, and bigger publishers shifting towards being workflow providers. The second wave of consolidation is happening around the technology and infrastructure of scholarly communication. This has seen a further shift for many companies away from being a publisher and toward being a workflow provider. The short-term outlook is that we are going to be in this liminal space for a while. Longer term we see two concurrent trends: a drive for low-cost, high-volume bulk publishing, and a shift for publishers to become paid service providers for most everything else. This is the path we are on. The question for the community is whether this is an acceptable long-term outcome to our end goal, or are there other routes we should be taking to drive a differently shaped future?

Keywords: Scholarly publishing, open access, society publishers, plan S, transformative agreements, scholarly infrastructure, journals publishing, article processing charges, research workflow, service providers

1. Introduction

The term "liminal space" derives from the Latin word "limen", meaning threshold. A liminal space is between what was and what's next, a place of transition, of waiting and not knowing. Liminal spaces can be physical spaces between two places, such as hallways, stairs, elevators, waiting rooms, streets, airports, or train stations. There are also psychological liminal spaces, such as adolescence, the space between being a child and adulthood. This is where we find ourselves today as a community.

Scholarly communication is in a state of rapid change. We are leaving our traditional, print-based, subscription-based past behind, and moving toward a digital future of openness, transparency, access, and reuse. We know the end point of our journey, and we are on our way, yet the path ahead is still unknown. How we get to the end goal of open access (OA), open science, and open research will determine the end results – are they fair, are they equitable, are they affordable, are they sustainable?

Our journey to date has been marked by a massive wave of consolidation, or rather two separate but concurrent waves of consolidation: one in the journals publisher space, and the other involving our communications infrastructure.

*E-mail: dcrotty@ce-strategy.com.

2. Market consolidation in the publisher space

2021 has been a year of market consolidation. While the big mergers and acquisitions have garnered much attention (e.g., Clarivate completing its deal for Proquest and Wiley's ongoing spending spree), I also wanted to bring to light a different area of rapid market consolidation, namely the demise of the independently publishing research society. 2021 has seen an acceleration of this trend which began in 2018 with the announcement of Plan S.

At the beginning of 2019 I declared that we had entered "The Great Acceleration [1]", meaning that we were embarking on a period of significant, rapid change, and in that blog post I said the following about Plan S:

Plan S is a great example of acceleration – the research world has been moving slowly toward open access, with different fields moving at different paces via different routes. This evolution has taken place at (not surprisingly) an evolutionary pace, and a small group of significant research funders have declared their impatience with this level of progress. Plan S is a deliberate attempt to accelerate change, throwing a comet into a complex ecosystem in hope that it will produce mammals, rather than mass extinction.

The comet has struck, and we are now in a period of what one school of evolutionary biology calls a "punctuated equilibrium [2]", which is the idea that rather than evolution happening gradually and continually, it instead shows long periods of stability and stasis, and then sudden bursts of rapid change.

Evolution, however, is unpredictable, as one would expect for any process that is driven by random change. What we're seeing so far is that rather than a mass extinction or the spurring of all sorts of new species of publishers, Plan S has instead resulted in an environment that has reinforced the dominance of the incumbent market players and created a drive toward increasing scale – in other words, it is evolving bigger dinosaurs.

As an aside, I want to be clear that I'm not referring to larger publishers as dinosaurs to imply that they're obsolete or stodgy and stuck in their ways. If anything, the largest of publishers have achieved that success for a reason – they're very good at what they do, and because publishing is a service industry, that means being able to change to meet the needs of their customers. And open access (OA) has been a great example of that willingness to adapt, as the largest publishers have all embraced OA and extended their already successful businesses around it.

But if the goal was to shake things up and displace the dominant players, then that has not happened, and the net result to date of Plan S has been a massive consolidation of the market. The biggest publishers are growing bigger, and the smaller, independent publishers are largely abandoning their independence and signing on with the biggest houses. I've been in kind of a unique position here as an observer over the last few years – I've been on both sides of the negotiating table for Publishing Service Agreements, first as a publisher looking to bring in new journals, and now as a consultant running the Request for Proposal (RFP) process on behalf of journals looking for a publisher.

I can tell you that since the announcement of Plan S, at my former employer, we saw an enormous spike in the number of formerly independent journals looking for a larger publishing partner, and that now as a consultant, there remains a continuing stream of independent journals who have realized that they can't thrive in the new environment on their own.

I think there are three forces driving all this consolidation: Uncertainty, Transformative Agreements, and the required Technology and Reporting Burdens.

3. Uncertainty

A major transition to a new business model, particularly where there's no answer that's obviously sustainable and equitable, is going to create a lot of market instability. The most developed and predominant model available for open access is having the author pay an article processing charge (APC). This is an imperfect solution that creates as many problems as it solves. We know it doesn't eliminate the inequities in the system, it just moves them from readers to authors. But also, most research societies consider themselves as stewards of their fields – they exist to instill rigor and drive excellence in research. As part of this, they've built highly-selective journals to present the very best research results in their field. Unfortunately, these flagship journals don't really work with an APC model. The more articles you reject, the more expenses you have that have no way of being covered.

For the moment, APCs at their current levels work for a lot of journals because they are heavily subsidized by subscription revenues. But as the subscription revenues begin to wane, the APCs alone are not going to be enough to replace them and still maintain current earnings.

You also have the major problem of the APC model concentrating costs on a small number of authors rather than the subscription model's wide spread of readers covering costs. This means that productive institutions that publish a lot of papers are going to have to spend a lot more to replace the funds that now come in from institutions that read the literature but don't produce a lot of it. And frankly, that money just isn't there – the productive institutions don't have some magical pile of money they can add to their library budgets, and many of the top research institutions I've spoken with are uninterested in greatly increasing their spending.

Add in the pandemic, and things are even more uncertain. For an independent not-for-profit society with limited scale, this is a frightening place in which to be. But if you're part of a much bigger organization, there's more buffer there to weather the short-term storm, and a PSA often offers guaranteed revenues which allow you to ensure your future existence.

4. Transformative agreements

Transformative Agreements [3] (TAs) are probably the number one reason we hear from smaller societies as to why they want to partner up with a bigger publishing house. Just as the Big Deal became the dominant way that journals are sold, making it difficult to get into a library's budget unless you were part of a larger package, so too has the ascendance of the "Bigger Deal", including subscription access and APCs. Most existing journals and their author communities aren't yet ready for a full flip to OA and being part of a TA offers a route to buy a few years' time in order to plan and potentially make that transition. The problem is that TAs generally need to be individually negotiated with each institution and are so complex and time-consuming to put together that librarians only have time to negotiate a small number of them with the largest of publishers. There's simply no way for a society with one or two journals to get a seat at the table. Further, TAs require scale. There's not enough value for a library to sign a TA with a publisher for one journal where a handful of that institution's authors publish occasionally. But a TA for a large number of journals and a large number of institutional authors is worth the negotiating time.

5. Technology and reporting demands

Plan S asks a lot from a journal [4] in order to qualify as compliant. Let's start with the technology requirements, which include the use of persistent identifiers like DOIs, participation in a long-term digital

preservation or archiving program like CLOCKSS or Portico, what's described as "high quality article level metadata" that must be in a standard non-proprietary and interoperable format licensed under CC0 terms, and that metadata must include complete and reliable information on funding of the research, including the name of the funder and their grant number. Further, the article must have machine readable information on its OA status and license embedded in the article in a standard, non-proprietary format. That's a lot to ask for from a small, low-budget journal owned and run on a shoestring by the community, and many would have to invest significantly to meet these demands. A 2019 study showed that the large majority of OA journals listed in the DOAJ were not compliant with Plan S's technology demands [5].

Beyond the technological requirements, the Plan S reporting demands also make it impossible for the small players to be in compliance. First, there's the price transparency details [6], which in my opinion are vague and meaningless enough that I'm not sure they create too much of a burden for most journals. However, if you're a fully-OA journal or a hybrid journal in a transformative agreement, you need to have a detailed description of all of your editorial policies and decision-making processes publicly available on your journal website. You have to have a detailed description of your peer review process posted as well. It is required that at least once a year you publish statistics showing the journal's number of submissions, numbers of reviews requested, numbers of reviews received, the acceptance rate, and the average times between submission and publication. Much of this is data that has largely been seen as proprietary and confidential, so I suspect many are not comfortable sharing it with their competitors.

If you want to take the "transformative journal [7]" approach, things get even more demanding [8]. On top of those previous things, you have to publish an annual report showing downloads, citations and Altmetric scores for all papers published, and you have to present that data sorted by OA papers versus non-OA papers. It remains unclear why Plan S needs this data, nor why they can't source it themselves. If you're a big publisher or you partner with one, this is no big deal – you ask your team of analysts to use your expensive Web of Science and Altmetrics subscriptions to generate automated reports. If you're a small, independent journal, you probably don't have a team of data analysts and probably can't afford Web of Science or Altmetrics access.

So the only option that makes sense for you if you want to continue to exist in this rapidly shifting OA world is to sign on with a big publisher, further reinforcing the fact that scale is the most essential component to OA success.

6. The future

It's not all doom and gloom though. The APC model and many of the other models in use today may turn out to be evolutionary dead ends, and the mammals that we're looking for may still yet emerge. One of the biggest issues for societies in recent years has been lock-in – once you're in a big publisher's Big Deal package, it's really hard to get out because libraries subscribe to the package, not to your journal, which means if you leave, you're basically starting over from scratch. In a fully-OA world, this lock-in may go away, because subscribers will no longer matter.

So eventually, societies may have more mobility and freedom of choice. The big question is, by the time we reach that point, whether the market will have consolidated down so much that there aren't any choices left.

7. Consolidation in the scholarly infrastructure space

The other wave of consolidation is happening around the technology and infrastructure of scholarly communication [9], as the core tools we use to publish and access research results have gone from independently owned status to being part of larger, commercial publishing houses and technology companies. Aries, and their Editorial Manager submission and peer review system, is now owned by Elsevier. Wiley has been on a shopping spree as of late, buying up the Atypon platform, host to over 100,000 publications, along with J&J editorial services and most recently, the eJournal Press submission and peer review system. In a recent interview, Wiley's Jay Flynn noted [10] that more than 50% of the world's peer-reviewed research goes through Wiley-owned platforms.

The last 5–10 years has seen a shift for many companies away from being a publisher and toward being a workflow provider, something Roger Schonfeld has written about extensively in *The Scholarly Kitchen* [11]. The big commercial publishers have increasingly been building big portfolios of services encompassing all aspects of the research workflow. Publication is just one point in the research workflow, and the idea is to offer subscribed services to research institutions for every stage of the research process.

There's been a lot of talk lately about funders getting involved in building community-owned or open source infrastructure, but all evidence so far is that this is not a great fit [12]. Infrastructure is about hard, tedious, and often incremental work. That's not really exciting for most research funders, who seem much more interested in riskier projects that hope to make a bigger splash. Where things do get built, research funders have shown that they're really bad at maintenance and are usually more interested in moving on to the next thing than keeping the last thing they built running. Educopia's 2019 study on failed infrastructure [13] made this clear, and as I wrote at the time [14], any piece of infrastructure needs to be built from the ground-up to be self-sustaining, and that means business knowledge and business planning, which further reinforces our business environment that selects for businesses over other types of organizations.

Roger Schonfeld also wrote about yet another major market consolidation event, Clarivate's acquisition of ProQuest [15]. Clarivate is a really interesting company in our space, because while they're building up the same sort of technology and services portfolio as a company like Elsevier, they are missing one essential component, content – Clarivate owns no journals and publishes no articles. Which raises a question – in an OA world, is publishing the worst part of the publishing business to be in? The answer is both yes and no, depending on how and what you're publishing, so let's look at how that falls out by thinking about the future.

8. Short term outlook

The short-term outlook is that we're going to be in this liminal space for a while. As William Gibson famously said [16], "the future is already here, it's just not evenly distributed". Change is happening, but it's happening at a different pace in different fields and different geographies. As such, the market is going to remain a balancing act between the old and the new for the foreseeable future.

Springer Nature's Steven Inchcoombe offered evidence [17] of the remarkable progress they've made toward OA, but also noted that they hope to reach a level where 50% of their output is OA by 2024. The question is whether the remaining 50% will snowball and quickly go the same way, or if what's been accomplished here is harvesting all the low-hanging fruit, with the other literature more likely to see a longer and more arduous path to an open future?

Lately I've been working with a lot of research societies that are negotiating new publishing partnerships or extending existing partnerships with larger publishing houses, and I've yet to see one where a major existing hybrid journal's revenues aren't still dominated by subscription packages through at least 2027.

That tracks well with other recent projects where I've been speaking with the heads of major library consortia throughout the world, and the regional differences are striking. In Europe and the UK, TAs are being widely locked in as the standard way that libraries purchase services from publishers. Elsewhere in the world, however, the appetite for TAs is much, much lower. Much of this stems from how different the financial structure of universities and research institutions is between the US and the EU. In the EU, where the universities are largely public institutions, there is much more centralization of both research and university funding, and so better flexibility to shift those funds around as needed. In the US, public universities are run at a state level, which means there's no transfer of funds available between The University of Wyoming and The University of Arkansas for example. Even more problematic is that many of the most productive research universities are private institutions. This leads to two different definitions of "cost neutrality", one where OA is mandated and cost neutrality includes both library subscription spending and article processing charge (APC) costs for all papers published from the institution, and one where there are no such mandates, and cost neutrality means current library spending on subscription journals alone.

At the core of the structure of the author-pays APC Gold OA model and TAs is the idea that costs of publication are no longer spread among a large number of readers (via subscriptions) but instead highly concentrated onto a much smaller number of authors. Institutions with low research outputs (which include both liberal arts colleges and community colleges, but also large corporations) can expect to see a cost savings or even become free riders entirely, but any research-intensive institution that produces a lot of publications will ultimately see significant increases in its costs to make up the difference. For many years now, Harvard's library has stated that it cannot afford what it currently pays for journal subscriptions [18]. The idea that Harvard can somehow massively increase its spend several times over to pay for its research output is simply not in the realm of possibility. And at the same time, does anyone think DuPont or Merck should become free riders? While many US institutions are actively looking to drive open access and open science practices, they're doing so under the limitation of activities being at or close to cost neutrality of current library spend, which will not support an output-based model of OA.

Another important factor in our journey so far is that in those negotiations for partnerships between publishers and societies, we're seeing an increased emphasis on publishing in quantity – remember that under the APC and the TA model, you get paid for every article you publish, so more articles means more revenue. This creates another tricky balance. High-quality, selective, flagship journals are essential for selling subscription packages. Libraries want to subscribe to the best journals, or at least the journals their readers see as most important. But flagship journals publish a small number of articles and reject a lot of submissions. They usually have higher overheads and lower outputs than journals with less rigorous acceptance requirements. For the subscription short term, you need these expensive-to-run, low-volume flagship journals, but for the OA long term, they cost too much and publish too little to be highly profitable. We're starting to see a changing attitude from publishers toward these flagship titles, with an emphasis on lowering acceptance standards and publishing more articles over time. Some publishers go as far as requiring quotas for the journals – you must accept X number of articles per year.

9. Long term outlook

Our journey to date suggests two concurrent ways that the long-term future is being shaped: a drive for low-cost, high-volume bulk publishing, and a shift for publishers to become paid service providers for most everything else.

9.1. Publishing in bulk

Earlier in this article, I asked the question of whether publishing was the worst part of the publishing business and my answer was kind of a waffle – to better explain that, what I mean is that some types of publishing are likely to be highly profitable in an OA world, while others are unlikely to be worth the bother.

MDPI offers a possibility for the apex creature in this future ecosystem, the most highly evolved organism to meet the conditions of the environment, providing a model for optimizing for scale and efficiency [19]. Their prolific and constant email marketing campaigns, paired with a special issue strategy aimed at providing a venue for extensive publication by even researchers in the smallest of niches, has seen their publication volume grow five-fold from 2017 to 2020, and their revenues grow almost fourteen-fold from 2015 to 2020. In 2021, they had over 39,000 special issues in the works. 39,000! The bulk of the work at MDPI is done by in-house staff, making efforts highly coordinated and standardized, and far more efficient and less idiosyncratic than at publishers where each journal is run as its own entity and is highly dependent on community resources.

The resulting journals and special issues are a mixed bag in terms of quality, largely depending on the amount of care or ethics the individual editors and authors put in. But this variability doesn't seem to have slowed MDPI's growth nor harmed its earnings. For the last few years, most major publishers have been actively growing their programs, both through publishing agreements with research societies and also through aggressively launching owned journals.

In an OA world, you want to emulate MDPI and have low-overhead, high-volume journals and, as subscription wanes, to rid your program of those pesky, small, high-quality titles with high expenses and low publication volumes. What emerges from our journey is publishers investing heavily in low-rejection, high-volume journals.

9.2. Service providers

The second shaping journey is where all those recent infrastructure acquisitions come into play. Unless we see some sort of massive reform in the academic career and funding system, which seems an area much harder to change than publishing, there will remain a demand in the author market for those high-prestige journals. There just won't be a lot of money to be made from them, perhaps except for a small niche of the very top high-end journals, those like *Nature* and *Cell* that can charge $10K-plus APCs. Any level below that, you'll be dealing with a small number of authors and be unable to charge them enough to support a rigorous, high-rejection program. Unless you're at the very top, then why bother with all that work when you can crank out articles on a much more profitable scale without all the hassle?

This scenario has the most prestigious journals staying in-house where they can remain profitable, but most other prestige journals falling back to independent status, where they will be run with rigor and care by mission-driven research societies rather than profit-driven companies. But remember, all the tools and infrastructure needed to make these journals happen have been bought by the big commercial publishers,

and so rather than working together as partners, the societies now become paying clients to the publishers, purchasing the technologies and services they need to keep their journals running.

You'll need one of the submission and peer review systems owned by one of the big publishers, so why not purchase access to that as part of a package of tools and services like editorial support, production, marketing and all the other things publishers currently do for their partners?

For the publishers, you earn revenue from the expensive process of producing the material without having to cover any of the costs incurred. Then, once the paper is published, it will be CC BY-licensed, and you can still reap all the benefits as if you had published it yourself. You can plug it right into your workflow system and still sell the analytics and all the other pieces you're selling for your own journals. That's where Clarivate starts to make sense, earning all the benefits of publishing without doing any actual publishing. As Todd Carpenter noted in response to this idea [20], the real money being made during the Gold Rush was to be found in selling shovels.

10. The path ahead (or are there other branches?)

This is the path we are on. We live in a business environment, and business organisms have had OA thrust upon them and have adapted accordingly. These are the optimized strategies that have emerged – high-quantity, low-overhead publishing and controlling the means of production for every other type of publishing.

The question for the community as a whole is whether this is an acceptable long-term outcome. It definitely gets us to our end goal of OA, but the journey will have created the resulting shape of that OA. We shouldn't assume that because this is the path we're currently on that we can't choose a different direction or create new branches. Are there other routes we should be investing in more in order to drive a differently-shaped future?

Are there routes that don't require success to be based on scale and output volume? There are lots of experiments going on now that essentially ask libraries to pay for things they can otherwise get for free [21]. While promising, I'm concerned that the frame shift needed, both for the library and the university, going from being a place that brings in money to spend on itself to more the mindset of an investment portfolio manager, sending money out into the world for the benefit of the larger community, may be both fragile and take a significant amount of time, given the priorities of academic institutions and how slowly they move.

If we are indeed stuck in a system where output quantity is key to success, then are there other routes beyond market consolidation available to the community to drive scale? Consider where the research community has had great success with mission-driven or community-owned ventures, like the largest of the university presses, Cambridge and Oxford, where a significant investment is made to enable them to be run as businesses meant to drive surpluses for the university, rather than as self-contained entities that merely need to self-sustain. Think of the organizations already in our community where smaller like-minded groups can come together in collaboration rather than competition, groups like GeoScienceWorld, or BioOne. By examining where these efforts have succeeded, it becomes clear that investment in infrastructure needs to start with a business plan for the long term, with an assumption that funding is going to be limited and driving a financial surplus to ensure long term sustainability is essential.

We know where we want to go. What's the best way to get there?

This paper first appeared on the Scholarly Kitchen:

- Market Consolidation and the Demise of the Independently Publishing Research Society (Dec. 14, 2021): https://scholarlykitchen.sspnet.org/2021/12/14/market-consolidation-and-the-demise-of-the-independently-publishing-research-society/
- Life in a Liminal Space; Or, The journey shapes the Destination (Jan. 13, 2022): https://scholarlykitchen.sspnet.org/2022/01/13/life-in-a-liminal-space-or-the-journey-shapes-the-destination/.

References

[1] https://scholarlykitchen.sspnet.org/2019/01/02/welcome-to-the-great-acceleration/.
[2] https://en.wikipedia.org/wiki/Punctuated_equilibrium.
[3] https://scholarlykitchen.sspnet.org/2019/04/23/transformative-agreements/.
[4] https://www.coalition-s.org/addendum-to-the-coalition-s-guidance-on-the-implementation-of-plan-s/principles-and-implementation/.
[5] https://doi.org/10.3390/publications7020026.
[6] https://www.coalition-s.org/price-and-service-transparency-frameworks/.
[7] https://www.coalition-s.org/addendum-to-the-coalition-s-guidance-on-the-implementation-of-plan-s/.
[8] https://scholarlykitchen.sspnet.org/2021/07/22/more-unexpected-consequences-how-the-plan-s-transformative-journal-route-favors-larger-incumbent-publishers/.
[9] https://scholarlykitchen.sspnet.org/2021/12/21/the-future-state-of-our-scholarly-publishing-vendors/.
[10] https://edscoop.com/wiley-jay-flynn-open-access-research/.
[11] https://scholarlykitchen.sspnet.org/?s=workflow.
[12] https://www.ce-strategy.com/the-brief/going-meta/#1.
[13] https://educopia.org/wp-content/uploads/2019/06/Census2019_EducopiaPublications.pdf.
[14] https://scholarlykitchen.sspnet.org/2019/08/01/building-for-the-long-term-why-business-strategies-are-needed-for-community-owned-infrastructure/.
[15] https://scholarlykitchen.sspnet.org/2021/12/09/new-clarivate-science/.
[16] https://www.goodreads.com/quotes/681-the-future-is-already-here-it-s-just-not-evenly.
[17] https://scholarlykitchen.sspnet.org/2021/12/07/guest-post-what-can-we-learn-from-one-million-open-access-articles/.
[18] https://www.theguardian.com/science/2012/apr/24/harvard-university-journal-publishers-prices.
[19] https://www.ce-strategy.com/the-brief/special-issue/#1.
[20] https://twitter.com/TAC_NISO/status/1480954748614459393.
[21] https://scholarlykitchen.sspnet.org/2019/10/09/roadblocks-to-better-open-access-models/.