

It is not transformation if nothing changes

A Frontiers white paper on the impact of transformative agreements in the transition to open access publishing



Executive summary

The substantial benefits of open access (OA) publishing are within our reach, but legacy publishers are employing commercial tactics to delay the necessary transition.

This paper exposes several of the negative, often unintended, consequences of “transformative agreements” (TAs). It argues that these agreements, sold as a pathway to open science, in fact reinforce the status quo. TAs maintain paywalled access as the standard financial model in publishing. They are negotiated in the absence of basic competition and procurement rules. And by concentrating resources into silos for a few incumbents only, they pose a threat to the diversity of the publishing ecosystem, locking out innovators, including the very players who demonstrate the benefits of OA publishing. Deployed as a commercial tactic, these agreements will stall the establishment of a transparent and competitive marketplace for professional editorial services.

In 2018, an influential group of research funders, recognizing the superior value proposition of OA publishing, came together under the banner of cOAlition S. With their Plan S, they declared they would mandate immediate and universal access to all the articles that resulted from the research they funded. Pressure from legacy subscription publishers subsequently led to concessions that have weakened that founding mission. The most damaging of these concessions was the acceptance of the “hybrid” model. This option granted “transformative” status to paywalled access as long as it was accompanied by the publication of *some* open access content.

This hybrid concession is a loophole that large traditional publishers are exploiting to prolong and validate their current business model and practices. The TA thus represents the offspring of the existing “Big Deal” of bundled services, but now with a costly additional channel for OA publication.

As the COVID pandemic has so powerfully shown, the effective dissemination of validated scientific knowledge is at a critical stage in the research-innovation cycle – and vital if we are to overcome the challenges we face as a society. Plan S intended to “shock” the system into a logical state of affairs with the backing of research funders. However, for as long as the “Big Deal” approach is maintained, legacy publishers will continue to negotiate conditions that guarantee their market share, with consortia paying high prices to a small number of publishers (and offering, in effect, a massive subsidy).

To tackle climate change, technologies such as solar panels, fuel cells and electric vehicles have benefited from a policy of subsidies, pushing society away from the dangerous status quo of fossil fuel consumption. By contrast, and analogy, we see that TAs are incentivizing pernicious behavior, supporting the paywalled status quo, hindering positive change and suppressing the innovative models that offer true fully open solutions.

If initiatives such as Plan S are to make full OA a reality, then funders, institutions and libraries must tackle monopoly legacy models which hinder innovation.

We believe the signatories of Plan S, institutions and libraries should:

- Ensure their funding allocations meet the needs and requirements of authors and the academic community.
- Negotiate conditions such that all published research is truly, immediately and fully open according to a binding timeline; with a minimum schedule in which at least 75% of content is OA across a publisher's full portfolio by the end of 2024.
- Insist on agreements that are transparent and visible to all stakeholders, with a clear attribution of costs to products and services, allowing a credible assessment of value and unbundling.
- Establish a truly fair competitive landscape by applying the principles of common commercial conditions and basic rules of public procurement.

Fully OA publishers already offer quality and innovation at scale, with better value for money and greater impact than legacy publishers. They are driving efforts to meet the political and societal need for truly open science. At Frontiers, we stand ready to work with all stakeholders to meet this call to action, to share our knowledge and data in doing so, and to see Plan S delivered.



Dr. Frederick Fenter
Chief Executive Editor,
Frontiers

Why open access? The superior value proposition of “pure” open access publishing

Open access offers greater impact to published research

Many studies have shown that articles published via OA channels receive better readership and more citations than articles published in journals requiring payment for access.¹ In fact, among the world’s 25 largest scientific publishers, the third most-cited is the OA publisher Frontiers. Frontiers receives on average 4.8 citations per paper within an initial 3-year citation window, above Wiley, Springer Nature, and Elsevier (Figure 1).

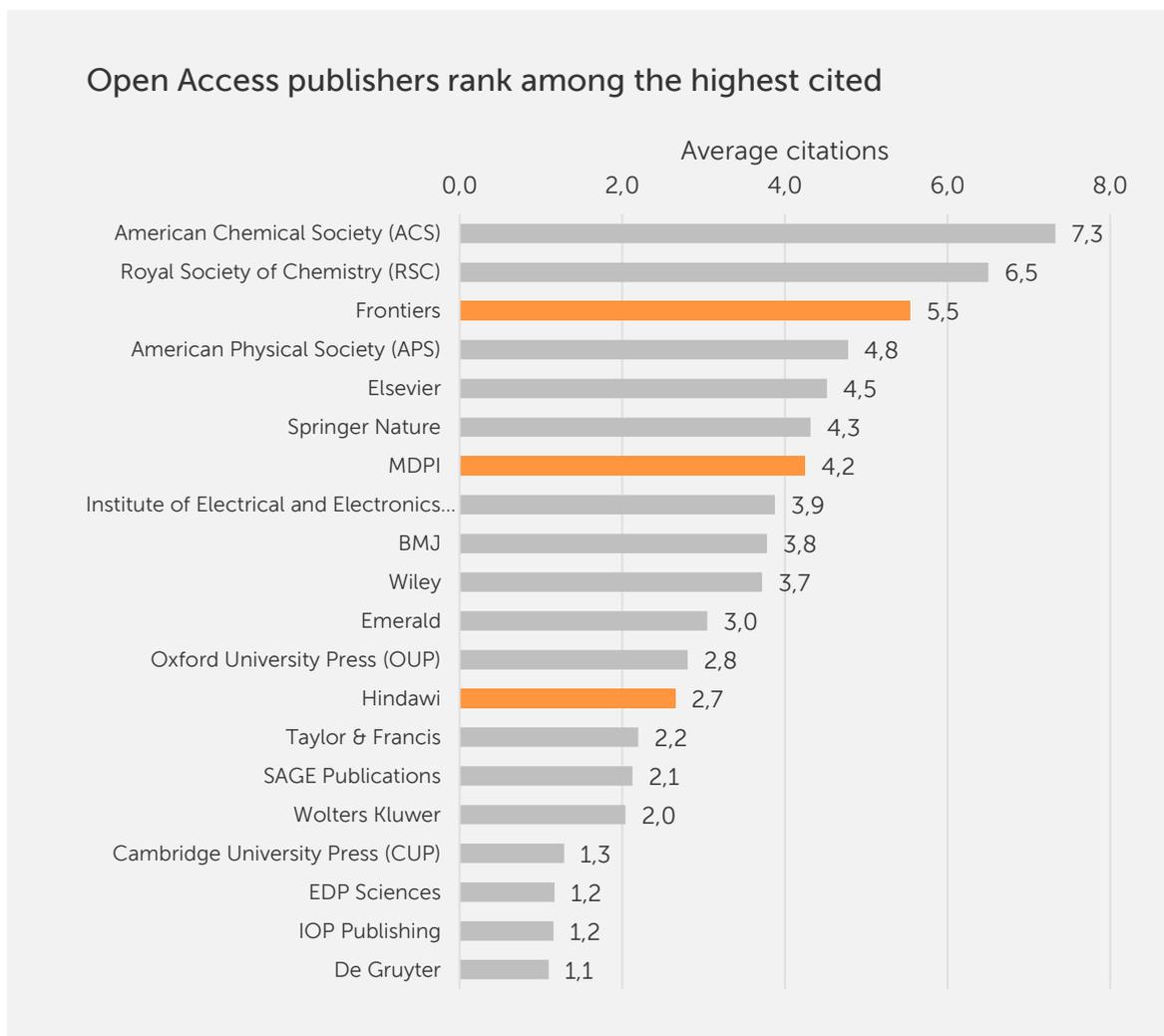


Figure 1

World’s 20 largest publishers by volume, ranked by average number of citations in 2020 received by articles published in 2017, 2018 and 2019 (Dimensions, 2021). Fully OA publishers highlighted. Frontiers ranked 3rd most-cited with an average of 4.8 citations per article. Note: Hindawi, a fully OA publisher, was acquired by mixed-model publisher John Wiley & Sons (Wiley) in 2021.

¹ See: [Wang, X., Liu, C., Mao, W. et al. \(2015\)](#); [Langham-Putrow, A., Bakker, C., Riegelman, A. et al. \(2021\)](#); [Piwowar H, Priem J, Larivière V. et al. \(2018\)](#); [Mikki, S.\(2017\)](#).

Open access publishing costs less than subscription publishing

OA publishers most often bill for their services per article, with a fee called the Article Publishing Charge (APC). The cost of publishing varies enormously from publisher to publisher, but on a per article basis, OA publishing is on average significantly less costly to funders – and therefore the taxpayer – than the subscription model. And it is much less expensive than the “hybrid” option, in which an article is made freely available in a subscription-based journal (Figure 2).

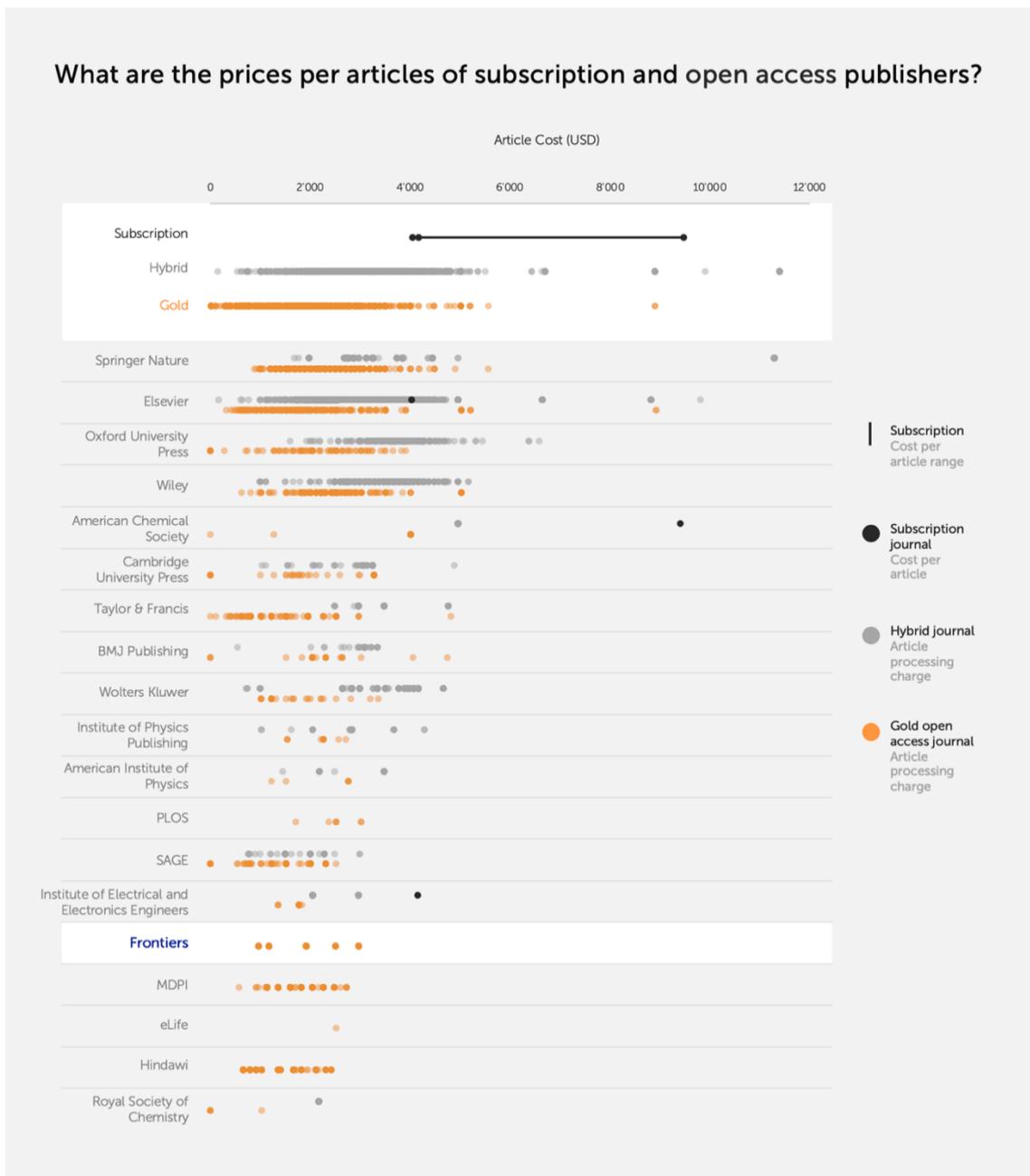


Figure 2 Price comparison for subscription and OA publishers showing the fees charged for access to subscription articles (in black) versus fees charged for publishing services by hybrid (in grey) and open-access journals (in orange). Data: APCs as provided on publishers’ websites, accessed in 2021.

The highest APCs for hybrid journals have risen steadily in the last few years, reaching as much as US\$ 11,400 in 2021.² Hybrid APCs have also increased at a faster rate than those of Gold OA publishers. In March 2022, Delta Think reported an average increase of 2.6% for hybrid APCs across the market over recent years, compared to an average of 1.3% for fully OA APCs.³

OA journals published by legacy publishers also charge higher APCs than fully OA, “new-world” publishers like Frontiers. The highest such APC is recorded at just under US\$ 9,000 in 2022 (‘Patterns,’ published by Elsevier). The typical upper band of APCs in Gold OA journals in 2022 is around US\$ 5,300. It is worth noting that Frontiers’ average APC in 2022 stands at US\$ 2,300.

The COVID-19 emergency demonstrated the power of science made immediately open

Our collective response to the COVID-19 pandemic clearly demonstrated the power of making science open to deliver solutions fast. As the recent report from the Wellcome Trust concluded, the open sharing of data, information and published research was a key success factor in the global pandemic response, “alongside efforts to collaborate internationally and the availability of advanced research infrastructures.”⁴ The sharing of the coronavirus genetic code in January 2020 immediately accelerated the development of treatments and a vaccine. Thereafter, in March 2020, the Allen Institute for AI, in collaboration with the White House Office of Science and Technology, and alongside other public and private organizations, launched the COVID-19 database to collect all coronavirus-related research articles and make them immediately and openly accessible to researchers. This drove effective collaboration between researchers across institutional and geographic boundaries, further accelerating the global response and generating a pace that saved millions of lives. The lessons are clear. But the imperative for Open Science remains given other diseases and the biggest challenge of our generation – climate change. The Open Science approach that worked so well for COVID has enormous potential to help us reverse the existential damage of climate change.

For incentives to work, avoid “compliance washing”

In 2018, the context for the launch of Plan S was clear. In full knowledge of the benefits of OA, signatories of the plan – the public funders of research – moved to mandate OA for all the beneficiaries of their grants. Their support for OA remains steadfast. But often, when business or policy leaders hear about the positive potential of OA across the publishing industry, they struggle to understand why market forces alone have not driven the system forward. Let’s look at an analogy with the electronic car industry.

Over the past ten years, electric cars and vans have benefitted from a huge range of highly effective support measures. To cite just one example, in the last few years the European Union has imposed heavy penalties on car makers that exceed their CO₂ emission targets.⁵ The result has been a major expansion of electric-car development, sales, and use.⁶ Between 2019 to 2020, the uptake of electric cars in Europe increased from 550,000 (3.5% of all registrations) to 1,325,000 (11% of all registrations).⁷ This is what can be achieved when governments have clear objectives and work rationally to achieve them. It is not what we are seeing in the world of scientific publishing.

In scientific publishing, TAs, rather than incentivizing a definitive flip to OA, are enabling legacy publishers to maintain the status quo of a paywall-protected business model, the only condition being they offer hybrid publishing channels. To compound this effect, there is a circulating meme purporting that the APCs of “born digital” OA publishers should be much lower than those of subscription publishers, and, further, be price capped. With such an approach to electric cars, governments would have paid the makers of fossil-fuel cars to produce more of them in return for a “transformative” offering of old models refitted with electric engines. They might also have

² See: [Delta Think News & Views March 2021](#).

³ See: [Delta Think News & Views March 2022](#).

⁴ [Investigating the effects of open sharing commitments. Wellcome. 15 June 2022.](#)

⁵ [European Commission: CO₂ emission performance standards for cars and vans](#)

⁶ [International Energy Agency: Policies to promote electric vehicle deployment](#)

⁷ [European Environment Agency: New registrations of electric vehicles in Europe](#)

tried to set a maximum price for electric cars on new producers, preventing newcomers from disrupting the automotive industry.

This is what is happening in the world of scientific publishing. Universities and country-wide consortia are signing "Big Deal" TAs with legacy publishers to grant their researchers access to journal content and enable work to be published as OA in some, but not all, the journals covered by the agreement, in a nod to transformation. Notional deadlines for journals' complete move to OA are further pushed out and remain non-binding. As a result, the budgets of many universities remain tied up in the legacy subscription model, with little or no space to explore agreements with fully OA publishers. To compound this, OA publishers are often held to different standards by funders, with, for example, APC price caps far below the average price for hybrid journals. The effective subsidy of the legacy subscription model continues to place an artificial barrier to entry on those publishers who are innovating and seeking to drive a full transition to OA, to the benefit of science and broader society.

Since the birth of the Internet 30 years ago, subscription publishers have understood that the the open dissemination of scientific knowledge is an unstoppable trend. Indeed, the Internet was invented by scientists to share their research more effectively. While those scientists were fast to adopt the new technology and move their content online, they have kept the old subscription business model in place. They have also invested tens of millions of dollars in technology on their platforms to block access and sustain the rents they collect on publicly funded research. TAs are extending the lifespan of this damaging and outdated approach.

Although cOAlition S has worked hard to impose a timeframe on the transition to full OA publishing, it is looking increasingly likely that the privileges created by TAs will become open-ended and further entrench the status quo. Just as we need policies and incentives for non-polluting electric cars, so we need them for OA scientific publishing. We can't afford to sit by watching the quiet expansion of paywalled content behind the façade of "hybrid" publishing. TAs are being carefully drafted to satisfy the formal requirements of Plan S, while blocking the positive industry disruption Plan S intended to unleash. What better example could there be of "compliance washing"?

In the months after the announcement of its principles, Coalition S heard evidence from a wide range of stakeholders, many of whom insisted that a rapid "flip" to full OA would threaten the stability of the entire scientific publishing ecosystem.⁸ The defenders of the status quo were able to obtain a concession. It was decided that a sincere transition from subscription to OA would be allowed within the Plan S framework via a "hybrid" path, on the basis the transition to full OA be completed by signatories by 31 December 2024 at the latest.⁹ We discuss below the repercussions of this concession, which has lent legitimacy to an exploitative commercial tactic.

⁸ See: [Brainard, J. Science \(2019\)](#) .

⁹ See: [Guidance on the Implementation of Plan S](#) .

A short history of “hybrid”

For the last two decades, traditional scientific publishers have licensed their content to academic institutions and libraries in the form of large subscription agreements. These are often referred to as “Big Deals”. They bundle many titles and services, which in turn are locked behind a paywall.¹⁰

Many years before the emergence of Plan S, some large funders, such as the Wellcome Trust, created “OA Mandates”. By the terms of such mandates, grantees had to ensure their work was universally available immediately upon publication.¹¹ In response, rather than unreservedly shifting their paywalled journals to a full OA platform, subscription publishers created a new “hybrid” business model in which authors publishing in subscription journals could make their articles freely accessible in return for a substantial additional fee. This is problematic for many reasons,¹² perhaps above all because the hybrid model allows subscription publishers to ‘double dip,’ establishing a brand new revenue stream without reducing the cost of their subscriptions. The fees the publishers impose for this service are often a large multiple of the APCs billed by full OA publishers (see Figure 2 above).

The cost of these publishing services to the funders of research (and therefore, indirectly, to society), have grown significantly, without any concomitant progress towards open science. It is an approach rightfully viewed by researchers and institutions as amounting to abusive commercial practice.¹³ Plan S sought a way to bring back the original spirit of OA Mandates.

The powerful simplicity of Plan S

On 9 September 2018, a group of research funding organizations formed “cOAlition S” and announced an ambitious initiative – Plan S – to ensure that all publicly funded scientific research be immediately available to everyone to read, free of charge: so-called “Full OA.”¹⁴ In the year that followed there was widespread hope that the long-awaited transition to OA would materialize. Around the globe, scholarly publishers scrambled to understand the consequences and to adapt. Many felt that Plan S was a game-changer.¹⁵

Plan S was based on a powerful and simple premise, namely that from January 1, 2021, the only permissible publication format for research funded by the participating organizations would be full OA from the day of publication, with intellectual property rights retained by authors or their institution (Figure 3).

¹⁰ See: [Cooper, D., and Rieger, O.Y. \(2021\)](#)

¹¹ See: [Icome is going to review its Open Access Policy \(5 March 2018\)](#)

¹² See: [cOAlition S: Why hybrid journals do not lead to full and immediate Open Access \(2021\)](#)

¹³ See: [Pinfield, S., Salter, J. and Bath, P.A. \(2016\)](#)

¹⁴ See: [Schiltz, M. \(2018\)](#)

¹⁵ See: [Else, H. \(2018\): Radical open-access plan could spell end to journal subscriptions. <https://www.nature.com/articles/d41586-021-00883-6>](#)

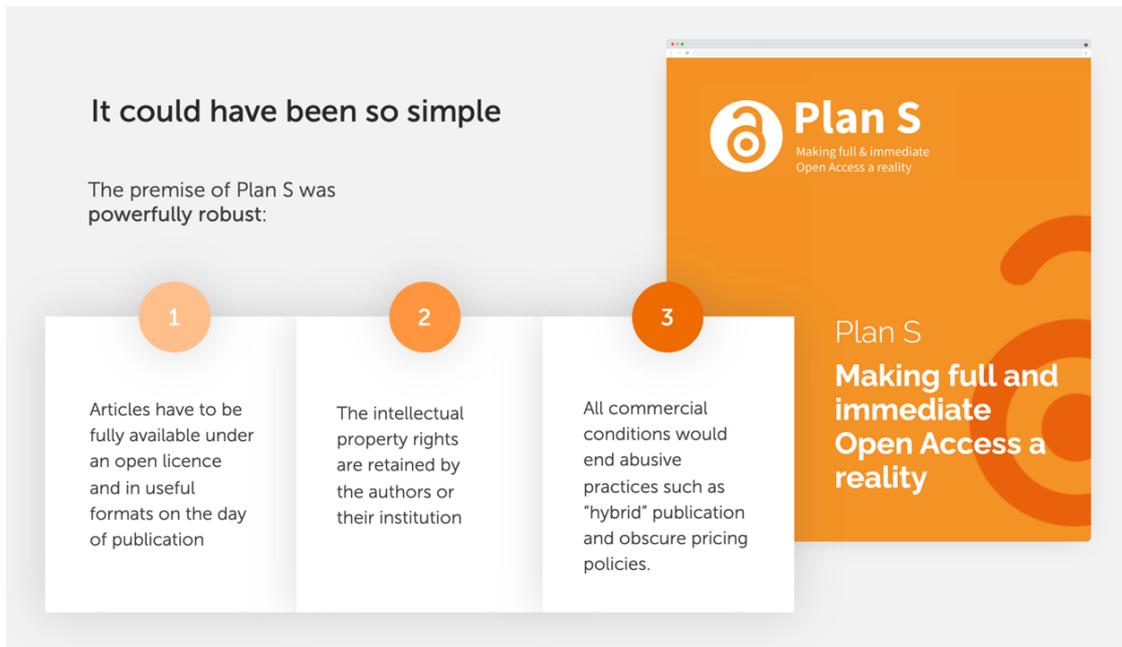


Figure 3
The key principles of Plan S when it was announced in 2018.

The launch of Plan S was possible largely because of the growing number of pure OA publishers who were demonstrating that OA publishing could work successfully at scale. Indeed, funders could see that these innovative publishers offered validation, publication, and wide dissemination of the research they supported. They could see the benefits of high-quality services as well as the immediate and OA that drives the research-innovation cycle. These full OA publishers were proving the thesis that the paywall in the 21st century had lost its purpose, and that quality standards, robust procedures, and lower costs could all be achieved with OA business models. There was no reason for any publisher to prolong the harmful status quo of subscription publishing.

Today we are past the half-way mark in the Plan S timeline to achieve its full OA mission. It is the moment to take stock of what has been achieved since launch and to ask some questions about the research community's response.

Reality-check: opening the "hybrid loophole"

In 2018, Plan S partners committed to the principle that publication in hybrid journals would not be supported.¹⁶ Not unexpectedly, many subscription publishers argued that adopting a hybrid publishing model was a legitimate way to "flip" to OA within the stated timeframe of Plan S, and indeed the only way to do so without threatening their survival as a business.

As a result, Plan S partners modified their initially strong stance against hybrid models by offering a temporary route to compliance through TAs.¹⁷ TAs would commit publishers to transforming their business model to full OA within the timeframe of Plan S (i.e., by the end of 2024). Researchers

¹⁶ See: [Else, H. \(2018\): Radical open-access plan could spell end to journal subscriptions.https://www.nature.com/articles/d41586-021-00883-6](https://www.nature.com/articles/d41586-021-00883-6)

¹⁷ See: [Rationale for the Revisions Made to the Plan S Principles and Implementation Guidance \(2019\).](#)

funded by Plan S members would now be allowed to publish in hybrid journals if they were covered by a TA.¹⁸

This created a “hybrid loophole” that allows subscription publishers to comply with Plan S and other OA mandates without having to transform their commercial business model, at least in the medium-term. Having a TA in place with some institutions does not prohibit a publisher from continuing to generate revenue by selling subscriptions to any other institutions where no such agreement exists. In this way, paywalls live on.

Of course, any path that leads to Open Science and functional marketplaces for editorial and publishing services is to be warmly welcomed. A few smaller publishers and societies are transitioning to OA in line with the Plan S timeline, and some genuinely need to maintain their current business models beyond the Plan S deadline. Nonetheless, many large, subscription-model publishers are exploiting this “hybrid loophole” to maintain the status quo as far as possible into the future.

Big Deal + Hybrid = transformative agreements

TAs are typically framed as “Read and Publish” deals and are promoted as having mutual benefits for the subscriber and the publisher, namely:

- The subscriber (an institution or consortium of institutions) maintains a continuity in services and access to content at a total negotiated cost that tends to increase at a predictable rate.
- Institutions can encourage their authors to publish in OA hybrid journals “for free”, on the basis those journals are covered by the agreement (although it often excludes premium titles).
- The publisher feels justified in placing a premium on access to archived content (the “Read” part of the agreement), in order to cover its operating costs in the agreement.
- The publisher receives a steady flow of revenue that (supposedly) allows it to transform its operations towards full OA.

It has been argued that TAs are important for smaller Society Publishers who rely on subscription income to cover their operating expenses, and who clearly need a steady transition period to full OA.¹⁹ Nonetheless, most TAs have been established by large subscription publishers. By early 2022, about 380 TAs – accounting for over 189,000 annual publications – had been registered on the ESAC database.²⁰ The four largest subscription publishers – Elsevier, Springer Nature, Wiley and Taylor & Francis Group – have TAs covering three quarters of those publications. Only about 10% of the publications (18,237) come under deals with Society Publishers (Figure 4).

¹⁸ See: [Plan S: Principles and Implementation](#).

¹⁹ See: [Wise, Alicia; Estelle, Lorraine \(2019\) SPA OPS Final Project Report](#).

²⁰ [ESAC Transformative Agreements registry](#)

Share of annual publications covered by transformative agreements (ESAC registry)

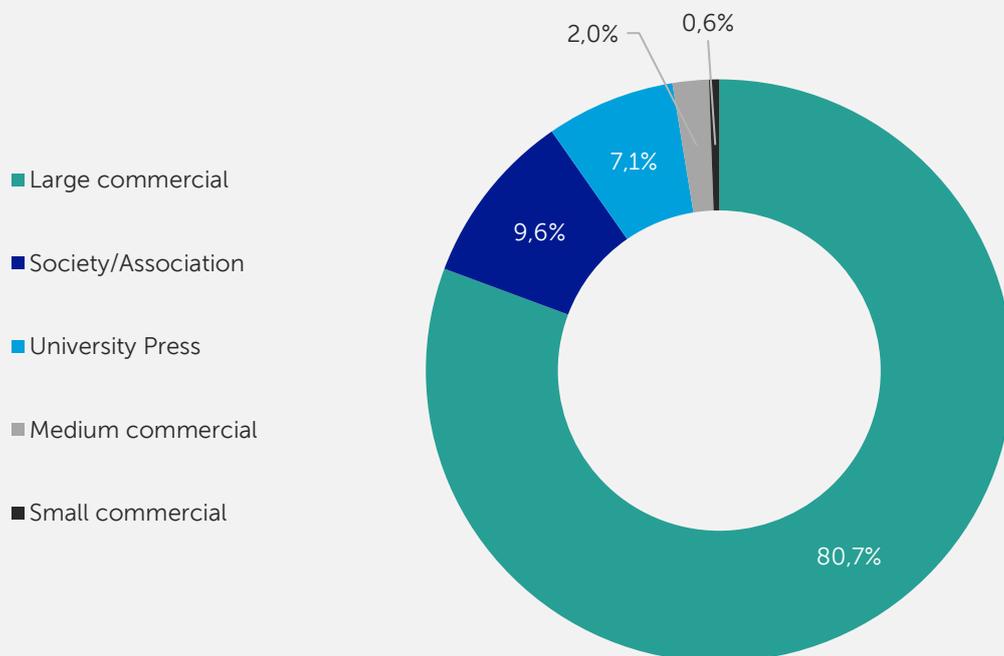


Figure 4

Share of annual publications covered by TAs registered on ESAC, by publisher type.

Indeed, encouraging hybrid publication has become the latest feature of the “Big Deals” that are locking institutions into complex, long-term agreements for “bundles” of services.²¹ In this sense, TAs are the latest in a long series of commercial and technical strategies deployed by subscription publishers to lock clients in, hide real costs, and preserve the status quo.

Let’s take a closer look at one prominent TA, namely that between Projekt DEAL in Germany and the publisher Wiley. The agreement specifies a fee of EUR 2,750 for publishing an article in one of Wiley’s hybrid journals, and a discounted fee of EUR 2,200 for publication in one of Wiley’s fully OA journals.²² In 2020, the first full year of the agreement between Projekt DEAL and Wiley, 10,039 hybrid articles and 881 fully OA articles were published under these terms.²³ The fee total for 2020 comes to EUR 27’607’250 in hybrid charges and EUR 1’938’200 in full OA charges. According to the terms of the deal, an additional “interim read fee” of EUR 12,5 million for 3 years, or EUR 4’170’666 per annum, was applied (in addition to a one-off “consolidated access fee” of EUR 2’000’000 over three years or EUR 666’666 per annum). Not counting for the administration costs by MPDL GmbH Services on behalf of the participating institutions (estimated at around EUR 600,000 for 2020), the total cost in 2020 of the Wiley agreement to Projekt DEAL amounts to EUR 34’382’782 or EUR 3’248 per published article. At the exchange rate of late 2020, this equals US\$ 3,778 per article, high above the APCs reported by the OA publishers listed in Figure 2 above.

²¹ Richard Poynder (2018): [The Open Access Big Deal: Back to the Future](#)

²² See: [Publish and Access Agreement – Projekt DEAL and Wiley \(2019\)](#)

²³ See: [MPDL gGmbH: 2020 Annual Review: the year in numbers](#)

Ten reasons why transformative agreements are NOT leading to transformation

Today the research world is waking up to the fact that these deals fundamentally undermine the spirit of Plan S and its vision for OA publishing (summarized in Figure 6 below), for the following reasons:

1. Many “Read and Publish” deals only pay lip service to the idea of transformation and make **no contractual (or even aspirational) commitment** to comply with Plan S.
2. In terms of cost, the status quo is preserved. In many cases, **total costs are likely to exceed consortia’s projected budgets**. Moreover, it is very striking that publishers ask for annual rents on papers that are decades old, arguing they need to pay for publisher “platform services” whose main function is, in fact, to limit access and secure revenue streams for as long as possible.
3. There are justified concerns alongside empirical evidence²⁴ that **TAs have increased the large, legacy publishers’ market share** from an already dominant position. This is a poor competitive environment that raises barriers to entry for newcomers and hinders innovation in business models and services.
4. “Big deals”, including those presented as TAs, rapidly **consume institutions’ publishing budgets**, often leaving nothing to support researchers who wish to seek out other publishers, including pure OA platforms.
5. The dominant market position of legacy publishers is **curtailing author choice, raising prices, and distorting competition** by creating high barriers to entry and blocking pure OA publishers who do not require transformation.
6. Legacy publishers’ TAs themselves are **anything but transparent**. Many are never published; some are heavily redacted before publication; actual costs per article are not clearly stated; and in many cases, signatories are bound by Non-Disclosure Agreements.²⁵
7. TAs are enabling mixed-model publishers to **prioritize the growth of more profitable hybrid journals** at the expense of fully OA journals. Indeed, these publishers push authors towards hybrid journals. In many agreements, publishing in hybrid titles is free at the point of use, while authors have to pay additional APCs to publish in the publishers’ own Gold OA journals.
8. The misleading meme that TAs enable authors to publish in OA channels for free puts **huge pressure on smaller Society Publishers**, who in turn often find themselves having to fold their journals into new TAs, further weakening the publishing ecosystem and driving unhealthy market concentration.
9. Any publishing services purportedly offered by these deals are not free. And the **price for publishing an article on hybrid platforms is higher than the price proposed by pure OA publishers** – a fact effectively obfuscated by the complexity of TAs. Furthermore, these TAs never take account of the cost of the large teams of institutional professionals required for their administration.
10. Finally, the complex bundle of services that make up a typical TA not only makes it impossible to assess the value of the individual publishing services, but also provides a smokescreen for the fact that **not much is being transformed** by the largest publishers (Figure 5).

²⁴ See: [Haucap, Justus; Moshgbar, Nima; Schmal, Benedikt \(2021\): The impact of the German 'DEAL' on competition in the academic publishing market.](#)

²⁵ See: [Poynder, R. \(2018\): The Open Access Big Deal: Back to the Future.](#)

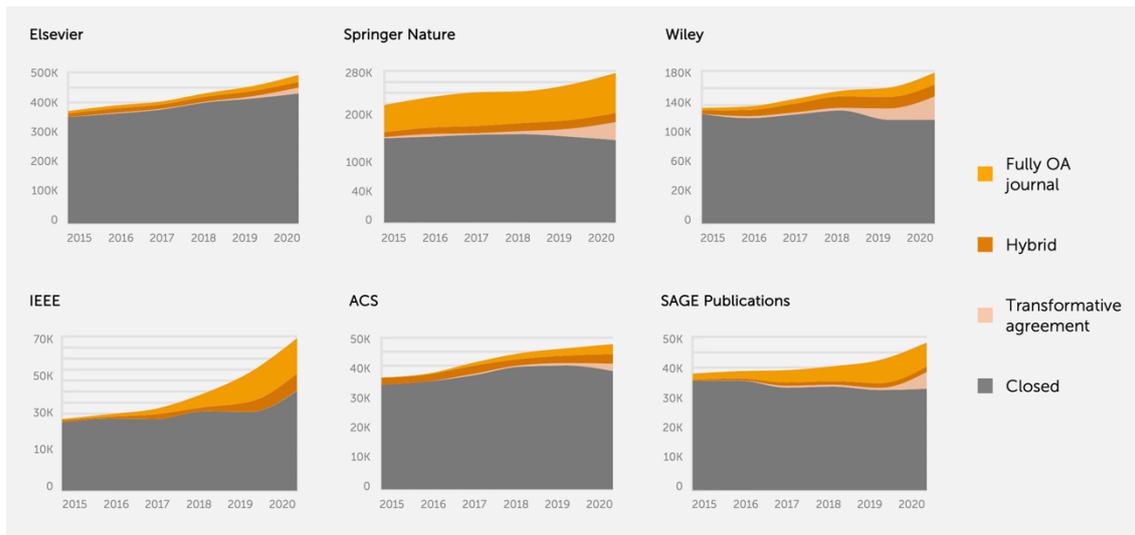


Figure 5

Comparison of change in closed content over a 5-yr timeframe (2015 – 2020) of 6 large subscription publishers engaged in TAs. Note how the closed subscription content (in grey) is not (significantly and decisively) diminishing as would be expected during a “transformation”. In fact, for some publishers, subscription content even continues to increase. Under these conditions only a miracle, (and certainly not TAs), would achieve full OA by 2024. Data and graphic: [ESAC Market Watch](#).

In Figure 5, we see the ESAC data for six subscription publishers. The data clearly show the very slow uptake of full OA by these publishers. The slow pace is being masked by the cost and complexity of TAs, leading early supporters of Plan S to question the sincerity and commitment of large legacy publishers to that initiative.

Ironically, the very publishers who first demonstrated that OA publishing can work at scale – namely pure OA publishers who operate on the principles of transparency in value and service proposition – are facing real disadvantages as a result of new barriers to competition created by the TA.

Distortion of public procurement

Public procurement rules require that better offers in terms of quality, innovation and value for money be prioritized in large deals involving public money. They are not applied to TAs. Research teams and universities must follow public procurement rules strictly for expenses above a certain amount, for example for lab equipment. Arguably, the same should apply to the much larger expenses incurred by subscription deals and TAs. But journals are considered “non-substitutable goods” in EU competition law, so these deals escape competition regulation.²⁶

Consider two journals, one a subscription journal under a TA, the other fully OA. Assume that they both enjoy broad support from their community of authors, are both operated by recognized international experts in their field, and both provide rigorous peer review and high-quality production standards. Both provide perpetual reading rights and access to the full archive. On what legitimate grounds can a representative of a public institution hold closed negotiations to determine payments for services provided by one and deny the same conditions or even – as often happens – insist on less favorable conditions for the other? What has happened to the normal rules for public procurement?

In the spirit of Plan S, it was expected that funders should pay for professional publishing services if the publisher provided a complete and professional package of services, approved by an independent board (e.g., the DOAJ). When a consortium or institution, using public funds, agrees to a price for a well-defined package of services, it should be obliged to offer the same commercial conditions to any publisher willing to provide the same or better-quality services at the same price. This would open the way to authors who could then decide which journal best fits their needs and the needs of their community. It is unacceptable that deals that are not 100% OA

²⁶ See: [Brembs, Björn \(2022\): EU: Academic Publishers are Monopolists.](#)

are still being negotiated behind closed doors, providing favored-company status to a small number of large legacy publishers. This kind of favoritism stifles innovation and weakens the rest of the market, particularly of small to medium-sized Society Publishers. If the resources that large legacy publishers now absorb were to be allocated fairly and transparently in meeting the needs of buyers, the transition to OA and to a fully competitive and innovative publishing ecosystem would be much more rapid. Alongside the heavy payments for "Read" privileges, the hybrid loophole offers unreasonable protection and support to large subscription publishers, without creating any pressure for them to abandon their old subscription business.

In other words, we remain in a knowledge ecosystem in which some content becomes available, but in which a critical mass of content does not, so that the subscription model status quo is nurtured to the detriment of all society. Figure 6 sets out our view of the stark contrast between TAs and fully OA publishing.

Reality check	
Transformative Agreements	Full Open Access Publishing
No binding commitments to transform within a reasonable timeline	vs. Already fully open – no transformation required
Complex, "hyper-bundled" agreements with built-in price increases that are impossible to evaluate for value	vs. Fully transparent prices and simple agreements
Increased market concentration and reduced competition	vs. Encouraged competition through transparency and diversity in the market
Disadvantage innovative OA publishers	vs. Promotes innovation in scholarly publishing
Limit author choice	vs. Nurture author choice and biblio-diversity
Encourage 'hybrid'	vs. End abusive 'hybrid' commercial tactics
Often exclude premium titles and archives	vs. Include all titles and archives
Perpetuate harmful paywalls and the subscription model	vs. Real progress towards open science

Figure 6
The contrast between TAs and full Open access publishing as envisioned by Plan S.

Open Better

A better way to OA publishing is available, one that sticks to the original Plan S principles and does not rely on opaque promises of transformation. Pure OA publishers have shown that OA publishing can succeed at scale. They are fully aligned with the simple, powerful principles of Plan S, namely that:

- The articles they publish are fully open on the day of publication in a variety of useful formats, ready for use and reuse in the knowledge economy.
- They are leaders in publishing innovation, building new tools and channels for the dissemination of knowledge – highways for data, not barns for cash cows.
- They provide a range of publishing options, allowing authors a wide choice of publication venues.
- Their costs and conditions are fully transparent.

The benefits of full OA publishing could have a much wider impact if fully OA agreements (sometimes called Pure Publish Agreements), with pure OA publishers, enjoyed the same focus and priority given to TAs.

For this to happen, institutions should allow their budgets to be used for agreements with publishers that provide quality services, a fully OA portfolio and transparent pricing. If transformation and innovation are the goals, then choices about agreements with publishers should not be dictated by historical path-dependencies and legacy models, which lock in the budget for information services to pay for a few “big deals” (Figure 6).

One of the most powerful propositions in the recent OA debate is that “there is enough money in the system” to fund the transition to OA.²⁷ That funding will only be unlocked if there is broad willingness from buyers and policymakers to look beyond legacy models that have been responsible for a decades-long cost explosion in scholarly publishing. Figure 7 summarizes the disconnect in resource allocations.

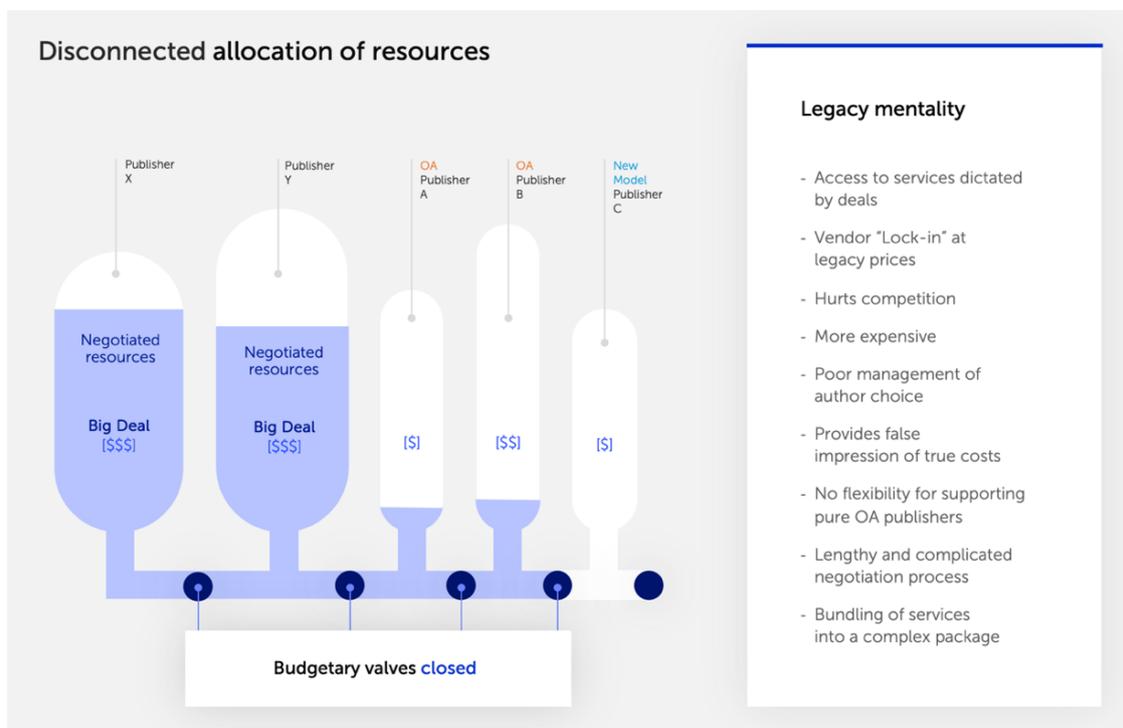


Figure 7 Illustration of current resource allocation for scholarly publishing services tied down by large deals with a few legacy publishers and unable to flow freely to meet author choice.

A change in ground rules to allocate resources that meet the needs and requirements of the academic community would bring multiple benefits (Figure 8). And it would strengthen the

²⁷ See: [Schimmer, Geschuhn and Vogler \(2015\): Disrupting the subscription journals' business model for the necessary large-scale transformation to Open Access.](#)

principle of author choice, boosting the ability of authors to optimize publication for their careers, the careers of their colleagues and the reputation of their institutions.

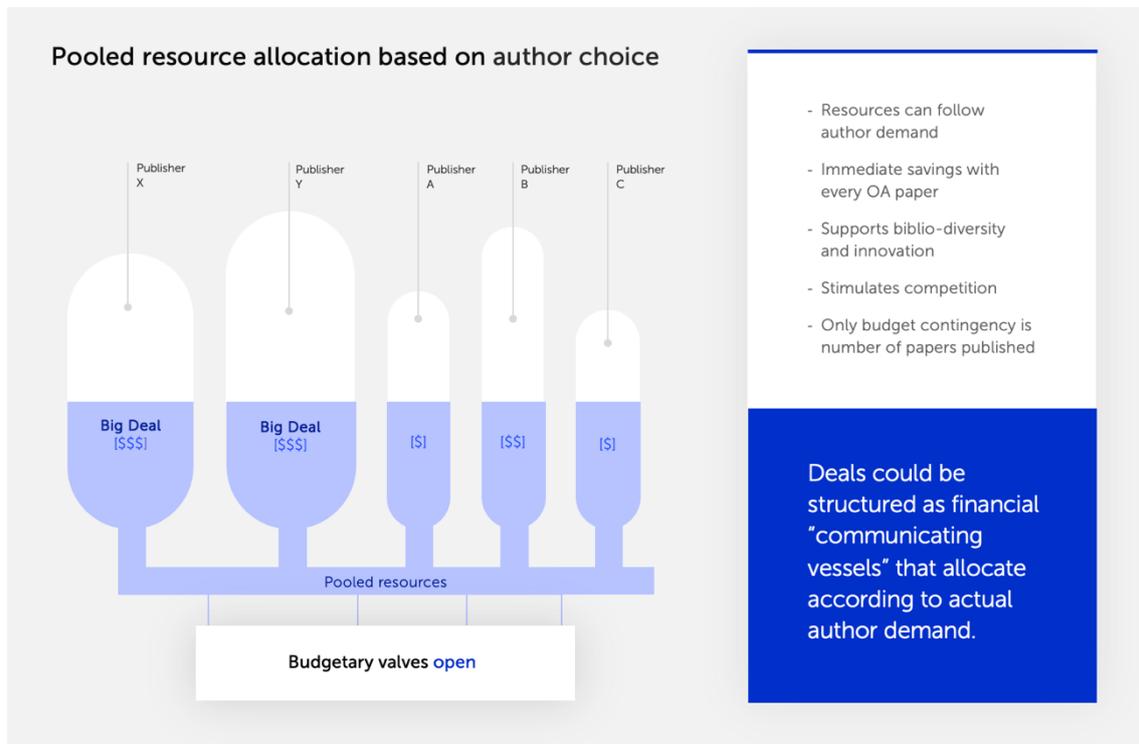


Figure 8

Illustration of deals structured as communicating vessels allowing resources to be used to meet author choice.

In some countries, institutions are leading by example. Libraries in Sweden, for example, have announced they will discontinue the use of TAs from 2023 and simultaneously sign an increasing number of agreements with fully OA publishers.²⁸ If replicated at scale, this is the fastest and most efficient way to ensure the necessary transition to full OA publishing.

Some have suggested that fully implementing Plan S would require market regulation by some kind of regulatory body.²⁹ This must be a solution of last resort. But without a commitment from traditional subscription publishers to work in good faith to achieve full OA within a reasonable timeframe, investigations into anti-competitive behaviour and stronger regulatory action may be the only way forward.

For Plan S to achieve its stated mission of making OA a reality, effectively and on time, the hybrid loophole must be closed as soon as possible. If it isn't, we will still be having this debate a decade from now. Plan S has a vision of an open and transparent marketplace for publishing services based on funder mandates. If we can focus on this vision, the brave ideas of the plan's authors will not have been wasted.

²⁸ See: ["We want to reduce the cost of publication"; Curie; 5 May 2021.](#)

Recommendations from Frontiers

We believe the original spirit and mission of Plan S can be salvaged, and the bold initiative have its true intended impact, if the signatories of Plan S, institutions and libraries:

- Ensure their funding allocations meet the needs and requirements of authors and the academic community.
- Negotiate conditions such that all published research is truly, immediately and fully open according to a binding timeline; with a minimum schedule in which at least 75% of content is OA across a publisher's full portfolio by the end of 2024.
- Insist on agreements that are transparent and visible to all stakeholders, with a clear attribution of costs to products and services, allowing a credible assessment of value and unbundling.
- Establish a truly fair competitive landscape by applying the principles of common commercial conditions and basic rules of public procurement.

Our recommendations are summarized in Figure 9. At Frontiers, we stand ready to work with all stakeholders to meet this call to action, to share our knowledge and data in doing so, and to see Plan S delivered.

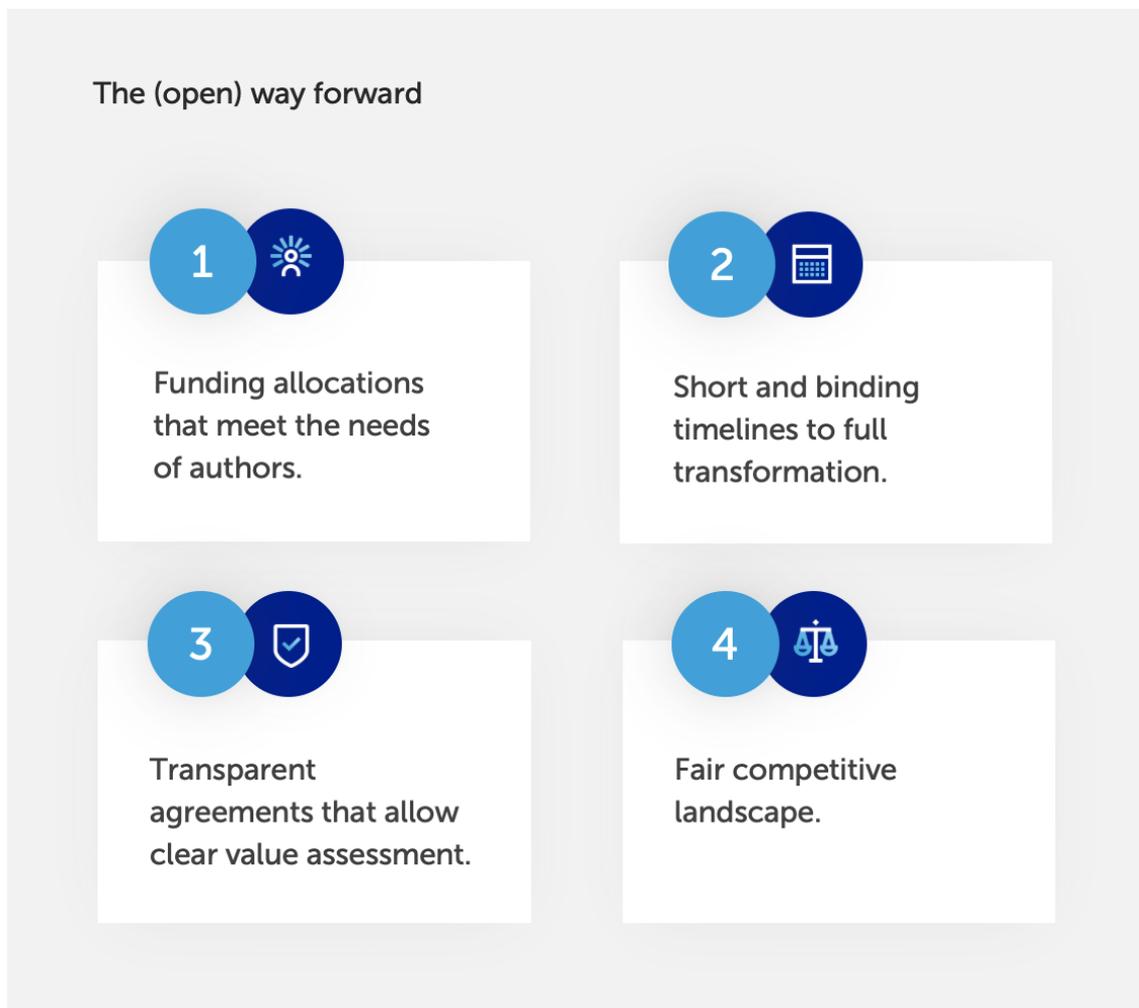


Figure 9
Four recommendations from Frontiers to salvage the transition to full OA.