Subscribe to Open: A practical approach for converting subscription journals to open access

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Key points
- OA business models must be sustainable over the long term, and article processing charge payments do not work for all; Subscribe to Open (S2O) is proposed, and being tested, as an alternative model.
- The S2O model motivates subscribers to participate through economic self-interest, without reliance on institutional altruism or collective behaviour.
- The S2O offer targets current subscribers, uses existing subscription systems, and recurs annually, allowing publishers to control risk and revert to conventional subscriptions if necessary.
- An Annual Reviews pilot is currently testing the S2O model with five journals.

INTRODUCTION

Whether motivated by mission or by the growing number of OA mandates, many scholarly publishers seek to identify a business model that will allow them to transition from subscriptions to open dissemination. While some publishers rely on OA models based on article processing charges (APCs) or on collective membership models, those approaches are not suitable for all journals.

For a significant portion of journals, models based on APCs are not feasible. In some disciplines, especially in the social sciences and humanities and in under-resourced regions of the world, only a small percentage of articles result from funded research, severely limiting available funding for APCs. Article fees are also inappropriate for some types of research output, such as commissioned review articles. Besides the economic issues, the cultures of many disciplines remain sceptical about the potential conflict of interest inherent in article fees.

As for collective support, OA proponents have long observed that, were all institutions to convert their subscription fees to OA support payments, existing subscription journals could be ‘flipped’ to open with minimal disruption for both publishers and subscribers. While simple conceptually, the approach is difficult practically as it confronts the reality of the collective action problem in providing open resources. Stated simply, once content becomes openly available, it is in the economic self-interest of subscribers to cease paying. Although some sympathetic institutions might support the open resource initially, over time, the inequitable support burden would cause institutions – even those committed to OA – to withdraw their contributions. Given the risk of substantially reduced revenue, few publishers would be able or willing to attempt a conversion to OA under a model that relies primarily on mission-driven altruism.

Most current collective funding models – including, for example, Knowledge Unlatched and Open Library of the Humanities – rely to some extent on institutional altruism and pro-group behaviour to motivate participation. At the same time, they attempt to address the collective action problem by offering incentives exclusive to contributors, often in the form of input.
into the resource’s governance. While these initiatives have enjoyed various degrees of success, they have not yet provided a replicable, low-risk model that addresses the needs of many non-profit publishers.

‘Subscribe to Open’ (S2O) is a pragmatic funding model that allows a publisher to convert journals from gated access to OA one year at a time. S2O offers a journal’s current subscribers continued access at a discount off the regular subscription price. If current subscribers participate in the S2O offer, the publisher opens the content covered by that year’s subscription. If participation is not sufficient – for example, if some subscribers delay renewing in the expectation that they can gain access without participating – then the content remains gated. Because the publisher does not guarantee that the content will be opened unless all subscribers participate in the offer, institutions that value access to the content – demonstrably, the journal’s current subscribers – must either subscribe conventionally (at full price) or participate in S2O (at a discount) to ensure continued access. The offer is repeated every year, with the opening of each year’s content contingent on sufficient participation.

While the design of S2O is informed by the collective action challenges described above, the model relies on economic self-interest to motivate subscriber participation and leverages existing library procurement processes to coordinate payment. S2O is designed to provide stable revenue over time, with low administration costs, while allowing a publisher to control the financial risk it incurs. In this way, S2O is well-suited to all society publishers, including those with little or no tolerance for financial risk.

THE ANNUAL REVIEWS PILOT

S2O has been developed by Annual Reviews, a well-regarded non-profit scholarly publisher, founded in 1932, that currently publishes 51 review journals in specific disciplines in the biomedical, life, physical, and social sciences. The development of S2O was supported by a grant from the Robert Wood Johnson Foundation to Annual Reviews to increase access to public health information. The grant (Grant ID# 74429) had two components: to measure the impact of OA on usage of a single journal, the Annual Review of Public Health, for 1 year and to develop a sustainable OA model for funding review journals that might be broadly applicable.

Testing OA usage

To fulfill the first part of the funding, Annual Reviews opened the Annual Review of Public Health in April 2017. The journal operated under a fully funded OA model in which no APCs or other charges were made. Annual Reviews then tracked and compared its usage against its other journals. Usage of the Annual Review of Public Health has continued to grow since the content was opened. Figure 1 demonstrates the growth in usage compared to two other Annual Reviews journals (the Annual Review of Clinical Pathology and the Annual Review of Medicine) that have continued to have paywalls.

By May 2019, monthly usage of the Annual Review of Public Health had increased by a factor of eight (compared to May

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FIGURE 1  Impact of OA on the usage of the Annual Review of Public Health relative to comparable paywalled Annual Reviews journals.
2016), reaching almost 200,000 downloads per month, while usage of the paywalled journals remained constant. Working with Publisher Solutions International, Annual Reviews analysed institutional usage of the OA content. In 2016, the journal was used at subscribing institutions only: some 1,100 academic customers in 57 countries. By 2018, the journal was used at 7,220 institutions in 137 countries. This increased audience included public health agencies, government and state administrations, non-governmental organizations, hospitals, media organizations, high schools, and prisons among others. For Annual Reviews, a mission-oriented non-profit publisher, this dramatic impact on usage provided a compelling impetus to pursue a sustainable strategy for OA, developed under the second component of the grant.

Open business model design criteria

Although Annual Reviews’ publishing operation is larger than those of most society publishers, its requirements for a sustainable OA model are similar to those of many small publishers, especially in the humanities and social sciences. Annual Reviews required an open business model that provides:

An alternative to APCs: Annual Reviews’ journals publish authoritative and comprehensive review articles, covering the recent research literature on a specific topic. Because the review articles are commissioned from accepted authorities in the field, and are expensive to produce, Annual Reviews cannot levy APCs, even were it inclined to do so.

Cost-effective coordination of large subscriber bases: Most Annual Reviews journals have large and diverse subscriber bases. Most of the journals have over 1,000 subscribers, distributed globally and representing disparate organization types and sizes. As a result, Annual Reviews required a model that provides a cost-effective approach to motivating and coordinating large, varied, and geographically distributed subscriber bases.

Stable revenue over time: In common with all subscription journals, Annual Reviews needed a model capable of providing long-term financial stability, including modest revenue growth, to support perennial publication.

Controllable financial risk: While expanding access to the content is consistent with the mission of Annual Reviews, experimenting with a new open model could not expose the organization to significant financial risk.

THE “SUBSCRIBE TO OPEN” OFFER

Annual Reviews is presenting the S2O offer as follows:

• The offer targets each journal’s current subscriber base and is communicated via Annual Reviews’ regular invoicing process.
• The invoice assumes participation in S2O as the default and includes a 5% discount for that participation.
• If the number of institutions that do not participate exceeds an acceptable level by a specified date – for example, if non-participation exceeds a journal’s typical cancellation rate – Annual Reviews will fail the offer, and the content will not be opened.
• If the offer fails, Annual Reviews will honour the S2O discount for those institutions that participated in the offer, and those institutions will continue to receive access under a conventional subscription. Any institution that did not participate and wishes to regain access will need to re-subscribe at the regular, undiscounted price.
• If Annual Reviews deems S2O participation to be sufficient, then that year’s subscription content will be opened. Once opened, that year’s content will remain OA; it would never revert to being gated, even were a subsequent year’s offer to fail.
• Annual Reviews is using archival content as an additional incentive to participate in S2O. If the S2O offer succeeds, Annual Reviews will make backfile content for the five participating journals freely accessible for a year (although this archival content will not be perpetually opened). If the offer fails, the archival content will stay behind a paywall.
• The offer will recur annually. From 1 year to the next, for a subscriber to ensure that it continues to receive access to that year’s content, it must either participate in S2O (and receive a discount) or subscribe conventionally (and forgo the discount).

THE LOGIC OF S2O

To explain why the S2O offer is presented as it is, we need to explore the model’s design elements in more detail. These elements combine to reinforce the model’s logic.

Serves the economic self-interest of subscribers

The subscriber bases for many journals are large and diverse. This absence of social cohesion across subscribers limits the extent to which a publisher can rely on pro-group behaviours – including altruism, anticipated reciprocity, and other social incentives – to motivate participation in a collective funding offer. Therefore, a model is needed that induces institutions to participate by making it in their individual self-interest to do so.

In combination with the S2O discount, framing the offer to require S2O participation (or a conventional subscription) to ensure access to the current year’s content makes participation in the economic self-interest of subscribers. The offer’s economic benefit is reinforced by a participating institution receiving the S2O discount even if the offer were to fail. That is, a participating institution benefits from participating in S2O regardless of what other institutions do.

Targets current subscribers

Focusing the offer on the current subscribers to a journal is essential to the model’s design for several reasons. First, existing subscribers have demonstrated demand for the journal at the
current subscription price. This justifies framing the S2O offer solely in terms of the participation of existing subscribers and to require that each institution either participate in S2O or subscribe conventionally to ensure continued access to the journal. Broadening the offer’s scope beyond current subscribers would remove the logical imperative that each subscriber must participate for the offer to succeed.

Second, expanding the field of contributors beyond subscribers might invite the perception that participation represents a voluntary contribution rather than a self-interested action. Again, this perception would undermine the logic compelling subscribers to commit to S2O individually to continue access.

Finally, targeting non-subscribers would require that broader participation be induced and coordinated, which would likely prove difficult, time-consuming, and expensive. Such coordination is something that S2O seeks to avoid.

Although S2O is predicated on the participation of current subscribers, secondary revenue models – if carefully designed – might generate supplemental revenue beyond the journal’s subscriber base. For example, a supplemental funding model could target high-use institutions that are not current journal subscribers but that demonstrate significant use of the content once it has been opened under S2O. Such institutions would be motivated to contribute to help ensure that their researchers and patrons continue to have access to content for which they have demonstrated demand. Such a secondary model might be implemented after several years of content becomes openly available and use patterns can be analysed.

**Avoids collective coordination**

Because S2O participation is driven by each subscribing institution’s self-interest, the model does not rely on altruism, cannot be considered donative, and does not require the coordination of institutions to behave collectively. This allows S2O to be presented to subscribers as a categorical business offer within the journal’s existing subscription process.

Not only is no collective behaviour required, a publisher implementing the model will want to avoid sending mixed signals. For example, a publisher should not publicly communicate a total revenue target for the offer as that would suggest a shared success threshold and risk de-emphasizing the individual participation of each subscribing institution. Similarly, publicly tracking progress towards 100% participation in the offer would send the wrong message as it frames the goal in terms of collective behaviour, as opposed to self-interested action. Any suggestion that the offer relies on collective intent risks undermining the model by leading subscribing institutions to assume that their participation is not required for the offer to succeed.

**Uses existing procurement processes**

The S2O offer is communicated through the publisher’s conventional subscription invoicing channel, including established workflows, subscription agent relationships, and sales approaches. Using the existing procurement system reinforces that the offer requires an institution-specific decision, helps ensure that the participation decision does not get diverted to the special processes often applied to altruism-based initiatives, and reduces the costs of implementing the model. In particular, S2O avoids the article-level transaction and workflow costs that APC models entail. In addition, using existing procurement processes and library budgets maintains a communication and data channel between the publisher and libraries.

**Guarantees OA only with full participation**

The expectation of full participation is critical both to the logic of the S2O model and to how the offer is implemented in practice. In terms of the model’s logic, the full participation condition reinforces that gaining access to the journal requires an institution-specific decision and is not a collective action. That other institutions, beyond the universe of contributors, will also gain access to the journal does not change the fact that current subscribers must either participate in S2O or subscribe conventionally to guarantee continued access. As a result, participating in S2O cannot be considered a voluntary donation and should not violate procurement policies forbidding donative payments.

While necessary for the model’s logic, attaining 100% participation may prove difficult in practice. In such cases, a publisher can specify that it only guarantees OA if the participation requirement is met. This innocuous caveat allows the publisher to open the content if it deems participation to be sufficient, even if it falls shy of 100%. This presentation conveys the essence of the offer and signals the need for every institution to participate. It also allows each publisher to determine its tolerance of non-participation and of the risk it is willing to accept. For example, a risk-averse publisher, unable to accept even a modest decrease in subscription revenue, could fail the S2O offer were any subscribers to opt out.

Defining the offer’s target audience as the journal’s current subscriber base allows the publisher to identify which institutions should be contributing to the journal’s support. However, in assessing full participation, a publisher will need to accept that, over time, some institutions will need to discontinue their participation in the offer due to a material change in circumstance, such as a budget reduction or change in research or teaching focus. As a result, the publisher will need to recognize which cancellations would have occurred even under a conventional subscription model.

**Recurs annually**

One of the challenges of collective funding approaches is that contributors will withdraw from an action over time. Therefore, a stable revenue model needs to counter this tendency.

With S2O, whether the content will be opened or remain gated is decided annually via recurring offers. In any given year, if the participation threshold is reached, that year’s content will be made open; if the action fails, that year’s content will remain
gated (although institutions that accepted the offer would receive the S2O discount nevertheless). The same logic that motivates participation in the first year—a discount for participating and the risk of lost access for not participating—also makes the offer compelling in future years.

Should a publisher wish to discontinue S2O for any reason, the recurring nature of the offer, and its use of existing subscription invoicing channels, would simplify a reversion to a conventional subscription model. In practical terms, under S2O, a journal never leaves a subscription procurement model.

**Complies with OA policies**

With S2O, OA is contingent on the offer’s conditions being satisfied. Therefore, a publisher will need to make provisions for accommodating authors who want or need to ensure an OA channel for their article. In the vast majority of cases—including for authors under Plan S—this could be accomplished by allowing immediate green archiving of the author’s accepted manuscript (or the version of record) in an open repository.

**SUMMARY**

To summarize the basic elements of S2O, the offer:

- Targets a journal’s current subscriber base using existing subscription procurement processes.
- Motivates participation via the economic self-interest of subscribers.
- Avoids reliance on altruism and pro-collective behaviour.
- Recurs annually to ensure ongoing participation and stable revenue.

There remains considerable room for variation and experimentation within these parameters. For example, publishers may experiment with the amount of the S2O discount, how the discount is funded, how the invoice is positioned, whether the offer extends to multiple-year terms, and whether/how access to archival content is used to enhance the offer.

The S2O model remains in the pilot phase with Annual Reviews. This phase should help refine and strengthen the model’s implementation and broaden its applicability. Interest in the model continues to build, and Annual Reviews intends to help coordinate an S2O community of practice to enable publishers to share their experiences implementing the model and to facilitate testing variations of the model.

S2O has been announced to our existing subscribers and will be implemented as a pilot on five Annual Reviews journals in 2020:

- *Annual Review of Cancer Biology*
- *Annual Review of Environment and Resources*
- *Annual Review of Nuclear and Particle Science*
- *Annual Review of Political Science*
- *Annual Review of Public Health*

Annual Reviews will be tracking and reporting on the success of the pilot as we learn more. More information on the Annual Reviews S2O pilot is available here: [www.annualreviews.org/page/subscriptions/subscribe-to-open](http://www.annualreviews.org/page/subscriptions/subscribe-to-open)

S2O does not attempt to transform the conventional economic model of scholarly publishing. Transforming the underlying economic logic of scholarly communication will likely depend on collective or commons-based alternatives to market models for creating and disseminating research output. It will also require significant changes in research funder policies, researcher evaluation practices, and author attitudes and behaviour—issues beyond the control of any individual publisher. Annual Reviews endorses the search for new economic structures. In the meantime, S2O provides an immediate and practical path to opening a vast body of research output that would otherwise remain gated.