

Evaluation of offset agreements – report 4: Springer Compact

This document is the fourth report of five on the evaluation of offset agreements in Sweden and will focus on the agreement with Springer Nature¹ called Springer Compact and its outcome up until mid-2018.² The evaluation has been conducted to examine the effects of Springer Compact regarding economy, administration, researcher attitudes, and research dissemination, and to make recommendations for future negotiations with Springer Nature and other publishers.

The first two reports were written in Swedish; the remaining reports are in English. Some background information from report 3 is repeated in this report. The reader who is familiar with report 3 is recommended to focus on the following sections: the table of the Swedish offset agreements (section 1.3.4), the updates in the comparison of Springer Nature's offset agreements (section 3), and the Evaluation (section 4). Many of the recommendations remain the same as in report 3, but with minor additions.

The report is structured in the following way: below is a short summary. Then the first section presents an introduction, describing open access, offset agreements and the background to why such agreements have emerged, the aim of the evaluation and a brief overview of existing recommendations for negotiating open access with publishers. The next section explains the specific offset model of Springer Compact. The third section makes a comparison between different Springer Compact agreements. The fourth and fifth sections contain the evaluation and recommendations for future negotiations.

Summary

The Springer Compact agreement (SC) currently covers Open Access (OA) publishing in 1,705 hybrid journals and reading of 2,110 of the Springer journals available on the SpringerLink platform. The agreement is negotiated by the National Library of Sweden for Swedish institutions within the Bibsam consortium. Forty-two Swedish institutions have signed the SC agreement and all articles published in journals covered by the agreement, with a corresponding author affiliated with one of these institutions, are automatically made OA.

Publication output: By 31 August 2018, 2,936 articles had been published within the agreement, which means that the trend of publishing less than what has been paid for in advance continues.

Economy: In report 3 it was calculated that an average year of SC costs between 42 and 51 % more compared to what the Swedish institutions would have paid for the earlier agreement with Springer.³ When looking at the Netherlands and the UK, who have similar offset agreements, their agreements were more favourable. This report discusses this in light of the Max Planck Digital Library white paper on the large-scale transformation to OA. Cost distribution models for participating institutions are further discussed. An overview of Swedish corresponding authors publishing with journals in the whole Springer Nature portfolio (both subscription and gold OA journals) is also presented and discussed.

¹ *Springer and Nature Publishing Group* merged into *Springer Nature* in 2015, but since their agreements are still negotiated separately it is still useful to discuss them separately.

² A report evaluating Institute of Physics' offset agreement *ScienceExtra* will follow as soon as data allows it.

³ See Section 4.1.1. in report 3, for the different estimates of the Swedish cost, had SC not been signed.

Administration: Springer's Article Approval System (AAS) works well for both authors and administrative staff in terms of efficiency. When it comes to flexibility, authors are unfortunately sent unnecessary and conflicting information on licensing due to standardized e-mails in the AAS workflow. This confounds authors rather than informs them about the licence under which they have published. The AAS workflow is not optimal for OA publishing since it is created to support subscription-based publishing.

Researcher awareness and attitudes: Authors were overall positive to the idea of OA publishing and to more offset agreements such as SC. There is awareness among some of the respondents of the costs involved in publishing, and a few question if these agreements are the best way forward. The support most authors say they would like their university to provide is financial and administrative, closely followed by more information about offset agreements and OA publishing in general. The most important thing seems to be that the OA process, including funding, is easy for the researcher and that funding is predictable.

Research dissemination: When re-examining Altmetric Attention Scores, the updated SC sample did not differ from the control sample (non-OA articles published in January - June 2016, before SC, in journals later included in SC), as they did in report 3. When sources of mentions were analysed, both samples were mentioned in similar ways, with the only difference being that the SC sample articles were significantly more tweeted. Twitter was the main source of attention with tweets making up 92 % of the mentions in the SC sample.

Recommendations

- **Follow existing recommendations, collect data and support the continued development of recommendations.**

The recommendations from LIBER Europe and ESAC should be followed, especially the parts ensuring the transparency of licensing deals. We recommend Bibsam to follow the Dutch example and publish agreements publicly.

Advances in the field of OA publishing are dependent on the continued development of international standards and recommendations that limit costs, specify best practices and optimize workflows. Continued collection and analyses of data are key, as well as joint data analyses at an international level, to counter publishers' current data advantage.

- **Include gold OA and transition information.**

The purpose of these kinds of agreements is to pave the way for a flip of the system from pay-to-read into pay-to-publish. A future agreement should include gold OA. Plan S, and more recently cOAlition S, indicate that research funders are moving away from transitional hybrid solutions to support gold OA in the future. We need a clear transition plan.

- **Renegotiate the terms.**

The current Swedish deal is costlier than the previous subscription-based deal, and it seems to also be more costly than comparable agreements in other countries. This is unsatisfactory, as there was enough money in the system to begin with. A renegotiation should resume at the 2015 year cost and allow for a reinvestment of the Swedish cost of oversize (1,348,600 €) into a next agreement. The cost of oversize is in the realms of what the Swedish Research Council and the National Library subsidised the agreement with (11.6 million SEK, about 1.1 million €). Any future Swedish agreement's total cost cannot differ substantially from the total cost in the latest Dutch agreement, since the two countries are comparable. Agreeing to a smaller reduction in costs could be motivated if the agreement were to be extended to include Springer Nature's gold OA journals to avoid favouring hybrid OA over gold OA.

The read-and-publish model has proven disadvantageous for the Swedish institutions since the agreement is oversized. We argue, as others have argued before us, that a pure pay-as-you-publish model without a reading fee is preferable. The price of the APC should be negotiated to a lower price than list price, as a bulk payment should result in a discount (as for the NL and the UK). Also, the risks associated with estimating future publication output should be shared between the publisher and the participating Swedish institutions.

- **Review the institutional levels.**

The costs paid by individual institutions in the Bibsam consortium should be reviewed, as the payment levels do not correspond to the publication outcome in 2017. Institutions with low publishing outcome will have large yearly variations in their cost per article. Institutions with no publishing have also had increased costs, while large institutions see increasing costs with a model where you pay for your publishing.

- **Recommendations for Bibsam members.**

The researcher survey has shown that knowledge of Creative Commons -licensing is scarce. We suggest that information and education should be provided for researchers in order to help them with new copyright terms.

Conclusion:

The evaluation group finds that the advantages of the SC agreement are that it generates more OA publications compared to how many publications would have been published OA without the agreement. It also generates less administration for the individual researchers and prepares the university libraries for a transition from reading fees to publishing fees. The main disadvantages are that the agreement increases the total cost for reading and publishing and that it promotes hybrid OA over gold OA. Hybrid publishing is one way to reach the goals of OA, according to Plan S, but it is not part of an OA future.

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1 Introduction

The National Library of Sweden, through the Bibsam consortium, negotiates license agreements for electronic journals and databases on behalf of 85 Swedish universities, university colleges, governmental agencies, and research institutes.⁴ Bibsam has negotiated pilot offset agreements with some publishers. The aim is to support a transition to Open Access publishing at controlled costs for the participating institutions.

Evaluations of these offset agreements are conducted based on the agreements themselves, publication data and survey data in order to examine their effects regarding economy, administration, researcher attitudes, and research dissemination. The evaluations are conducted by a group of independent researchers on behalf of the Bibsam consortium. The group consists of Henrik Aldberg, Swedish Research Council; Helena Francke, University of Borås; Ulf Kronman, National Library of Sweden (2016 – May 2018); Camilla Lindelöw, National Library of Sweden; Lisa Olsson, Stockholm University (coordinator) and Niklas Willén, Uppsala University (2016 – May 2018).

This section specifies what we mean with Open Access, describes different models for offset agreements, and explains the emergence of offset agreements in context.

1.1 Open Access and Article Processing Charges

Open Access (OA) is here defined as research results that are disseminated online and freely available to everyone.⁵ Some publishers charge authors an Article Processing Charge (APC) to publish their research OA. We distinguish between three types of journals:

1. Subscription-based journals where OA publishing is not offered,
2. Hybrid journals where OA is offered if an APC is paid,
3. Gold OA journals⁶ where all publications are OA. There are two types of gold OA journals:
 - Those where publishing is free of charge.⁷
 - Those who charge APCs.

In cases when OA journals charge APCs, the fees are in general lower than those of hybrid journals.⁸

1.2 Offset agreements

An offset agreement in this context is a transitional agreement where financing is redistributed from subscription costs to cover the costs of OA publishing in the journals of a given publisher. There are basically three types of offset agreements:

1. A pure **Offset** agreement means that an institution reduces its subscription costs with a publisher based on the APCs the researchers from the institution paid for publishing OA during the previous year.
2. The second kind of offset model is the **Read & Publish**. In these agreements, one publishing charge and one reading charge are paid.
3. The third kind is the **Pay-as-you-publish** model which means that the costs for APCs are centralized and the institutions in the agreement do not have to pay a fixed amount in advance for a specific number of publications. This model would not include reading costs.⁹

⁴ <http://www.kb.se/bibliotek/centrala-avtal/Bibsam-Consortium/>

⁵ Swedish Research Council (2015). Proposal for national guidelines for open access to scientific information. Stockholm: Swedish Research Council. <https://publikationer.vr.se/en/product/proposal-for-national-guidelines-for-open-access-to-scientific-information/> (p. 8).

⁶ <http://www.doaj.org/> (2017-08-21).

⁷ These journals comprise 71 % of the 11,001 journals in DOAJ: <https://sustainingknowledgecommons.org/2018/02/06/doaj-apc-information-as-of-jan-31-2018/9/>

⁸ Solomon, D., & Björk, B.-C. (2016). Article processing charges for open access publication — the situation for research intensive universities in the USA and Canada. PeerJ, 4, e2264. <http://doi.org/10.7717/peerj.2264>

⁹ <https://septentrio.uit.no/index.php/SCS/article/viewFile/3943/3740>

Not offset agreements, but agreements signed to facilitate and support OA, are the agreements offering authors reductions on APCs. A record of Bibsam's such agreements can be found in section 1.3.4.

1.3 Offset agreements in context

1.3.1 The development of offset agreements

Offset agreements are transitional agreements signed with the purpose to accelerate the transition to OA, at a reasonable cost, through increased transparency and more efficient administration. In short, they aim to flip the publishing system from pay-to-read into pay-to-publish. Two developments have been important in leading up to the emergence of offset agreements:

First, European and national recommendations all support a development towards Open Science, where publicly funded research is available to the public. Consequently, Bibsam strives to sign agreements that support and accelerate this transition.

Second, the development of OA, including recommendations and mandates, has led researchers to pay increasing amounts of APCs to publish OA in hybrid journals over the past years. At the same time, publishers keep charging universities subscription fees to access subscription and hybrid journals. This has been referred to as "double dipping". The APCs paid by researchers have proved difficult to monitor, which benefits publishers. It is in licensees' interest to sign agreements that combine subscription and publishing fees to increase transparency and control OA expenditure.

Geschuhn and Stone¹⁰ suggest that library consortia and research institutions need to seize this moment of transition to take charge and redraft the workflows and processes for the future. It is an opportunity to reshape the publishers' service/product to make it better fit today's needs. More transparent sharing of information on the publisher's part is desirable to improve institutional workflows, make the best use of metadata and monitor costs. Libraries should proactively engage to include these aspects into negotiations so as not to be in the hands of the publishers.

1.3.2 Aim of the evaluation

When signing the SC pilot in 2016, Wilhelm Widmark (director of Stockholm University library and head of the Bibsam steering committee), stated that:

*The purpose of the pilot is to gather experience by trying new processes and workflows for open access publishing. The pilot is in line with what the Swedish Research Council has proposed to be national guidelines for open access, and thanks to their support it can be realized.*¹¹

Therefore, the aim of the current evaluation is to compile arguments and make recommendations to Bibsam for future negotiations with Springer Nature and other publishers. The recommendations will mainly rely on the work of LIBER Europe (Europe's leading association of research libraries), ESAC (Efficiencies and Standards for Article Charges), and on the findings of the ongoing evaluation.

1.3.3 Existing recommendations for negotiating OA with publishers

LIBER Europe has developed five principles¹² for supporting libraries negotiating OA agreements with publishers.

¹⁰ Geschuhn, K. & Stone, G., (2017). It's the workflows, stupid! What is required to make 'offsetting' work for the open access transition. *Insights*. 30(3), pp.103–114. DOI: <http://doi.org/10.1629/uksg.391>

¹¹ <http://www.kb.se/aktuell/nyheter/2016/Sverige-forst-i-Norden-med-ny-modell-for-oppet-tillgangliga-forskningspublikationer/> (2017-11-30)

¹² <http://libereurope.eu/blog/2017/09/07/open-access-five-principles-for-negotiations-with-publishers/> (based on <https://oa2020.org/> and <http://openaccess.nl/sites/www.openaccess.nl/files/documenten/amsterdam-call-for-action-on-open-science.pdf>)

ESACs *Recommendations for article workflows and services for offsetting/open access transformation agreements*¹³ provide advice and a checklist of necessary elements to include in future negotiations, such as Author and article identification and verification, Funding acknowledgement and metadata, and Invoicing and reporting.

Similarly, an interesting overview is offered in the report *Financial and administrative issues around article publication costs for Open Access* from INTACT (a project aimed “to establish transparent and efficient procedures for managing article processing charges” for OA publications). The report provides suggestions to evolve the administrative procedures of OA publishing.¹⁴ The suggestions involve 1) A central acquisition budget, 2) Database including publications by institutional authors, with data such as costs, OA license, type of publication, 3) Administrative procedures (acceptable types of offset agreements, author identification and accounting procedures), and 4) Reporting and transparency.

Since the write up of report 3, 11 national research funding organisations (cOAlition S) from Science Europe (the association of European Research Funding Organisations and Research Performing Organisations) have agreed to implement the 10 principles of Plan S in a coordinated way.¹⁵ The key principle stipulates:

“After 1 January 2020 scientific publications on the results from research funded by public grants provided by national and European research councils and funding bodies, must be published in compliant Open Access Journals or on compliant Open Access Platforms.”

What is important in the context of evaluating SC is that the ninth principle reads “The ‘hybrid’ model of publishing is not compliant with the above principles”. In Sweden, one research funder (the Swedish Research Council for Sustainable Development, FORMAS) participates in cOAlition S.

1.3.4 Bibsam’s other agreements intended to support the transition to an OA publishing system

Since SC was implemented, more efforts to facilitate the transition to an OA publishing system have been made. Bibsam has signed a number of agreements with both traditional and OA publishers. See them listed below (the SC agreement is included for reference).

¹³ Geschuhn, K. & Stone, G., (2017). It’s the workflows, stupid! What is required to make ‘offsetting’ work for the open access transition. *Insights*. 30(3), pp.103–114. DOI: <http://doi.org/10.1629/uksg.391>

¹⁴ http://repository.jisc.ac.uk/6665/1/Financial_and_administrative_issues_around_APCs_for_OA_June_2017_KE.pdf (p. 16-17).

¹⁵ <https://www.scienceeurope.org/coalition-s/>

OA publishing agreement

	Does the contract cover OA publishing in all journals?	Hybrid/gold
OA gold		
Frontiers (2018-2021) No prepayment, 10 % discount	yes	gold
De Gruyter (2018-2020)	yes	hybrid/gold
Read & Publish		
Royal Society of Chemistry (2018-2020)	no	hybrid
Springer (2016-2018)	no	hybrid
Offsetting		
IOP Publishing (2017-2019)	no	hybrid
Taylor & Francis (2018-2020)	no	hybrid

Table 1 - OA publishing agreements made by Bibsam.¹⁶

The agreements in Table 1 many times entail manual workflows where the publisher sends an e-mail notification to the corresponding author's institution (once a year/month/at acceptance date), sometimes via Bibsam and often in excel spreadsheets. The institution then performs an eligibility check and notifies the publisher via e-mail or (as in the case with Springer and Taylor & Francis) via the publisher's dashboard.

In addition to these agreements, Bibsam has negotiated discounts on publishing fees for their members with the following publishers: ACM Digital Library, American Chemical Society, BMJ, Cambridge Core (Journals), Inderscience, IOS Press, ISPG, Karger and Wiley. Furthermore, the National Library of Sweden supports the infrastructural services DOAJ, COAR, SPARC Europe, Sherpa/Romeo, and Project COUNTER, as well as the content services Knowledge Unlatched, Kriterium, Open Library of Humanities and Open Book Publishers.¹⁷

2 The Swedish Springer Compact agreement

Springer Compact is a Read & Publish agreement between Springer Nature and 42 Swedish institutions, negotiated through the Bibsam consortium. The agreement is a pilot and is financially supported by the Swedish Research Council and the National Library of Sweden. The agreement runs from 1 July 2016 to 31 December 2018. Similar agreements have also been signed by the Netherlands, the United Kingdom, Austria and the Max-Planck Society in Germany.

¹⁶ For further information, see <http://openaccess.blogg.kb.se/oppen-tillgang-i-bibsamavtalen/>.

¹⁷ For further information on these agreements and services, see <http://openaccess.blogg.kb.se/kb-stodjer-tjanster-for-oppen-tillgang/>.

The Swedish agreement currently covers OA publishing in Springer's 1,705 hybrid journals and reading of 2,110 of the e-journals accessed on the SpringerLink platform¹⁸. The agreement covers the OA publishing of *Original papers*, *Review papers*, *Brief communications*, and *Continuing education*. There is no possibility for Swedish researchers to opt-out from publishing OA within the SC agreement.

According to the agreement, up to 4,162 articles by Swedish researchers from the participating institutions in Bibsam will be published OA between July 2016 and December 2018. The cost is equivalent to 2,200 € per article (the current list price of Springer Open Choice journals) in addition to a subscription fee (called reading fee in the agreement) which is lower than the previous subscription fee. To be eligible for publication within the agreement the corresponding author of an article must be associated with one of the participating institutions. The reduced subscription fees should be viewed as a condition for Bibsam to agree to the APC list price of 2,200 € for the articles. This is where the Swedish offset lies. See Table 2 for a comparison of fees 2015 and an average year of the SC agreement.

	2015 (€)	Springer Compact 2016–2018 total (€)	An average year of the SC agreement (€)
Publishing fee	*	9,156,400**	3,662,560**
Subscription/Reading fee	2,276,728	1,313,273	525,309
Total	2,276,728	10,469,673	4,187,869
Expected number of OA articles in hybrid journals	162	4,162	1,665

*Table 2 - Springer Nature's Swedish publishing fee, reading fee, total cost and expected number of OA articles in hybrid journals: 2015 (the year before SC), and an average year of the SC agreement. The SC figures in this table are based on the 40 participating institutions that signed the agreement in 2016. Currently, 42 institutions participate. *In 2015 Swedish researchers paid 345 400 € in APC. **List price APC (2 200 €) times pre-paid number of OA articles per year.*

In report 2,¹⁹ it was concluded that the agreement achieves 1) a vast increase in OA publications, 2) control over expenditure for publishing, 3) paying for publishing, rather than reading (see the flip of costs in Table 2), and 4) a great ease of the administrative burden on researchers. On a less positive note, the agreement is expensive, oversized (institutions published approximately 20 % below the pre-paid number of articles) and favours hybrid OA over gold OA.

SC is expensive and that should be used as leverage in negotiating a next agreement, in addition to knowledge on the terms of the other offset deals Springer Nature has signed. This next section gives an overview and international comparison of the agreements signed.

3 Comparison of Springer's offset agreements

In this section, we compare the Swedish agreement to Springer's other existing offset agreements (called Springer Compact or Springer Open Choice). Comparisons like this are hindered by non-disclosure clauses which counteract the principle of openness (number 3 of LIBER Europe's principles mentioned above). The Dutch have consistently published their agreements online, and to our understanding without repercussions.

In report 3, we concluded that the Dutch offset agreement (2015) had come at no cost increase, while the Swedish entailed a price increase of 42 or 51 %. For details on how this was calculated, see report 3.

¹⁸ A list of the journals and institutions that are part of the agreement: www.springer.com/oaforse. Note that not all journals on the SpringerLink platform offer hybrid OA publishing. Also, the agreement does not cover publishing in the gold OA journals of Springer Nature, nor OA publishing in any of the hybrid or OA journals previously owned by Nature Publishing Group, Nature Academic or Palgrave. Swedish research paid Springer Nature 1.2 M€ (2015) and 1.4 M€ (2017) for reading access of Nature Publishing Group, Nature Academic and Palgrave titles. Swedish research also paid 2.0 M€ for OA publishing (APCs) not included in SC. The total costs to Springer Nature were 5.8 M€ (2015) and 7.6 M€ (an average year of SC).

¹⁹ <http://openaccess.blogg.kb.se/2017/09/28/offsetting-agreements-in-academic-publishing-in-sweden/> (2017-12-15)

Sweden is paying Springer's APC list price (2,200 €) in their model and has been compensated with a reduced reading fee but the overall cost increase compared to the previous agreement cannot be argued to be a successful offsetting of costs. It appears the UK has avoided negotiating an APC-based contract.

In 2018, the Netherlands signed a new agreement with Springer,²⁰ running from January 1, 2018, to December 31, 2021, in which they pay 3,040,620 € the first year and then have a 3.5 % yearly increase. The Dutch cost has increased slightly compared to the first Dutch agreement but is not in level with the Swedish cost. Dutch authors are allowed to publish 2,080 articles per year within the agreement. The Dutch have received a 25 % discount on about half of these articles (1,010) and pay list price for the remaining half (1,070 articles)²¹. They also added 155 new hybrid titles to publish in and 250 more titles to read.²²

Given that the Netherlands and Sweden are two countries similar in size with respect to the researcher population, their costs with Springer for roughly the same product ought to be similar in size.

4 Evaluation

The evaluation sets out to examine the effects of the Swedish SC agreement regarding *economy*, *administration*, *researcher attitudes*, and *research dissemination*.

4.1 Economy

In the 2015 paper *Disrupting the subscription journals' business model for the necessary large-scale transformation to open access*,²³ the concept of "enough money in the system" was introduced. The paper outlines a global transformation from a subscription-based model to an OA business model financed by the money already within the system. The Swedish SC agreement does not meet this criterion. Instead, by using a baseline that comprises both subscription costs and APCs paid outside library budgets in 2015, and a cost increase of close to 50 %, it adds more money to the system. In this section, we look at the economy of the agreement and we have chosen to consider two separate levels: the national and the institutional ones. Since the cost of the agreement is dependent on the number of articles published by the institutions we have also included the publication output in the section relating to the economy. In this report, we also present an outlook of publishing by Swedish corresponding authors in both hybrid and gold OA journals of Springer Nature.

4.1.1 National level – Economy and publication output

The Swedish SC agreement consists of a publishing fee (87 % of the total cost and based on the APC list price) and a reading fee (13 % of the total cost). The total cost of the agreement is 10,469,673 € for the two-and-a-half-year period July 2016 - December 2018. This total cost was estimated to be 42-51 % higher than the situation of 2015, with a consortium subscription fee and APCs paid individually for about 13 % of the Swedish article output in Springer Open Choice (hybrid) journals (see report 3). This cost-increase has been subsidised by the Swedish Research Council and the National Library (11.6 million SEK, about 1.1 million €).

In the agreement, the expected number of articles published by the end of August 2018 is 3,549. The number of articles actually published amounts to 2,936 (83 % of the expected number). Pre-paid and not published articles rollover to the next year, but will not be reimbursed if not published by the end of the agreement. To date, the value of the non-published articles amounts to 1,348,600 €.

4.1.2 Institutional level – Economy and publication output – 2017

In the Swedish SC agreement, the participating institutions pay a 3 % raise on their 2015 subscription price plus a publishing fee based on their publishing in Springer hybrid journals in 2015 (6 levels, see report 3 for details). The rest of the agreement is, as mentioned, subsidised and therefore not paid for by participating institutions.

In previous interim reports, we discussed how to share costs without disrupting current budgets. Institutions used to pay for subscriptions based primarily on the expected number of readers. The shift towards paying for publishing presents challenges at the institutional level. Several institutions that pay for subscriptions today publish rarely, or not at all. Can

²⁰ http://openaccess.nl/sites/www.openaccess.nl/files/documenten/springer2018-2021_signed2.pdf

²¹ See p 84 of the agreement.

²² <http://www.openaccess.nl/en/events/new-agreement-with-springer>

²³ <http://dx.doi.org/10.17617/1.3>

they be expected to share the publishing costs? For the institutions who do publish, offset agreements raise other concerns: the library budgets of today are planned for subscription costs, whereas the SC agreement considers APC costs that are currently paid as part of funder grants, with faculty funds or with a centralised OA fund at the university. The large institutions tend to publish a larger share of the total publication output than small ones, thus skewing the numbers further.

We illustrate this shift with a hypothetical distribution in figure 1. The x-axis shows the subscription costs the institutions actually paid in 2015. The y-axis shows a hypothetical cost, calculated by dividing the total subscription cost of 2015 by an average number of articles published per year and institution in the SC agreement. The average number of articles per year in the SC agreement is based on two years (July 2016 - June 2018). Ideally, an average number would have to be based on more years to give a more stable view of article output. The figure shows that several institutions would pay 0 (those who don't publish) whereas the four largest institutions would pay considerably more in a publish-based model than a subscription-based model.

The main problem lies, as mentioned, with library budgets, as these are fitted for subscriptions and not publishing. This has been noticed in discussions, and the newly launched plan S mentions that fees should be covered by Funders and universities, principle 4: "where applicable, Open Access publication fees are covered by the Funders or universities, not by individual researchers". This would also have to include redistribution of current funding within universities, in order to make the shift from subscribing to publishing possible. How to administer such a system remains to be solved, but the university libraries already have the workflows in place at the university level.

If costs are to be paid by individual organisations, tiers should be based on publication output calculated on the basis of several years, so as to avoid sharp fluctuations. It seems possible to construct a tier system in order to ease administration, see figure 1, but the redistribution of costs toward the large universities would still be an issue. Eventually, this could be combined with a system to roll over costs between years or institutions in order to balance costs.

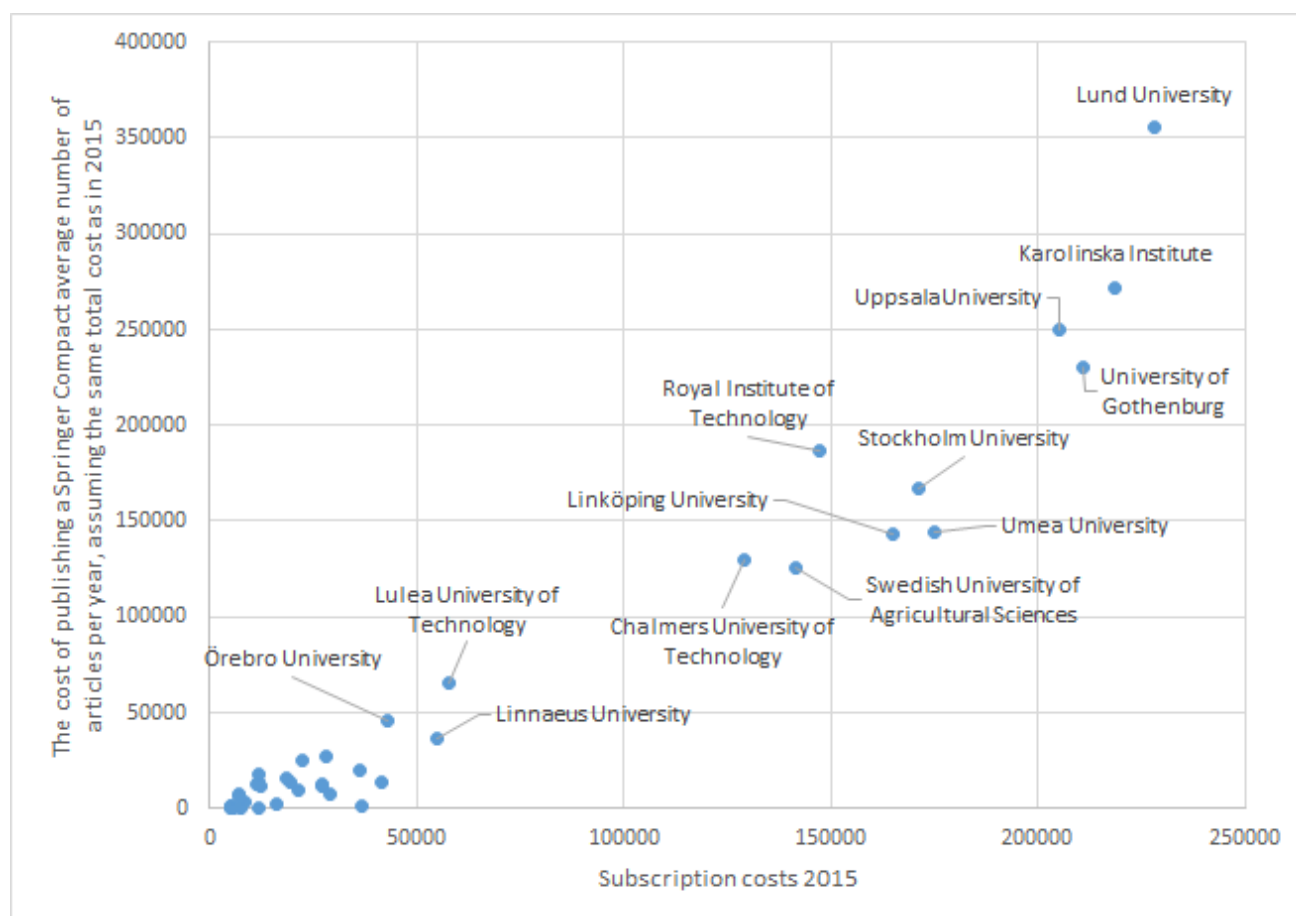


Figure 1: Distribution of costs in a publish-based model vs a subscription-based model. For the purpose of comparison, the total cost of subscriptions (x-axis) has been redistributed based on the average number of articles per year in the Springer Compact agreement (y-axis).

4.1.3 Hybrid journals vs gold OA journals by Springer Nature

A future concern is the growth rate of the scholarly publishing universe. The subscription model has seen cost increases in the range of 3 % over time as more content is constantly added to already big deals. As researchers all over the world face the pressure to publish in order to enhance their careers, the current system will never be satisfied. There is also a quite new trend to publish everything that passes peer review, as opposed to earlier selective processes where new or central ideas were selected, leading to high rejection rates. Table 3 below presents the number of publications in the Springer Nature portfolio with corresponding authors from the Bibsam organisations. Springer Open Choice/Compact is the largest outlet for Bibsam authors, followed by BMC (BioMed Central), with gold OA journals only. Many of the outlets show growth over the presented years, and especially Nature gold articles are growing fast. This is mainly due to the journals *Scientific Reports* (76 % of articles) and *Nature Communications* (18 % of articles).

Springer Nature	2015	2016	2017
BMC			
gold (fully OA-journals)	534 ¹	590 ²	485 ²
Springer Open			
gold (fully OA journals)	71 ¹	65 ²	92 ²
Springer Open Choice/Compact			
subscription (hybrid option may be available)	1,059 ¹	NA ³	NA ³
hybrids	157 ¹	1056 ¹	1399 ¹
Nature, incl Nature Academics			
subscription (hybrid option may be available)	83 ²	95 ²	120 ²
hybrids	54 ²	48 ²	17 ²
gold (fully OA journals)	177 ²	324 ²	368 ²
Palgrave McMillan			
subscription (hybrid option may be available)	24 ²	22 ²	22 ²
hybrids	7 ²	2 ²	2 ²

Table 3 - Articles and reviews published by Bibsam corresponding authors with Springer Nature 2015-2017. The numbers are to be regarded as preliminary due to data quality. ¹Data from Springer Nature. ²Data from Swepub. ³No data is available on the number of publications published in journals that don't offer hybrid OA. If there is a hybrid OA option, Swedish corresponding authors will automatically publish hybrids in accordance with the SC agreement.

4.2 Administration

This section reports on the administrative workflow in Springer Compact. As noted in report 3, the SC workflow is working well for authors and administrative staff. The Article Approval Service (AAS) is easy and efficient. For a detailed description of administrators' attitudes, see report 3.

By 31 August 2018, Swedish university administrators had approved 2,936 articles. Rejections due to ineligibility are less than 5 %.

Despite its benefits, being part of Springer's standard workflow also has disadvantages. Since the workflow was initially set up to serve publishing in subscription journals, it has proven difficult to make small, but necessary, adjustments to accommodate OA publishing. As an example, Springer has standard e-mails sent out to all authors and in some instances the information in them has been impossible to alter, even if it is inadequate and misleading. Of the Swedish authors, 81 % were unfamiliar with CC-BY licenses after having published through SC. Hence, an important educational opportunity was missed, where researchers could have been informed about licensing with the help of Springer and Springer Compact. Others have raised concerns along the same lines: that the existing workflows of the traditional publishers might not be able to cater to current needs.^{24 25} This is something Springer should address.

4.3 Author input on OA and SC

A questionnaire²⁶ was kept active between February 20, 2017, and June 28, 2018, in order to gather author attitudes, experiences, awareness, and suggestions in relation to the SC agreement. The questionnaire was aimed at corresponding authors of publications covered by the SC agreement accepted since January 1, 2017, and was distributed with the help of the administrative staff handling Springer Compact at the participating institutions. When the questionnaire was closed in June 2018, 375 responses had been submitted. The total number of possible respondents, that is corresponding authors with SC-covered publications accepted between 2017 and mid-June 2018, was 2,171. This means that the response rate was only 17 %. Only authors from 21 of the 42 participating organizations answered the questionnaire. This means that authors from some large research organizations are missing. There is a chance that not all corresponding authors got an invitation to participate. Furthermore, some organizations do not have any publications covered by SC and thus no potential respondents to the questionnaire. There may also be other sources of error in the responses, such as replies from more than one author per publication, but this should not significantly change the results.

Results from this questionnaire have been included in previous interim reports, and the results at the closure of the questionnaire remain very similar to those reported in interim report 3, that were collected five months earlier. A brief summary will be included here, but the reader is recommended to consult report 3 for more details.

4.3.1 SC agreement and OA publishing

The figures show that although OA publishing was not one of the most important reasons for submitting an article to a journal, it is still a feature authors appreciate, and 17 % mention it as one reason for choosing a particular journal. At the same time, authors were overall positive to the idea of more offset agreements such as SC. Among free-text answers where respondents were encouraged to elaborate on their view on offset agreements, many only responded with an expression of appreciation. Some mentioned certain researchers' difficulty to fund APCs (for instance doctoral students), along with benefits brought by OA for visibility and impact. The ease of handling the process on the part of the author, which comes with this type of offset agreement, was mentioned by some. Other respondents did voice concern, though, although most were OA advocates. These concerns covered questions about the cost of the agreement, about the costs involved in scientific publishing in general, and a desire for non-commercial OA alternatives to be developed and supported.

Despite many of the respondents saying that they are very positive to OA publishing, only 39 % would or would perhaps have paid for OA publishing of the article which was published through SC. This is about the same number of respondents

²⁴ <https://insights.uksg.org/articles/10.1629/uksg.391/>

²⁵ <https://insights.uksg.org/articles/10.1629/uksg.419/>

²⁶ Francke, Helena (2018): Springer Compact Evaluation - Researcher attitudes questionnaire on Springer Compact, Open Access publishing, and Open Access financing. figshare. Dataset. <https://doi.org/10.6084/m9.figshare.7122545.v2>

(though not necessarily the same individuals) who say they have paid APCs on previous occasions and also about the same number who report that their current research, or parts of it, is covered by an OA mandate. The Swedish Research Council is by far the funder mentioned most often, but another 31 public and private funders are mentioned, many in the medical and environmental areas.

4.3.2 Alternative models

Although less than 1 % provide answers which oppose the move towards OA publishing, a number of researchers (5 %) would like to see a different route to OA. These researchers say they would like to see publishers provide OA at a more reasonable price than today, or advocate alternatives which are non-profit. Open repositories (possibly with a journal overlay), non-profit publishers, and university-run journals or publishing platforms are suggested. Some respondents also mention that publishing green OA should be easier and that there should be more information about this option.

4.3.3 Awareness of Creative Commons licenses

The publications covered by the SC agreement are published with a Creative Commons Attribution (CC-BY) license. The questionnaire contained a question about whether or not the respondent was familiar with the CC-BY-license. As many as 81 % of the respondents answered that they are not familiar with the license. With such a brief question, it is difficult to know if they know the license under a different name, or how they interpret 'familiar'. Regardless, given that a number of initiatives, including the Science Europe "cOAlition S" and the Swedish "Proposal for national guidelines for open access to scientific information", expect publishing to use some form of Creative Commons license, the low number of respondents who claim familiarity with the license is worrying. There is a risk that authors are as uninformed about the conditions under which their publications are made available now, as they were when part of their copyright was transferred to publishers.

4.3.4 Support from the university and the university library

Most authors (73 %) did not know about the Springer Compact agreement before they submitted to the Springer journal. Rather, several authors comment that OA publishing came as a pleasant surprise during the publishing process. It is not surprising, then, that 34 % of respondents mention more information when asked how their university can better support them in OA publishing. As seen above, such information could include copyright issues. However, even though offset agreements and SC are mentioned specifically by several researchers, the topics on which researchers would like to know more also include more general OA and publishing information, including lists of relevant publishers or databases where OA journals can be searched by subject.²⁷ Despite suffering from information overload, or perhaps because they do, several respondents say they need constant reminders. They suggest that information can be distributed as e-mails, information on the web site, seminars and at staff meetings. Other services are also mentioned, such as easy contact points for questions, and support in determining journal quality.

The support most authors say they would like the university to provide, however, is financial and administrative. As many as 44 % state in free-text answers about university support that they would like the university to ensure that there is funding for OA publishing and to handle the payment. This may be in the form of offset agreements, OA funds or other solutions. Such funding needs to be predictable and easy to secure.

When asked for suggestions specifically on improvements of library services on SC or OA, only 17 % of respondents provided an answer. Many express that they are satisfied with the services already offered (12 %; per cent of respondents who replied to the question) or satisfied with the SC and similar agreements (14 %). Other answers are similar to those provided to other questions, bringing up more information (24 %) and alternative publishing models (8 %). Other suggestions include better tools for identifying journals and help to avoid predatory publishers. One respondent suggests that the contributions made by researchers at a university in the form of reviewing for a journal or publisher should be reflected in the OA agreements between the university and the publisher. A handful of authors mention that they have experienced problems with Springer or individual journals, or that there were problems getting their affiliation accepted by the library. Some researchers said the information they received when their article was accepted was not satisfactory, and some were unsure if OA publishing is mandatory, or if they would have to pay APCs despite the agreement.

²⁷ A search tool for high impact pure OA journals is available through Open Access 2020 DE: <https://oa2020-de.org/en/pages/highimpactoa/journals/>.

4.3.5 Conclusion

In conclusion, the authors who responded to the questionnaire are overall pleased to find their articles published with OA in the journals of their choice without having to secure funding for APCs or handling administration. The most important thing seems to be that the OA process, including funding, is easy for the researcher and that the availability of funding for APCs is predictable. This means that OA funds (which risk running dry towards the end of the year) is not an attractive option. How the funding is secured is less relevant for the researcher. The respondents would like to receive more information about SC and other offset agreements, but also about other issues related to OA, such as help with finding good OA options for their publications. Some authors would like to see alternative OA models, primarily non-profit ones. There is awareness among some of the respondents of the costs involved in publishing and a concern that available resources will not be used efficiently from the perspective of researchers and public society.

4.4 Research dissemination

In line with previous interim reports, we examine research dissemination in a narrow sense, as online attention or appraise, using Altmetric data. Altmetric data has been known to be only weakly correlated with citation data²⁸, but has the benefit of taking less time than time than citation data to accrue. Different types of attention happen on different timelines and are different in different academic fields. Whereas citations often occur more than a year after publication date and can continue to build up over many years, social media mentions are likely to occur within the first month from publication.

The Altmetric Attention Score (AAS) is a weighted score based on data from a number of sources meant to reflect online attention. The sources are categorized into Social media, News and blogs, Other sources, Academic sources, and Policy and patents (Table 4). The categories reflect varied levels of engagement or interaction with a research result. Haustein, Bowman and Costas²⁹ suggest that these interactions can range from *applying*, *appraising* to *accessing*, where *applying* indicates a higher level of engagement than *appraising* and *accessing*, in that order. Most Altmetric mentions would typically qualify as *appraise*, but to some extent Altmetric also monitors *access* (Mendeley readers) and *application* (Dimensions citations).

4.4.1 Comparing OA to non-OA

To examine online attention, the 2,822 articles published within SC (between 2016-07-01 and 2018-07-31³⁰), i.e. as hybrid OA, were compared to a control sample of 742 non-OA articles published with Springer between 2016-01-01 and 2016-06-31, in hybrid journals later included in SC. The articles where authors had paid to publish OA were excluded from the control sample. The control sample articles would have become OA automatically through SC, had they only been published after 2016-06-31. We wanted to see if the SC articles (hybrid OA) received different online attention than similar articles behind paywalls. The two samples differed only in time of publication and in being OA or not.

In a previous report, we concluded that the SC sample had higher AAS than the control sample. When revised with the updated samples, this difference did not hold. The SC articles did not have significantly higher AAS than did the control sample articles.³¹

²⁸ <https://onlinelibrary.wiley.com/doi/abs/10.1002/asi.23309>

²⁹ Haustein, S., Bowman, T. D. & Costas, R. (2016). Interpreting 'altmetrics': Viewing acts on social media through the lens of citation and social theories. In Sugimoto, C. R. (Ed.), *Theories of informetrics and scholarly communication*. Berlin: De Gruyter Mouton. 372-405.

³⁰ Not the same time span as the overall report. Therefore, the publication figure here differs from that in other sections of the report.

³¹ The SC articles ($n = 1,600$) were associated with a mean of AAS $M = 7.3$ ($SD = 29.2$). By comparison, the control sample articles ($n = 451$) were associated with a mean of AAS $M = 5.0$ ($SD = 19.5$). To test the hypothesis that the articles in SC and the control sample were associated with significantly different means, we conducted an independent-samples t test, assuming unequal variances. The test was not associated with a significant effect. This means that the SC articles did not have significantly higher AAS than did the control sample articles.

	Control sample (742 articles)	Springer Compact (2,822 articles)
Social media (% of mentions)	93 %	96 %
Twitter	1,904	13,674
Facebook	149	571
Google+	29	147
Reddit	2	-
News and blogs (% of mentions)	6 %	3 %
News	116	330
Blogs	19	142
Other sources (% of mentions)	<1 %	<1 %
Wikipedia	16	39
Videos	2	5
Q&A	-	1
Academic sources (% of mentions)	<1 %	<1 %
Research highlights	1	7
Peer reviews	3	-
Policy and patents (% of mentions)	<1 %	<1 %
Policy documents	1	9
Patents	-	2
Total number of mentions	2,242	14,927

Table 4: The number of mentions captured from each source for the Springer Compact articles and the control sample. Altmetric data was retrieved on 2018-09-12.

When sources of mentions were analysed (Table 4), a few relevant conclusions could be drawn.

First, social media is by far the most common source of mentions in both samples. Tweets alone made up 92 % (SC) and 85 % (control) of the mentions.

Second, there was a statistically significant difference in tweets between the two samples, where the SC articles were more tweeted than the control sample articles.³² We interpret this to mean that OA articles are more easily shared and thus relevant to tweet, than articles behind paywalls. There were no other significant differences in mentions between

³² The SC articles ($n = 1,396$) were associated with a mean of tweets $M = 8.8$ ($SD = 43.9$). By comparison, the control sample articles ($n = 387$) were associated with a mean of tweets $M = 4.4$ ($SD = 9.7$). To test the hypothesis that the articles in SC and the control sample were associated with significantly different tweet means, we conducted an independent-samples t test, assuming unequal variances. The test was associated with a significant effect, $t(1,736) = 3.46$, $p = 0.00055$ (two-tailed). This means that the SC articles were more frequently tweeted than the control sample articles.

the two samples. That is - tweets excluded - the ways in which SC and the control sample articles received online attention were similar.

These conclusions are associated with limitations. Altmetric was only able to track a portion of the articles in the two samples (SC: 57 % and control: 61 %). Furthermore, only a portion of the articles in the two samples had received any attention (SC: 49 % and control: 51 %). These reductions in data impose a limitation on what conclusions can be drawn from the sample about the larger population. Another limitation concerns the fact that there had been more time for the control sample to accumulate attention. This is of lesser importance, however, given that online attention, and particularly tweets, typically occurs within a shorter timeframe than traditional measures of research impact such as citations.

4.4.2 Geographic appraisal

Authors responding to our survey have expressed the desire to reach readers in continents where access to subscription articles may be limited, and see OA as a means towards doing so. For this reason, it is relevant to look at what attention the OA articles have gained around the world.

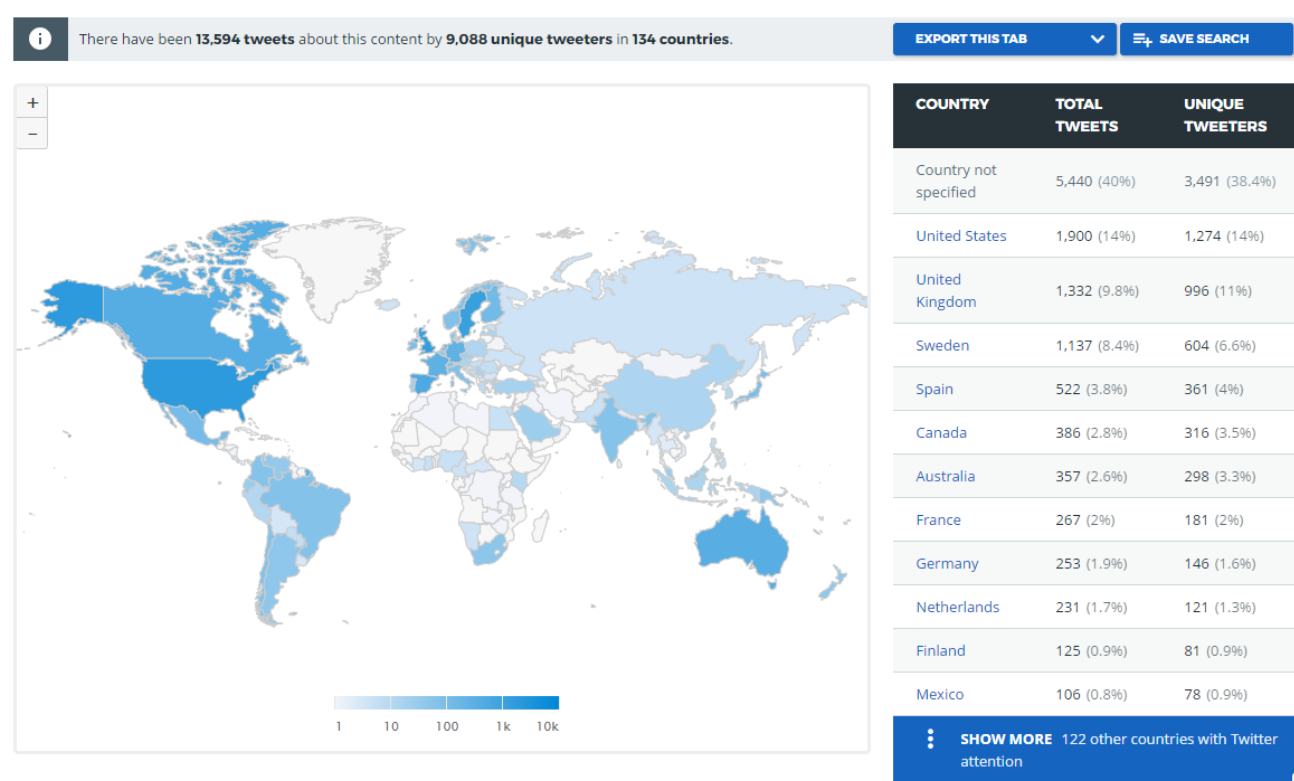


Figure 2: Where Springer Compact articles have been tweeted. Screenshot from Altmetric.com.

When looking at from where in the world articles were tweeted, tweets' top countries of origin were the United States, the United Kingdom, Sweden, Spain, Canada, Australia, France, and Germany, for the SC sample (Figure 2). The control sample showed similar results. The SC articles were tweeted from 134 unique countries while the control sample articles were tweeted from 64. This might suggest that OA research has a wider geographical outreach than research results presented behind paywalls. Limitations in data (the limitations mentioned above, and the added fact that 40 % of the SC tweets and 44 % of the control sample tweets could not be geographically located) make any conclusions uncertain.

5 Recommendations

Recommendations are accumulated through the interim reports, so some of the recommendations below have been mentioned in the previous reports. We recommend Bibsam to:

Follow existing recommendations

- Strive to meet the five OA principles of LIBER Europe for negotiating with publishers. The principle of Transparency for Licensing Deals: No Non-Disclosure has not yet been met. The Dutch have however consistently published their agreements online, without repercussions. We encourage Bibsam to do the same.
- Ensure that Springer Nature continues to comply with the recommendations set up by ESAC. Furthermore, improvements are needed 1) so that information about OA funding is included in the articles covered by the agreement, and 2) with regards to the metadata delivery to the paying institutions (Bibsam/individual institutions) and to Crossref, although good efforts have already been made in the metadata delivery area.
- We suggest that usage reports should follow the standard of Counter.³³

Collect data and support the continued development of recommendations

- Even though Springer Nature supplies data for the SC agreement, the Bibsam group is recommended to collect their own data in order to make their own analyses. This is regularly done in other countries, and the best practice for this may be exchanged. Collaborations in data analyses at the international level are key to counter publishers' current data advantage.
- Support the continued development of international standards and recommendations that limit costs, specify the best practices, and optimize workflows.

Include gold OA and transition information

The goal of agreements like this is to go from a system where subscribers pay for reading a journal into one where authors pay for publishing in a journal. The present agreement is a combination of the two where authors pay for publishing and subscribers pay for reading. Acknowledging that SC is a pilot we think that to move forward, gold OA journals must be included in future agreements, and all Springer Nature journals should be considered here. Also, the issue of flipping individual journals (from hybrid to OA) is unresolved. Bibsam should strive to establish flipping terms with Springer (and other publishers).

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- Since the last report, plan S has been launched. Hybrid publishing is one way to reach the goals of OA, according to Plan S, but it is not part of an OA future. This further highlights the need for publishers to have a clear transition plan.

Re-negotiate the terms

The recommendations below are made based on the following five premises:

1. The Swedish SC agreement rendered an increased cost of 42 %, as compared to if SC had not been signed and Swedish institutions continued paying to read alone. This calculation takes into account both a yearly price increase of 3 % and an increase in hybrid OA publishing without SC over the years 2016-2018. With a more conservative estimation of the Swedish hybrid OA publishing rate with Springer Nature, the cost increase is 51 %.
2. The Swedish agreement appears to be the least favourable when comparing it to the Dutch and the British agreements.
3. Gold OA journals on average have a lower APC than hybrid journals.³⁴ For the gold OA journals, the APC is expected to cover all costs involved. SC includes both a reading fee (to cover the non-hybrids covered in

³³ <https://www.projectcounter.org/about/> (2018-01-09).

³⁴ E.g. Solomon, D., & Björk, B.-C. (2016). Article processing charges for open access publication — the situation for research intensive universities in the USA and Canada. *PeerJ*, 4, e2264. <http://doi.org/10.7717/peerj.2264>. Figures given in Solomon and Björk were around 1,600 € for OA journal APCs and 2,400 € for hybrid journal APCs on average (conversion from USD made 2018-01-15).

the agreement) and a publishing fee based on APC list price. In the light of costs in gold OA journals, neither of these fees can be considered reasonable.

4. The Swedish SC agreement is oversized. According to the current publishing rate, the Swedish institutions are likely to publish 83 % of the allowed number of articles in the agreement.
5. The Swedish cost of oversize (1,348,600 €) is in the realms of what the Swedish Research Council and the National Library subsidised the agreement with (11.6 million SEK, about 1.1 million €).

Recommendations:

- Do not agree to use the current agreement's level of payment as a starting point for future negotiations with Springer Nature. The agreement both seems to be less favourable than those made by other consortia and includes a significant rise in costs compared to 2015.
- The Swedish current cost of oversize (1,348,600 €) is unreasonable and should be reinvested in a next agreement.
- Compare any future offset offer from Springer Nature to the deals signed in the Netherlands and the UK. A future Swedish agreement's total cost cannot differ substantially from the total cost in the latest Dutch agreement since the two countries are comparable.
- An agreement where costs are based on a pay-as-you-publish model or an agreement where no pre-paid lump sum is paid based on a fixed number of prognosticated articles is preferable. If pre-payment is included in a future agreement, a corridor should be applied in order to share risk-taking between publisher and participating institutions. That is, the publisher and the participating institutions agree on a minimum and maximum spend and if the participating institutions over-publish they do not pay more (the publisher's risk) and if they under-publish they do not pay less than the agreed (the risk of the participating institutions).
- The price of the APC should be negotiated to a lower price than list price, due to the volume of articles pre-paid in SC. A bulk payment should result in a discount.
- One way to compensate for if the cost is not substantially lowered would be if more journals are included in the agreement. Gold and hybrid journals from all of Springer Nature's portfolio should be considered.
- Keep 1) the guarantee to authors that they do not need to apply for APC funding, 2) the easy administration of the articles for authors and administrators, and 3) the ban on opting-out of the agreement for authors. These three factors have led to a significant increase in articles by Swedish authors that are published OA in Springer journals.

Review the institutional levels

The model used to divide the costs for the institutions according to six levels seems to work well for the institutions with the largest output of publications. However, for the institutions with fewer publications, yearly variations can have important implications for their cost per article. If payment is made afterwards, this can be adjusted for. However, the predictability of the costs will be lower.

Recommendations

- Consider reviewing how institutions are placed into levels and the consequences of level placement. It might be advisable to use data from several years to determine an institution's level.
- Consider a level for institutions that do not have (or expect to have) any publishing authors. On the one hand, their pricing seems unfair. On the other hand, they will benefit from a transition to OA in the future when they no longer must sign journal subscriptions to access scientific material and can therefore be argued to share the transitional costs.
- When constructing future cost distribution models, library budgets and other funds for APC payments within the university should be treated as one budget. The primary aim must be to first limit total costs, and after that redistribute funds as necessary.

Recommendations for Bibsam member institutions

We recommend all institutions to be more active in informing their researchers on their existing OA publishing agreements and discounts (see tables in section 1.3.4). The researchers urge you to do so. The evaluation has shown that researchers' knowledge of Creative Commons-licenses is scarce. In order to avoid misunderstandings, resources should be directed towards informing researchers about copyright, and Creative Commons in particular. Both the Swedish Research Council and Plan S support the use of CC-BY (not ND or NC). To achieve that, local informational campaigns and educational efforts are needed.