CREATING NEW PATHWAYS: THE SPRINGER NATURE AND JISC TRANSFORMATIVE AGREEMENT

Case study
FOREWORD

Having early and rapid access to research findings is fundamental to the advancement of science and discovery. As such, Springer Nature is committed to accelerating the adoption of open access (OA) publishing and of sustainable open science practices.

We have already demonstrated that OA can provide a range of benefits to the research community and wider society. In a recent analysis, gold OA articles were found to achieve greater reach and impact, with 1.64 times higher citations, 6 times more downloads and 2 times as high an Altmetric Attention Score compared to non-OA articles in hybrid journals on average.

Our commitment to transition to OA has resulted in the Transformative Agreement (TA), which allows for institutions to cover OA publishing costs for affiliated researchers whilst also giving access to journal subscription content, regardless of discipline, access to funding or career stage. Springer Nature’s national agreements, alongside our institutional deals, support researchers from over 2,650 institutions globally and enable over 41,000 OA articles a year to be made immediately available for all to read and use from the point of publication. As a result, TAs are driving fundamental changes in the way authors are publishing their research, and giving a radical boost to author uptake of OA. The somewhat hidden benefit of the TA model—around access to subscription content—also increases readership of non-OA content.

The Springer Nature/Jisc Transformative Agreement

Of Springer Nature’s 17 national TAs, the Springer Nature/Jisc TA in the United Kingdom (UK), piloting in 2016, was one of the first established in the context of growing awareness of OA, following the 2012 publication of the Finch Report and its recommendations for mixed models of OA publishing.

The UK TA with Jisc is a prime example of how Springer Nature works in partnership to build innovative solutions, with key objectives of enabling the UK in its transition to OA, and redirecting funds previously allocated to subscription-based reading agreements towards publishing fees for open access, whilst still ensuring access to a greater breadth of research.

The TA enables these objectives by streamlining processes, providing an opportunity and choice for authors to publish OA, and making savings for institutions. Data demonstrates that Springer Nature’s TAs can drive the OA transition, significantly increase the number of authors publishing OA to over 70%, and lead to a country-level ‘flip’.

25,000+
OA articles published in hybrid journals by Jisc members under the UK TA since launch
EXECUTIVE SUMMARY – KEY FINDINGS

Alongside the goal of increased OA output, the wider benefits of OA and of TAs are clear for research itself, as well as for participating institutions.

The Springer Nature/Jisc UK TA has resulted in:

- **Increased OA output**
  After a steep rise in OA publishing from 2015 to 2016 when the agreement launched, the annual publication of OA articles in eligible Springer journals increased by 12% compound annual growth rate (CAGR) between 2016 and the end of 2021. Authors choosing to opt out of publishing OA through this agreement decreased from 34.5% of the total number of OA articles published in 2016, to 4.6% in 2021. Over 25,200 OA articles have been published in hybrid journals by Jisc members under the UK TA since its launch.¹

- **Growth in usage of OA content**
  The usage of OA content by Jisc members, based on the reading list they subscribe to, had a 51% CAGR between 2016–2021.

- **Growth in usage of subscription content**
  86% of usage of articles under this agreement is from subscription articles, demonstrating the ongoing value of the TA to users. Usage of both OA and subscription content increased by 17% CAGR.

- **Constraining costs**
  The Springer Nature TA provided by far the largest amount of cost avoidance in 2017 (£5.8m) of UK transformative agreements, according to Evaluating UK offset agreements (2015–17), a report sponsored by Jisc.

- **Improved workflows**
  Feedback from participating institutions confirms that Springer Nature's significant investment in looking at institutions' experiences and tailoring processes to their requirements has led not only to positive experiences, but also saving institutions time due to more efficient and bespoke workflows.

- **Alignment to organisational strategies**
  Partners report that the TA helps them to promote their mission around the United Nations' Sustainable Development Goals (SDGs). It also aligns with organisational strategies of both Springer Nature and national level policy-makers.

¹This figure excludes publications in fully OA journals.
INTRODUCTION

Open research is integral to UK Research and Innovation (UKRI)'s mission to deliver economic and social benefit. Major funders including UKRI and Wellcome have signed up to Plan S, which requires that scientific publications funded by public grants must be published in OA journals or platforms from 2021.

This case study offers an overview of the impact and reach of the Springer Nature/Jisc TA in the UK over a six-year period. Through interviews and data analysis, this case study demonstrates the evolution of the UK TA to the end of 2021, discussing the benefits such partnerships bring to authors, institutions and funders of an agreement, and how TAs enable a sustainable transition to an open research future.

Since its inception with the pilot launching in 2016, the UK TA with Jisc has provided significant benefits for its users. Funders and consortia are moving closer towards their goals of increased OA article publication, and are seeing a reduction in the overall costs of OA. Partner institutions are benefiting from improved workflows and the easier tracking of costs. Researchers now benefit from both wide access to the research content they need, including OA and non-OA articles, alongside the opportunity to publish OA in their journal of choice.

The aims of the TA model are: to provide choice for researchers (in both accessing the research content they need, and in facilitating OA publishing); to reduce administrative barriers for institutions; and to constrain costs, with an increased transparency on the total cost of OA. The TA model is key in better supporting the drive towards OA, and in enabling greater sustainable OA options for research communities.

More specifically, the following key criteria underpin this agreement:
- Seamless access to licensed journal content on Springer Nature's content platform, SpringerLink, including Springer, Adis and Academic Journals
- Controlling escalating 'total cost of ownership/publication' (subscription + hybrid Article Processing Charges (APCs) + administration)
- Centralising the administration of disparate micropayments
- Transparent pricing and a clear model to present to research funders and stakeholders
- Promoting and encouraging national research output and OA publishing
- Accommodating funders’ mandates.

Jisc

Jisc is a not-for-profit organisation for digital services and solutions serving the UK's higher education sector. Springer Nature's partnership with Jisc began in 2016 with the launch of the UK pilot TA, known originally as the UK Springer Compact agreement. Following the pilot’s success, the agreement was renewed until the end of 2021 and subsequently extended until the end of 2022.

Jisc's evaluation of the pilot agreement from 2016–2018 shows increases in the publication of OA articles, and evidence of constraining costs. Furthermore, the simplicity of the process for authors and universities was said to be welcomed. Evidence from the pilot shows that there was a huge impact on OA transition within the region.
Methodology

The data analysis of this TA consists of two parts: usage and publishing. Firstly, the focus is on how Jisc members used the journals that they subscribe to in each year of the agreement between 2016–2021. This usage is reported using the COUNTER 5-compliant Total Item Requests metric. Usage for each year of the TA reflects the changes in the reading list titles and in participating members.

Secondly, for the publishing part of the agreement, the focus is on the number of OA articles in hybrid journals published by Jisc members under the TA by year of publication between 2016–2021. Also included is how the relevant articles, published between 2016–2021, have been used globally between 2019–2021. The global product-level reporting has been undertaken using the COUNTER 5-compliant Total Item Requests metric.

Limitations

1. A direct comparison of pre-agreement figures for usage and published content to figures subsequent to the launch of the Jisc partnership has not been undertaken. A direct matching of each participating institution to each of their journal subscriptions was outside the scope of this study. Furthermore, not all participating institutions joined in the same month or year.

2. The data source that connects usage to IP country/continents and recognised/anonymous usage only tracks data from 2019 so prior usage has not been reported on in this case study.
THE AGREEMENT IN NUMBERS

Since its launch in 2016 with 1,700 hybrid journals, the UK TA has evolved to include significant new content:

- Nearly 200 Springer journals were added to the TA over the 6 years from 2016 to 2021.
- 38 Academic Journals on nature.com were added in 2021, totalling nearly 2,300 titles by the end of that year. These are prestigious titles in a broad range of specialties for scientific communities or scientific societies.
- The MRS journals, a notable collection of materials science journals, were added as takeover titles to the agreement in 2021.
- Over 25,200 OA articles have been published in hybrid journals by Jisc members under the UK TA since the launch. This excludes any OA articles in fully OA journals as well as any OA articles outside of the agreement.
IMPACT ON THE COMMUNITY

The large research intensive institution, top 10 university in the UK (THE ranking)

“It’s been our benchmark agreement for all the other deals... It was done with some cost uplift but it seemed reasonable, and proportionate to libraries. Ever since it’s been an exemplary agreement because we’ve been able to measure other less good deals against it.”

- James Caudwell, Head of Electronic Collections, Cambridge University Library

Increased OA output

The small research institution

“OA enhances the number of people accessing their research. Our researchers are pleased as the agreement is facilitating publishing OA for them, and this is particularly beneficial at our research station in Africa, as it’s improved the way in to publishing where there has previously been no opportunity.”

- Anonymous UK librarian

The TA is providing a new OA route to publication for many researchers. In line with the aims of the agreement to facilitate an increase in OA output, the annual publication of OA articles in eligible Springer journals increased by 12% CAGR year on year between 2016 and the end of 2021, from 3,088 to 5,360. This does not include the initial impact of the new agreement which saw a dramatic increase in OA publication from 2015 to 2016. According to the Jisc analysis of the pilot agreement (2016–18), the number of OA articles published in Springer hybrid journals in 2018 was 74.4% of the total articles published in all Springer titles by eligible UK authors, up from 55.9% in 2016.
Number of open access articles by year of publication (YoP) 2016–2021

The Compound Annual Growth Rate (CAGR) of OA publication between 2016–2021 is 12% year on year

Source: COUNTER 5 Usage Data on Google BigQuery, COUNTER 5 Metric Total Item Request is comparable to COUNTER 4 Downloads; Publications Data from MRPA Files including YoP 2016–2021
The overall upwards trend in OA article publication is demonstrated across all types and sizes of institutions, showing the beneficial impact that centralised funding has made as a result of the agreement. For example, a large research-intensive university saw an annual increase of approximately 28% over that period, similar to that of a small teaching university, at approximately 27%.

Looking at disciplines, a broad range of subject areas has benefited from the centralised funding due to the TA. The impact on such a breadth of disciplines is significant especially for the Humanities and Social Sciences, where OA funding may be less readily available. In the 2018 case study *Gold open access in the UK: Springer Nature’s transition*, data showed that the Springer Compact agreement made a positive difference for UK authors in disciplines where gold OA publication has traditionally been more challenging. Between 2013 and 2016, the output of gold OA articles from UK corresponding authors publishing in Springer Nature’s Mathematics, Humanities and Social Sciences journals increased dramatically from 8–11% to 57–62%.

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### Top 10 Jisc institutions with the highest CAGR of OA articles between 2016–2021

<table>
<thead>
<tr>
<th>Jisc Institution</th>
<th>Number of Articles 2016–2021</th>
<th>CAGR of Articles 2016–2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Derby</td>
<td>67</td>
<td>63%</td>
</tr>
<tr>
<td>Birmingham City University</td>
<td>42</td>
<td>46%</td>
</tr>
<tr>
<td>Royal Holloway University of London</td>
<td>151</td>
<td>34%</td>
</tr>
<tr>
<td>Kingston University</td>
<td>65</td>
<td>34%</td>
</tr>
<tr>
<td>University of Chester</td>
<td>27</td>
<td>32%</td>
</tr>
<tr>
<td>University of Huddersfield</td>
<td>117</td>
<td>29%</td>
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<tr>
<td>University of Oxford</td>
<td>1,602</td>
<td>28%</td>
</tr>
<tr>
<td>London South Bank University</td>
<td>46</td>
<td>27%</td>
</tr>
<tr>
<td>University of Bradford</td>
<td>74</td>
<td>26%</td>
</tr>
</tbody>
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springernature.com
Growth in use of OA content

OA article usage by Jisc members based on the reading list they subscribe to increased by 51% on average year on year between 2016 and 2021. There was a 92% increase in usage in 2021 over 2020 alone. Of this increase, 4% is attributable to the addition of the Academic Journals in 2021 – otherwise growth is steady at 47%. This growth illustrates the real-world value of OA articles published under the TA.

Yearly development of hybrid OA article usage from TA reading list content

Source: COUNTER 5 Usage Data on Google BigQuery, COUNTER 5 Total Item Request is comparable to COUNTER 4 Downloads
Global accessibility to OA content

Globally, recognised usage only accounts for 27%; an additional 73% of usage of OA content was from anonymous users who have not been recognised by SpringerLink as authenticated users i.e. they originated from an IP address range not associated with a subscribing university. Anonymous usage cannot be directly ascribed to the ‘general public’ or ‘non-academic’ usage as a proportion of this will be off-campus or personal device usage by scholars—especially during the Covid-19 pandemic UK lockdowns in 2020 and 2021. Regardless, it does however confirm a previous study which found that OA increases ease of accessibility to research and can aid equity in access.

Growth in use of subscription content

86% of usage of articles under this agreement is from subscription articles. This shows the continuing value of the TA to users who have access to subscription articles included in the TA.

“The agreement increases the number of journals that we can offer researchers because we’re not a university and aren’t able to subscribe to a huge amount of content. So now our researchers have better access to Springer Nature content.”

- Anonymous UK librarian

Growth across subject areas

There was a year-on-year increase in the number of articles in all disciplines. It is encouraging to see that the number of Humanities and Social Science articles is also growing alongside those in Science, Technology and Medicine.

In a conversation with the University of Essex Library, they highlighted the importance of the read aspect of the agreement as it has opened up access to the Springer journals, in particular for Maths and the Social Sciences.

“There has definitely been a wider subject take up of the Springer content. Prior to 2016, most use was by our Science, Technology, Engineering and Maths students and staff, however we now see the same proportion of use by our Faculty of Arts and Social Sciences (FASS).”

- Alison Brock, eContent Advisor, Open University
Constraining costs

Many institutions of different types report cost savings after joining the TA, including Cambridge University Library and the University of Essex Library.

“The large research intensive institution, top 10 university in the UK (Times Higher Education ranking)

“It’s saved us a lot of money. The cost avoidance through the Agreement in 2020 for Cambridge was £590,457, which shows the Agreement is value for money.”
- James Caudwell, Head of Electronic Collections, Cambridge University Library

The comparative value of the UK TA with Jisc is highlighted in a report sponsored by Jisc on the value and future of Transformative Agreements. The combined value of offset agreements to the UK higher education sector over the period 2015–17 was an estimated £19.5m, comprising £2.5m in 2015, £8m in 2016, and £9m in 2017. Some agreements reduce the total cost of publication (TCP) more than others, with the Springer Nature TA providing by far the largest amount of cost avoidance (£5.8m in 2017) while also proportionally reducing the TCP by the highest amount (43% in 2017).

“The large public research university

“We carry out a basic performance review of our collections each year to check their cost per download, and trends within year and between years, it is this that has shown the growth in number of downloads, consequently our cost per download has halved, as well as the increase in use by FASS.”
- Alison Brock, eContent Advisor, Open University
Improved workflows

Many libraries participating in this TA report a reduced administrative burden after joining, thereby saving time for library staff. It also facilitates the work of researchers who are encouraged to make use of their institution's easy route to publishing under the TA.

Springer Nature endeavours to fully understand user needs and heavily invests in actively seeking feedback from participating institutions and from authors, in order to identify pain points to provide a more tailored user experience. This has so far included:

- responding to feedback from authors, institutions and consortia
- developing a bespoke payments and rights dashboard for both institutions and authors
- improvements to more easily identify which authors are covered by the agreement
- a focus on improving usability through search functions and reporting.

“Having the agreement has made things easier for us in many respects. A single agreement covering all of a publisher’s titles means we don’t need to handle a large number of individual renewals. The inclusion of the majority of Springer titles does mean we are not having to make extra payments for new titles or takeovers/transfers each year, which makes renewal much less complicated. When publishers only offer some of their titles in an agreement and want to handle transfer titles separately it can make it difficult to manage and evaluate, let alone the complications of explaining which titles authors can submit to and whether they will have an APC covered.

“In terms of OA payments, this particular agreement has been relatively easy to manage. When it was offered, we took the option to offer default open access for our authors, which means the system automatically assumes they are publishing open access and they are not offered the option to opt out. The ease of submission, especially the default OA, does seem to have made the article submission process easier than we have found with some other publishers.”

- Alison Brock, eContent Advisor, Open University
Alignment to organisational strategies

UKRI states that open research is integral to its mission to deliver economic and social benefit. Accessible, transparent, reproducible and cooperative research underpins quality and efficiency in the research process, and ensures research outputs are readily shared.

Springer Nature’s SDG Programme aims to connect researchers who are tackling the world’s toughest challenges with practitioners in policy and business who use research insights to achieve their goals in improving the world. The TA is helping achieve this aim by making such content more visible and accessible to communities throughout the world.

Between 2019-21, the number of OA articles assigned to the SDGs published by authors affiliated with participating institutions shows an increasing trend with an overall CAGR of 13%. Usage of those OA articles assigned to the SDGs generated 11,473,802 Total Item Requests, with a CAGR of 46% for the same time period.

The small research institution

“The agreement has helped us in aligning with the SDGs which is part of our mission.”

- Anonymous UK librarian
The Springer Nature/Jisc UK Transformative Agreement has not only enabled growth in OA output, but also growth in usage. It has simplified the publishing and reading process with streamlined workflows for authors who want to publish OA articles, and reduced friction for those wanting to access both OA and non-OA content. More efficient workflows benefit librarians managing these agreements, resulting in the potential for cost constraints for their affiliated institutions. All of this has been achieved by working together with Jisc and its member institutions.

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The large research intensive institution, top 10 university in the UK (Times Higher Education ranking)

“IT's exemplary. It's been our benchmark agreement, because we've been able to measure other less good deals against it.”

- James Caudwell, Head of Electronic Resources, Cambridge University Library

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Springer Nature continues to work with Jisc and the sector in the anticipated inclusion of new titles and imprints in furthering the reach and impact of UK OA publishing.

The existing Springer Nature/Jisc UK TA presented in this case study will meanwhile continue to expand with new members and meet the needs of users. Springer Nature will continue working to improve workflows and user experience through in-depth interviews, and meeting new policy requirements as they come in.

The Springer Nature/Jisc UK TA has created benefits for institutions, researchers and thus funders in achieving their mission to transition to an open research future. It has also helped Springer Nature progress its mission to provide equity of access by facilitating the transition to OA.

Thank you to all Springer Nature staff and contributors to this case study for their support.