Open access to research publications - 2018

Independent advice

Professor Adam Tickell Vice-Chancellor, University of Sussex Chair of the Universities UK Open Access Coordination Group

June 2018

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1. Executive Summary

The UK has an enviable track record in producing excellent research and scholarship. Since the publication of the Finch Report in 2012, research funders, publishers and universities have been committed to publishing journals. During this period, major advances have been made, both in terms of the share of publications in Open Access journals and articles and in terms of the complicated – and often unglamorous – underpinning infrastructure. Members of the UUK Open Access Coordination Group have worked tirelessly and effectively, through specialist sub-groups, and developed measures that have removed many of the barriers to Open Access publishing.

This report provides an overview of the benefits of Open Access publishing and details the ways in which the United Kingdom has been at the forefront of the Open Access movement. Over half of research publications can be read for free online and I anticipate that this will rise, such that the Government's aspiration that all publicly-funded research is available in this form if the current funding is maintained.

As anticipated in the Finch Report, such progress has come at additional financial cost and whilst there has been some important experimentation, a transformation of the publication model – from subscriptions to charges for Open Access – has not materialised. Both the Wellcome Trust and UK Research and Innovation are currently reviewing their approach to Open Access.

The UK's leadership in supporting Open Access has been taken up with enthusiasm in other countries and by major global philanthropic funders of research. This is testament to the influence of the Finch Report, but I note that there is a range of different approaches being taken to achieving the shared aim of global Open Access to research.

In order to ensure that this aspiration can be met, however, universities and funders need to be committed to supporting Open Access further. I have therefore made a set of recommendations to achieve this.

2. Summary of recommendations

The key recommendations of this report are arranged by stakeholder group, below.

For funders of research:

- If the current national 'policy preference for Gold OA' continues, the RCUK block grant for supporting open access should continue to be provided by UKRI beyond 2020. However, UKRI with sector leaders, should consider the options available to ensure the block grant is able to be used in ways which deliver the maximum value for the public pound. (Recommendation 5)
- 2) UKRI, the National Funding Councils and sector leaders should work together to articulate a clear, UK-wide policy ambition for Open Access for the next five years, with a focus on achieving open access as the default publication option, delivering financial sustainability for research performing organisations, and value for money on public investment in research. This should be underpinned by a coherent and harmonised UKRI policy on open access. (Recommendation 6)
- 3) Funders of research should jointly commission further research to monitor the transition towards Open Access every two to three years. This should assess the impact of the various mechanisms being introduced to help shape a more effective market (such as off-setting arrangements), alongside a review of the implementation of the voluntary good practice guide and code of conduct. (Recommendation 12)

For university leaders and agencies:

- UUK, with partner organisations, to encourage universities to sign-up to the San Francisco Declaration on Research Assessment (DORA), or to adopt internal policies which are aligned to the same ambitions. (Recommendation 1)
- Jisc Collections, in collaboration with sector leaders, should consider the role of a range of Licensing and Copyright arrangements in delivering OA objectives, as part of a suite of levers available to leaders of a diverse range of institutions (Recommendation 9).
- Jisc to lead on selecting and promoting a range of unique identifiers, including ORCID, in collaboration with sector leaders with relevant partner organisations.

Funders of research to consider **mandating** the use of an agreed range of unique identifiers as a condition of grant. (Recommendation 8)

7) Jisc, with the support of sector leaders, to set out a roadmap for developing a suite of tools which, as far as possible, **reduce the burden of administration** underpinning open access for institutions. This might include a focus on the automatic exchange of information between publishers and institutions, and should be complemented by providing greater levels of information to institutional leaders on their OA options and performance, whilst supporting appropriate levels of optionality in publisher-institutions arrangements, in order to suit the needs of a diverse sector. (Recommendation 7)

Sector-level journal negotiations:

- University leaders should be more regularly and more fully engaged with regarding sector-level Journal negotiations and, once ambitions are articulated, should be publicly announced. (Recommendation 2)
- 9) As a matter of public interest, greater transparency around the outcomes of journal negotiations should be delivered, and information shared as fully as possible with sector leaders and international partners as a minimum. (Recommendation 3)
- UK negotiators should pay close attention to the outcomes of the impasse between German universities and Elsevier over proposals for a 'Publish and Read' model (Recommendation 4)

Policy advice and development:

- 11) The UUK OA Coordination Group's **Open Access Monographs** working-group should continue its work under UKRI sponsorship. (Recommendation 11)
- The UUK Open Access Coordination Group working groups on OA Service Standards, OA Efficiencies and OA Repositories will submit findings and proposals to funders of research, UUK and Jisc, for consideration in next steps. (Recommendation 10)
- 13) Recognising that the UUK Open Access Coordination Group has reached the end of its period of operation, sector leaders, funders and Jisc should continue to work together and engage with professional groups, to coordinate activities, and to steer the sector towards achieving OA ambitions. (Recommendation 13)

3. Introduction

- 3.1 This document presents a refreshed evidence base and details of independent advice from Professor Adam Tickell, Vice-Chancellor of the University of Sussex and Chair of the Universities UK Open Access Coordination Group, to the Minister for Universities, Sam Gyimah MP, following a letter of request from his predecessor, Jo Johnson MP, dated 13 November July 2017.
- 3.2 In his letter, the Minister invited me to provide updated advice regarding open access in the UK, building on my last independent advice in 2016. In particular, I have been asked to respond to the following questions:

Is the UK on track to have almost all of its scientific outputs published through open access by 2020?

• Progress towards the 2020 target set by Jo Jonson MP in 2016, rising from 18% of publications available via OA after 24 months in 2012, to 54% of publications in 2016. This represents a growth of around 30% per year, which if it were to continue, places the UK on firmly track for publishing all scientific outputs via open access by 2020. (Section 5-i)

Does the UK's preference for Gold open access remain realistic and affordable, in the short and the medium term, and in the context of international trends?

- The UK's "strong preference for Gold" open access is certainly realistic, should there be a strong enough political and public imperative to maintain the current approach – the rate of Gold open access publishing has grown from 13% in 2012 to 30% in 2016, demonstrating the responsiveness and adaptability of the research base to this policy context. (Section 5i).
- The extent of the affordability of the "strong preference for Gold" is becoming clearer, however, as the associated evidence base has been improved over recent years. Costs associated with APC payments are continuing to rise at levels above inflation each year, although negotiations to deliver offsetting arrangements may be having some impact in constraining total cost increases. There is nonetheless a significant question around the effective use of public funds associated with this policy preference, under current arrangements. (Sections 5-vi and 6)

Are Gold open access charges reducing over time in a healthy, competitive market, and has there been progress in offsetting arrangements?

- Although negotiations to secure off-setting deals with hybrid journals appear to be having some effect on containing cost increases, the APC market does not appear to be as responsive or elastic as one might expect to find in a healthy, competitive market. The average APC payment appears to have risen by 16% between 2013 and 2016, to £1969. APCs for hybrid journals have risen by 14% to £2095 in 2016, whilst full-OA journal APCs rose by 33% to £1640. Some of this inflation is an artefact of dollar pricing (Sections 5, 6)
- Offsetting deals may be having some impact by reducing the rate of increased APCs in hybrid journals, estimated at £2.5million in savings in 2015. However, total subscription payments also appear to be increasing fast by 20% between 2013 and 2016 (at a sample of seven publishers). (Section 5-v, vi)

Is the open access market developing appropriately, in response to the UK's mixed approach to routes to OA, and delivering value for the public pound?

- At a high level, the journal market appears to be responding to the OA policy agenda, by making more OA publishing options available to authors. Analysis of journals published by 40 publishers suggests that fully-OA journals rose by 11% between 2015 and 2017, whilst hybrids increased by 17%. Subscription-only (non-OA) titles fell by 37%, and now represent only 9% of all titles from these publishers, as compared with 15% in 2015. (Section 5-iv)
- There appears not to have been a significant change in the market concentration of the major publishers, no significant widespread 'flip' of publisher business models towards full OA from subscription and, as of yet, no significant transformative effect arising from new entrants to the publishing market. (Section 6)

Is there progress toward aligning open access policies, so that compliance and monitoring are straightforward?

• Although there have been slight clarifications around the major policy mandates of the funders of research since my last advice, differences remain, particularly around embargo periods. Further harmonisation would help to

simplify the landscape for all stakeholder groups and reaffirm ambitions. (Section 6)

- There is no simple alignment and there is a diversity of approaches, reflecting the bespoke needs and priorities of a diverse higher education sector.
 However, the mandates of UKRI bodies and the Wellcome Trust have been highly influential. (Section 5-i)
- Journal policies, whilst coalescing around greater options of open access publication, appear to be highly diverse. For example, and at a high level, policies for green open access – posting articles on websites, repositories and elsewhere – are becoming more complex, especially in relation to scholarly collaboration networks such as Research Gate. (Section 5-iv)

Are the significant financial and policy differences between stakeholders you highlighted in your earlier advice still present and, if so, what effect are they having?

- Whilst the UUK Open Access Coordination Group (OACG) has been effective in maintaining the consensus between stakeholders, the consensus is becoming stretched. There are significant financial and policy differences between stakeholders and whilst there is real collaborative innovation and engagement, the differences remain real and may have widened. (Section 6)
- The total costs of OA and journal subscriptions have been increasing above inflation, which is contributing to wider pressures on research and library budgets, and pockets of dissatisfaction. There is a need for all stakeholders to focus on driving efficiency through changes to policy, processes and coordination, to deliver greater value for all. (Section 6)

Are there any significant challenges ahead in transitioning to open access in the UK, and how would you recommend that these are best met?

The higher education sector has responded very positively to the policy preference of the UK government, and is delivering world-leading levels of open access publishing. However, the financial implications of the current arrangement appear to be unsustainable in the medium to long term. (Section 6)

- The current 'preference for 'Gold', where an author pays a fee for a paper to be available freely to anyone in the world, is expensive and there is a need for clarity as to whether the UK should maintain this approach. (Section 6)
- There is a pressing need for stakeholders to work together, to understand the policy levers available and recognise the complex market-behaviour at play around scholarly communications. All stakeholder groups should work together to create a policy context which can be defended as fit for purpose. (Sections 6, 7)
- 3.3 This advice is given in a personal capacity. It is informed by primary evidence from the sector, research commissioned on my behalf by UUK, and written submissions from, and discussions with, various individuals and stakeholder groups from across the UK.

4. Scholarly communication: background and the transition to OA

- 4.1 The UK research base is unrivalled for its broad-based excellence, evidenced not only by the results of the Research Excellence Framework 2014, but also through systematic international comparative research.¹ It is also one of the most efficient, effective and productive science and research ecosystems in the world.
- 4.2 Despite representing a small global share of research investment and only 4.1% of researchers, UK research accounted for 9.9% of global downloads, 10.7% of citations and 15.2% of the world's most highly cited articles. Central to this success, are the world leading institutions which perform research across the UK research base. The majority of publicly funded research activity takes place in universities, which the Prime Minster has referred to as "jewels in Britain's crown."²
- 4.3 Scholarly communication plays a key role in the dissemination and impact of UK science. The journal market has grown into a significant global industry, and constitutes a notable export market for the UK.³ In 2016, Universities spent approximately £210m on the total costs of publication, of which £50m is estimated to be spent on Open Access charges.⁴ These costs are primarily paid either from 'QR' or from competitively won research grants from UKRI.
- 4.4 However, while there may have been innovations in presentation and delivery of scientific knowledge, business models surrounding journals have proven less dynamic. It is in this context that the OA agenda has emerged.

¹ See UK field-weighted citation index in BEIS (2017) International Comparative Performance of the UK Research Base 2016. London: BEIS, p. 4, 8

² Teresa May, speech (2018) "The right education for everyone" 19 February 2018. Available: <u>https://www.gov.uk/government/speeches/pm-the-right-education-for-everyone</u>

³ Overall book and academic journal sales have risen to £4.8billion in 2016 (from £4.3billion in 2015) with digital revenues up by 6% to £1.6billion between 2015 and 2016, steady at 35% of the overall total. Export sales now have risen from 44% of revenue in 2015 to 54% in 2016, representing £2.6billion. Available: <u>https://www.publishers.org.uk/media-centre/news-releases/2017/uk-publishing-sector-star-export-and-productivity-performer/</u>

⁴ Universities UK (2017) Monitoring the transition to Open Access, 2017 Annexe 2: Financial projections. Available: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

What is Open Access?

- 4.5 At the heart of Open Access is the principle that research outputs should be available freely, without restrictions on access or reuse, such as cost barriers or onerous copyright constraints.⁵
- 4.6 Open Access publishing, by improving access to information and knowledge, promotes: ⁶
 - the public benefit arising from publicly funded research
 - enhanced transparency, openness and accountability, and public engagement with research;
 - closer linkages between research and innovation, with benefits for public policy and services, and for economic growth;
 - improved efficiency in the research process itself, through increases in the amount of information that is readily accessible, reductions in the time spent in finding it, and greater use of the latest tools and services to organise, manipulate and analyse it;
 - increased returns on the investments made in research, especially the investments from public funds; and
 - the creation of a new model of scholarly communications.
- 4.7 The UK began the transition to OA early, when Parliament recommended a shift to OA publishing in 2004⁷. The Wellcome Trust (the second largest charitable funder of scientific research in the world) began mandating that all its funded research should be made OA from April 2005.⁸

⁷ Select Committee on Science and Technology Tenth Report (2004). Available:

http://www.publications.parliament.uk/pa/cm200304/cmselect/cmsctech/399/39903.htm ⁸ Wellcome Trust Open Access policy Available: <u>https://wellcome.ac.uk/funding/managing-grant/open-access-policy</u>

⁵ Finch, Janet et al (2012), Accessibility, sustainability, excellence: executive summary, RIN. p.10. Available: https://www.bera.ac.uk/wp-content/uploads/2013/12/Finch-Group-report-executivesummary-FINAL-VERSION.pdf

⁶ Finch, Janet et al (2012), Accessibility, sustainability, excellence: executive summary, RIN. p.10. Available: https://www.bera.ac.uk/wp-content/uploads/2013/12/Finch-Group-report-executivesummary-FINAL-VERSION.pdf

- 4.8 In practice, initial progress in implementing OA was slow, as a wide range of stakeholders were defensive about their material and perceived interests. Crudely, there are three different sets of interests:
 - Universities and other research institutions. These both produce the content for, and purchase, research. Broadly, university leaderships and university academics, see reputational and scientific benefit from Open Access; but seek to minimise the costs associated with publication;
 - **Funders,** such as the Research Councils, the Funding Councils and the Wellcome Trust. Funders in the UK see widespread dissemination and the costs of publication as being integral to the research process; and
 - **Commercial publishers and Learned Societies**. The UK is home to a significant constellation of publishers and Learned Societies. Both are a fundamental part of the research ecosystem and contribute to invisible exports. These organisations seek to maximise income from their intermediation activities. Some have fundamental concerns about implications of OA to the long-term sustainability and viability of academic publishing.

Establishing the policy framework in the UK

- 4.9 OA policy development in the UK gained transformative impetus with the 2012 report by Professor Dame Janet Finch.⁹ This recognised that the traditional research communications system was becoming "increasingly unsustainable as a result of the economic, technological and social changes."¹⁰
- 4.10 The Finch Report sought to balance the different interests of the three principle stakeholder groups, and in doing so, the report recommended a mixed economy of 'Gold' and 'Green' routes to OA by which:
 - 'Green' Open Access refers to publications which are placed in institutional or subject repositories, often after a publisher imposed embargo period. Publishers often impose copyright and re-use restrictions on such publications;
 - **'Gold' Open Access** refers to publications where 'Article Processing Charges' (APCs) are paid to the publisher, in return for immediate and unrestricted access to the full text to anyone in the world.
- 4.11 Finch concluded that pursuing Gold over Green should ultimately be the preferred practice in delivering the full benefits associated with OA, of improved 'transparency and accountability, engagement with research and its findings, closer linkages between research and innovation, and improved efficiency in the research process itself'.¹¹
- 4.12 There is the potential for a significant 'free rider' problem with Open Access. Open Access publications are, by definition, freely available. As long as the standard model of subscription publishing prevails, the costs of Open Access disproportionately fall both on countries in the vanguard (in this case, the UK) and research-intensive universities. Although Finch recognised that the UK may end up with higher costs, the

⁹ Finch, Janet et al (2012), Accessibility, sustainability, excellence. RIN. Available: <u>www.acu.ac.uk/research-information-network/finch-report-final</u>

¹⁰ Finch, Janet et al (2012), Accessibility, sustainability, excellence: executive summary, RIN. p.10. Available: <u>https://www.bera.ac.uk/wp-content/uploads/2013/12/Finch-Group-report-executive-summary-FINAL-VERSION.pdf</u>

¹¹ Finch, Janet et al (2012), Accessibility, sustainability, excellence. RIN. p12. Available: <u>www.acu.ac.uk/research-information-network/finch-report-final</u>

expectation was that UK leadership would help to lead to a transformation that other countries would emulate.

4.13 In his response to the Finch Report, the Minister, David Willetts, endorsed the recommendation for a mixed economy, as a transitory arrangement towards Gold OA as standard.¹²

Initial responses – and the five-year 'transition'

- 4.14 However, although Finch was carefully balanced, it did not meet universal approval. Some leading universities believed that Gold Open Access represented an unfunded commitment at a time of significant budgetary pressures, whilst some Learned Societies believed that 12-month embargo periods for Green Open Access papers would undermine journals in the humanities and social sciences, where dissemination models are markedly different from the physical and life sciences.
- 4.15 To mitigate these concerns, considerable work was undertaken to ensure that principal policy objective that of widening access to publicly funded research could be met with minimal difficulties. This approach included:
 - Stimulus funding for Gold OA: The Research Councils top-sliced their budgets to provide particular support for the most research-intensive institutions, in recognition of the fact that the financial burden fell most heavily on them. These funds circa £22 million a year could be used both to purchase Gold Open Access and to build institutional repositories. RCUK (now UKRI) has more recently confirmed that the 'block grant' will continue for institutions to 2019/2020;¹³
 - Variable embargo periods for Green OA: Embargo periods for Green Open Access publications were allowed to vary depending on the broad disciplinary area of a journal; and

¹² Letter to Professor Dame Janet Finch from David Willetts MP (January 2014). Reported: <u>https://www.timeshighereducation.com/news/willetts-calls-for-publisher-offsetting-to-encourage-open-access/2010971.article</u>

¹³ UKRI, open access block grants <u>https://www.ukri.org/funding/information-for-award-holders/open-access/open-access-policy/open-access-block-grants/</u>

- Broad endorsement of the mixed economy and parameters for Gold and Green: The Publishers Association published a 'Decision Tree', endorsed by all parties, stating that Green Open Access was acceptable if no funds were available for Gold (Annexe 1). Minister David Willetts gave his approval to the adoption of the Decision Tree in 2013.
- 4.16 Both the Research and Funding Councils implemented Open Access mandates which have led to significant changes in behaviour.
 - **Research Councils UK** introduced a revised and central OA policy, replacing pre-existing policies of individual research councils, to take effect from April 2013. The policy has since been supplemented by additional guidance and clarification, in the form of an FAQ document, published in September 2017 and remains the current approach of UKRI.¹⁴
 - In March 2014, HEFCE (in collaboration with the devolved funding Councils) announced that, to be eligible for submission to the next REF, almost all publications must be made open-access.¹⁵ The REF OA policies have also received updates to guidance over time, most recently in April 2018.¹⁶
- 4.17 These mandates mean that almost all publicly funded research will be Open Access, and evidence suggests that the mandates are proving effective in driving behaviour across the sector¹⁷. Research England and their counterparts in the other nations are agnostic as to whether this should be in Gold or Green form, whilst the research councils currently have a preference for Gold. UKRI are currently undertaking a review and this is likely to lead to a harmonised approach.
- 4.18 Recognising that funder mandates are but one policy lever, the "Finch settlement" called for all parties to work together to deliver a marked increase in Immediate Gold Open Access, underpinned by considerable investment by RCUK via top sliced block

- ¹⁵ HEFCE Open Access Policy: <u>http://www.hefce.ac.uk/pubs/year/2016/201635/</u> ¹⁶ HEFCE Decisions on staff and outputs (2017/04)
- http://www.ref.ac.uk/publications/2017/decisionsonstaffandoutputs.html paras 37-40

¹⁷ Compliance rate with the HEFCE REF policy has risen over time and is now at approximately 80%. HEFCE Decisions on staff and outputs (2017/04)

http://www.ref.ac.uk/publications/2017/decisionsonstaffandoutputs.html para 37

¹⁴RCUK Policy on Open Access, FAQs. Available: <u>https://www.ukri.org/files/legacy/documents/oa-faqs-sept-17-pdf/</u>

grant. With funding made available, it was time to develop infrastructure, communicate and deliver greater amounts of OA publications in partnership.

- 4.19 In order to ensure that progress continued to be made, Universities UK agreed to a request from David Willetts to convene the UUK Open Access Coordination Group (OACG), which I have had the pleasure of chairing. This group has representation from all the principle stake holding communities, and was established in May 2014. The remit of the UUK Open Access Coordination Group is to:
 - Develop and interpret the data and evidence base on the implementation of open access in priority areas;
 - Coordinate related research and activity being undertaken by stakeholders;
 - Commission research to fill gaps in the evidence;
 - Provide advice on policy and the direction of implementation of open access; and
 - Provide advice on the coordination and development of open access infrastructure.
- 4.20 In practice, and complementing these objectives, the group was established with a tacit role in maintaining a consensus on the Finch settlement, as endorsed by David Willetts, then Jo Johnson and Greg Clark, so that the policy intent of Finch might have the necessary lead in time be realised.
- 4.21 To this end, the group has been successful. However, as I shall turn to, such success has been delivered at a significant financial cost, and there has not been the transformation in publishing models as was arguably intended from the policy approach.
- 4.22 Following my previous advice to Jo Johnson MP, the OACG received the endorsement of the Minister to continue its work, and to establish four working groups under its auspices, to investigate and, where appropriate, make recommendations for implementation and further development. I am very grateful to those in the OACG and

the working groups who have dedicated significant time, expertise and passion in creating a rich resource base and a raft of recommendations to be taken forward.¹⁸

More recent responses – and a wave of 'reviews'

- 4.23 As OA is a global and multifaceted endeavour, there have been a wide range of activities and initiatives since my last advice. Some particularly noteworthy developments include:
 - Funder policies have received updates or clarifications, (eg Gates Foundation, HEFCE, RCUK)
 - There have been discussions around a proposed model 'Scholarly Communications Licence' for the UK¹⁹, with a small number of universities currently considering implementation.
 - Several new services have also come online such as Unpaywall²⁰ and the Jisc Publication Router²¹– designed to help researchers identify OA content held in institutional and subject repositories.
 - The Wellcome Trust has launched a funder-led publishing platform Wellcome Open Research²² launched in October 2016.
 - The Bill & Melinda Gates Foundation, launched a free-to-access site, Gates Open Research²³, in autumn 2017.
 - The Australian Federal Government recently confirmed its support of the recommendation for a national (and states and territories) OA policy in its response to the Australian Productivity Commission report on IP.²⁴
 - The EU announced an ambition to have all publicly funded research made available by OA by 2020²⁵, and have a number of activities investigating how this might be best achieved.
- 4.24 Recently, there have been a range of announcements of various organisations conducting a 'policy review' of the experience of the policy environment to date, to varying extent.
 - UKRI have announced an Open Access policy review

¹⁸ See annexes 6, 7 and 8

¹⁹ ukscl.ac.uk/

²⁰ unpaywall.org/

²¹ pubrouter.jisc.ac.uk/

²² wellcomeopenresearch.org/

²³ gatesopenresearch.org/

²⁴ Australian Government Response to the Productivity Commission

Inquiry into Intellectual Property Arrangements (2017). Available:

www.industry.gov.au/innovation/Intellectual-Property/Documents/Government-Response-to-PC-Inquiry-into-IP.pdf

²⁵ European Council, Conclusions on the transition towards an open science system. Available: <u>http://data.consilium.europa.eu/doc/document/ST-9526-2016-INIT/en/pdf</u>

- The Wellcome Trust is currently reviewing the OA policies associated with its research grants²⁶
- RLUK, SCONUL and other organisations have hosted or are planning to host meetings and events, which consider the challenges and opportunities of the policy environment, from the perspectives of their stakeholders.²⁷²⁸

About SciHub

Adapted from: UUK (2017) Monitoring the transition to open access. p18

SciHub is an illegal academic file-sharing site founded by a Russian graduate student in 2011. It has become a widely used and highly controversial part of the online scholarly information landscape. The site functions as an online search engine with over 55 million articles available for download, bypassing publisher paywalls. New papers are uploaded daily when accessed through educational institution proxies, and papers stored in the LibGen repository. Recent analysis shows that Sci-Hub hosts version of record copies of practically all subscription-based publications since 2015, and also large portions of earlier literature. Analysis of Sci-Hub usage data shows that users come from all parts of the world, including countries in which subscription access is widely available. Downloads from the UK are in line with the global average, relative to population size.

Subscription-based publications added to Sci-Hub are harvested illegally using the access credentials of legitimate users, but despite legal injunctions and ongoing court proceedings (at the time of writing), Sci-Hub remains available to users in much of the world. Owing to its illegal nature, accessibility via Sci-Hub is not included in any of the analysis of this report.

²⁶ <u>https://wellcome.ac.uk/news/wellcome-going-review-its-open-access-policy</u>

²⁷ RLUK annual conference 2018 (accessed March 2018) <u>http://rlukconference.com/programme/</u>

²⁸ https://www.sconul.ac.uk/event/sconul-content-forum-2018-beyond-finch

5. Progress towards Open Access in the UK

- 5.1 In 2016, I reported that there had been considerable progress in the transition towards OA in the UK since the Finch Report. In the last two years, progress has accelerated. The UK is now well on track to deliver almost all research outputs via open access by 2020, and is world leading in OA publishing rates.
- 5.2 There has been considerable progress in the transition towards OA in the UK since the Finch Report and the UK is making more progress towards accessible science than any comparable nation. With support from funders (notably the Wellcome Trust, the Research Councils and the EU's FP7 pilot 'OpenAire'), as well as individual institutional initiatives, an estimated 30% of UK authored publications are now published in Gold Open Access form.²⁹
- 5.3 For over five years, UK national policy has been to pursue both Green and Gold routes, supported by funding from RCUK to assist with what were intended to be transitional costs, as Open Access replaced the subscription publication model.
- 5.4 Reflecting on the five years since this policy ambition was embarked upon, there are multiple ways in which we can consider the 'progress' of a 'transition' towards Open Access in the UK, which we can consider in turn.
 - Are more UK research outputs being made openly available to the world?
 - Is Open Access increasing the usage of research, in comparison to non-OA?
 - Are institutions building infrastructure and processes to support OA?
 - Are publishers responding to the OA policy imperative?
 - Have *negotiations* between sector leaders and publishers resulted in an increase in off-setting agreements of APC vs subscriptions?
 - Are off-setting agreements proving effective in constraining total costs?
 - How does the UK compare in an international context?

²⁹ See Annexe 3 'Growth of OA publishing in the UK' for more information.

Are more UK research outputs being made openly available to the world?

- 5.5 The primary objective under the 'Finch' settlement is to increase the proportions of UK research output available via open access. Against this simple metric, the UK research base has rapidly shifted its publishing profile to greater levels of open access publishing, and now far exceeds global averages (Figure 1).
- 5.6 UK universities now make 54% of all research outputs available via Open Access after 12 months in 2016, with 30% being made available immediately at the point of publication – up from 13% immediate OA in 2012³⁰. This marks a significant growth and a step change in policy, process and culture within the UK research base.

Figure 1: Prevalence of journal article publishing via Gold, Green* and traditional (non-OA, subscription only) routes after 24 months, for UK and World, 2012-2016³¹



- 5.7 UK universities now make 54% of all research outputs available via Open Access after 12 months in 2016, with 30% being made available immediately at the point of publication – up from 13% immediate OA in 2012³². This marks a significant growth and a step change in policy, process and culture within the UK research base.
- 5.8 The rapid rate of growth suggests that the policies of funders such as RCUK, HEFCE and the Wellcome Trust are being complemented by individual universities' policies.

³¹ Universities UK (2017) Monitoring the transition to Open Access, 2017. Accessed:

³⁰ See Annexe 3 'Growth of OA publishing in the UK'

http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-openaccess-coordination-group.aspx. *NB: 'Green' OA includes 'delayed OA', also sometimes referred to as 'Bronze OA', where publishers later release non-OA articles on open access, at their own volition ³² See Annexe 3 'Growth of OA publishing in the UK'

- 5.9 The UK's mixed-policy approach supports Green as a viable alternative to Gold OA, which has underpinned the UK in becoming world-leading in the rate of open access publishing³³. Despite a subtle move to more restrictive embargo periods by publishers in recent years (see para 1.17), the vast majority of publications not currently being made OA could be, via the Green route.³⁴ It would seem that authors are either choosing not to make their articles available on personal, institutional or subject repositories, or are otherwise unaware that this is an option.
- 5.10 The UK's current and potential leadership of OA publishing may not be maintained in future, however, as countries such as the Netherlands and Germany have become more active in promoting Open Access.

Is Open Access publication improving the usage of research?

- 5.11 There are few reliable and no comprehensive sources of data on the usage of research outputs. However, there is a growing body of evidence including further research commissioned by the UUK Open Access Coordination Group which suggests that OA seems to be associated with more downloads, from which we can cautiously infer greater usage.³⁵
- 5.12 Data collected by the Journal Usage Statistics Portal (JUSP)³⁶, shows that OA downloads increased by 61% between 2014 and 2016, against a rise in total downloads of roughly 30%.
- 5.13 Figure 2 shows the article download data from an anonymised large publisher, which suggest that in the year to April 2017, OA articles received significantly more downloads than non-OA articles.

³³ Ibid

³⁴ Ibid p26

³⁵ It is also important to note that there is no evidence to suggest that publishing an article on Gold OA terms inevitably leads to more downloads, as factors such as the quality and discipline of the article also have significance.

³⁶ JUSP aggregates data on downloads via publishers' and intermediaries' sites from 180 higher education libraries in the UK, though it does not cover fully-OA publishers such as Frontiers, Hindawi or PLOS (which therefore depresses the overall picture of OA downloads).



Figure 2: Downloads of articles from a large publisher, May 2016 to April 2017³⁷

- 5.14 This evidence also suggests that OA articles in hybrid journals were on average downloaded more than three times the number of non-OA articles, whereas articles in fully-Gold OA journals were downloaded at double the number of non-OA articles. Although the reasons for this are unclear, the higher download rates from hybrid OA journals may be a reflection that publishing in hybrid journals has grown significantly in recent years, from 2.7% in 2012 to 19.4% in 2016.
- 5.15 We also know from IRUS-UK data that more articles are being downloaded from institutional repositories, over time.³⁸ This is complemented by data from CORE³⁹, which suggests that the numbers of full-text articles in UK repositories increased by more than 60% between January 2014 and December 2016, while the number of article downloads more than doubled from 6 to 12 million over the same period. This suggests that downloads per article are increasing and we can infer that OA may be having a positive effect on usage of research outputs.

Are institutions building infrastructure and processes to support OA?

5.16 Institutions are able to develop and leverage their own infrastructure to support open access, particularly with regards to the 'green' OA. Using internal funding and support from the research councils, there has been a rapid growth in both the number of institutional repositories, and the number of open access research items. Figure 3 shows that by December 2017, there were over 500,000 journal articles held in 135 UK institutional repositories – up from less than 25,00 articles in 5 institutional repositories in July 2012.

 ³⁷ Universities UK (2017) Monitoring the transition to Open Access, 2017, p32. Accessed: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>
 ³⁸ Ibid p33

³⁹ core.ac.uk



Figure 3: growth in UK institutional repositories, hosted items and articles, 2015-2017⁴⁰

- 5.17 All UK universities with significant QR income have developed institutional repositories to curate and maintain Green Open Access publications. In 2017, 6 million articles were downloaded from UK university repositories.⁴¹
- 5.18 There has been a high level of engagement from institutions with Jisc, the primary sector infrastructure provider, to scope, develop and refine services which support sector ambitions with open access, with a focus on reducing the administrative load on researchers and research-supporting teams in institutions. Such central support services are key to streamlining processes and supporting decision-making, and are highly valued by much of the research base. An overview of current OA-supporting infrastructure provided by Jisc is available in Annexe 2.

Are publishers responding to the OA policy imperative?

5.19 Publishers have moved to support Open Access publications in a number of ways. Most obviously, is a change in the options being offered to authors in terms of the prevalence of fully-OA, hybrid and subscription-only (non-OA) journals – with the proportions of journals indexed in Scopus which offer immediate Gold OA rose from under 50% in 2012 to just over 60% in 2015; and to nearly 70% for journals in which

⁴⁰ IRUS-UK, growth over time. Available: <u>http://www.irus.mimas.ac.uk/</u>

⁴¹ Ibid

UK authors have published. The proportion of subscription-only journals has fallen over the same period.⁴²



Figure 4 Categories of Journals from 40 Publishers, 2015 and 2017⁴³

- 5.20 Figure 4 shows the journals published by 40 publishers, including those responsible for the titles most popular with UK authors across four Research Excellence Framework panel areas. Between 2015 and 2017; fully Gold OA journals rose by 11%; hybrids rose by 17% and subscription only titles fell by 37%. The current OA policy arrangements are having a moderate effect in incentivising publishers to move away from subscription-only journals, and there may be stronger incentives to develop OA options in hybrid journals, rather than move to fully-Gold OA journals.
- 5.21 In addition, journal policies for the posting of articles on websites, repositories and elsewhere are becoming more complex, especially in relation to scholarly collaboration networks.⁴⁴ Figure 5 shows that while journals are still supporting 'green' open access, policies in all cases (except for postings on personal websites) have generally moved to be more restrictive, with increased embargo periods.

⁴² Universities UK (2017) Monitoring the transition to Open Access, 2017, p13. Accessed: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

⁴³ Ibid, figure 1.2

⁴⁴ Ibid, pp7, 15-19.



Figure 5: Embargo periods for accepted author manuscripts 2015 and 2017⁴⁵

5.22 Publishers are also increasingly engaging with sector infrastructure providers in order to collaboratively develop publisher – and sector-owned – services for mutual benefit. An example of this in the UK is the 'Jisc-Elsevier Open Science Advisory Group'⁴⁶, which was formed in 2017 and is chaired by Professor Mark E Smith (Vice Chancellor of the University of Lancaster).

Have off-setting agreements of APC vs subscription payments become more prevalent?

- 5.23 The university sector has been through a series of negotiations with publishers, with the ambition to secure favourable 'big deals' for the institutions. These negotiations have been led by Jisc Collections on behalf of, and with, university representatives and leaders.
- 5.24 These negotiations now routinely include discussions to ensure that universities do not pay both for subscription rights and to publish a paper in Gold Open Access form. This is known as 'offsetting'. Jisc Collections has provided evidence which suggests that there has been an increase in the number of 'big deals' with publishers which feature some type of offsetting or prepayment arrangement. (The 'big deal' is an agreement to have a single contract that covers a large number of journals.) (Figure 6).

⁴⁵ Universities UK (2017) Monitoring the transition to Open Access, 2017, p18. Accessed: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>.

⁴⁶ More information is available on the Elsevier website <u>https://www.elsevier.com/about/open-</u> <u>science/uk-open-science-partnership</u> (accessed April 2018)



<u>Figure 6: University participation with 11 publisher 'big deals'</u> (showing availability of and participation with APC prepayment or offsetting deals)⁴⁷

5.25 The increased availability of and participation in offsetting deals is a positive development, improving value for money whilst promoting Open Access.

Are off-setting agreements proving effective in constraining total costs?

5.26 Evidence suggests that there has been, at best, slow progress from the major publishers towards adapting business models to reflect the ambitions of the negotiations, and of the UK policy ambitions for open access. Of course, we need to recognise that the publishers operate as global businesses. Figure 7 shows data from RCUK block grant analysis, and indicates that the only major publisher to show significant movement in recent years, from hybrid OA publishing towards pure Gold OA, is Springer Nature, whilst some smaller publishers, such as IoP, have shown some movement.

⁴⁷ Based on bespoke data provided by Jisc Collections to Universities UK (2018), unpublished.

Figure 7: The number and type of articles published by the top 10 publishers (by number of articles published) in 2014/15, 2015/16 and 2016/17 as well as the average APC cost by article type for each publisher.⁴⁸



5.27 Indeed, although the evidence is limited, there is reason to believe that offsetting agreements are reducing spending increases. Estimates contend that in 2015, offset agreements had delivered some £2.5million in savings to the sector.⁴⁹ Such developments are welcome. However, research has also demonstrated that while overall costs might be lower than they probably would have been without such deals in place, the total amount being paid by institutions is still rising beyond inflation.⁵⁰

⁴⁸ RCUK Open Access Block Grant analysis August 2013-July 2017, p7. Available: <u>https://www.ukri.org/files/funding/oa/rcuk-apc-returns-analysis-2016-and-2017-pdf/</u>

⁴⁹ See Lawson, S (2016) Report on offset agreements: evaluating current jisc Collection deals. Accessed:

https://figshare.com/articles/Report on offset agreements evaluating current Jisc Collections deal s_Year_2_evaluating_2016_deals/5383861

⁵⁰ See Lawson, S (2016) Report on offset agreements: evaluating current jisc Collection deals (accessed:

https://figshare.com/articles/Report on offset agreements evaluating current Jisc Collections deal s Year 2 evaluating 2016 deals/5383861)

The 2016 "Springer Compact" big deal, negotiated by Jisc Collections

Adapted from blog posts by Mafalda Marques, Jisc.

The Springer Compact agreement was launched in January 2016, following a pilot phase between October and December 2015 when 368 articles were made available on open access free of charge. The Springer Compact agreement is a flipped model which enables researchers from 91 participating UK institutions to publish their articles immediately as open access in ~1,600 Springer journals as well as to access all content published in ~2,500 Springer journals.

In this flipped model, rather than paying a subscription fee and an unknown number of APC charges, the institution pays a set fee for unlimited APCs based on their 2014 APC expenditure with Springer and a top up fee to cover access to all the subscription content – thus containing the total cost of ownership

A Jisc survey of the perception of the springer compact deal by university stakeholders found that 86.7% of respondents rated the overall deal either as positive or very positive. Some of the highlighted positive aspects included a reasonable price, a simple workflow process, and little overall administration.

Although there are areas for further development, the Springer Compact deal is held as an example of an effective and satisfactory off-setting scheme which has the effect of 'flipping' the publishing model to foreground OA. The feedback received from libraries at Jisc's offsetting workshops suggests that this is a workable and efficient model that other publishers could adopt.

https://scholarlycommunications.jiscinvolve.org/wp/2016/07/06/the-springer-compact-offsetmodel-update-on-progress/

https://scholarlycommunications.jiscinvolve.org/wp/2017/07/12/institutions-survey-on-thespringer-compact-agreement/

How does the UK compare in an international context?

- 5.28 The UK has been at the forefront of international efforts in the transition to open access publishing, and the UK's OA publishing rates are among the highest in the world. In terms of crude metrics, the UK published some 53% of publicly funded research outputs via OA, compared to a world average of around 32% after 12 months.
- 5.29 In comparison to the major international competitors in terms of size and scope of research outputs, the UK fares moderately well. Research commissioned for the 2018 Monitoring report found that the UK was publishing proportionately more open access

articles than both the USA and China. An overview of a selection of national policy approaches to open access, including for USA and China, can be found in Annexe 4.

- 5.30 A notable element which sets the UK aside from many international competitors is the comparative lack of high-level and overt political support for open access. Whilst there have been champions in the UK government in previous years, this agenda has not been as high profile in the UK as in other countries, with for example, the Netherlands making Open Access a key matter for their EU presidency in 2016. Similarly, UK university representative bodies have not been as vocal and perhaps empowered in pursuing national OA objectives as some of our European neighbours, which has allowed (an inaccurate) perception that the UK is out of step with much of Europe, and is not as engaged in the OA agenda as would be preferred, to propagate.
- 5.31 In Germany, nearly half of universities have refused to renew their subscriptions with Elsevier after a breakdown in negotiations. The German universities are seeking to replace the APC model with one based upon a 'Publish and Read' fee. This would require publishers to accept a single payment to cover both subscriptions and a guarantee of Gold Open Access publication for papers submitted by their academics. Elsevier has not withdrawn access to their content at present and the dispute is being watched closely. 'Publish and Read' is a potentially transformational development and one that the UK should watch closely and, possibly, seek to emulate.
- 5.32 At a European level, stakeholders are overtly committed to Open Access. There are currently three different groups or initiatives sponsored by the EC, active in pursuing open access objectives:
 - President Junker has recently appointed Robert-Jan Smits as 'Open Access envoy', based at the European Political Strategy Centre, with the task to propose concrete policy recommendations to ensure that all publicly funded scientific publications are available in Open Access by 2020⁵¹
 - The Open Science Policy Platform (OSPP)⁵² will report findings, recommendations and advice to the competition council at the end of May, and will also be making recommendations for the 2020 target.

⁵¹ Horizon Magazine, interview with Robert-Jan Smits (23 March 2018). Available: <u>https://horizon-magazine.eu/article/open-access-scientific-publications-must-become-reality-2020-robert-jan-smits_en.html</u>

⁵² Open Science Policy Platform: <u>https://ec.europa.eu/research/openscience/index.cfm?pg=open-</u> science-policy-platform

- The expert group under the OSPP⁵³ is also making recommendations on improving OA, but looking ahead further than 2020, to a 10-year implementation period. This group will report in Autumn 2018.
- 5.33 Whilst noting some inherent ambiguity in the multifaceted approach, the scale of activity is an indication that Open Access policy is being taken seriously at a European level. During my discussions with key stakeholders whilst developing this report, I have found few who sincerely believe the European target of full open access by 2020 is realistically achievable, including the European Research Area and Innovation Committee (ERAC) standing working group on open science and innovation.⁵⁴
- 5.34 The UK has remained committed to pursuing Open Access, most recently articulated by Jo Johnson's ambition that "almost all" publicly-funded research would be in Open Access outlets by 2020.

⁵³ Ibid

⁵⁴ ERAC Standing working group on Open Science and Innovation (ERAC SWG OSI) (2018) 'Assessment of the Amsterdam Call for Action on Open Science'. Accessed: <u>http://data.consilium.europa.eu/doc/document/ST-1202-2018-INIT/en/pdf</u> p39

6. Issues and challenges

- 6.1 Whilst scientific knowledge is intrinsically valuable, public investment in research is primarily in recognition that there are tangible public good outcomes. These include, inter alia, contributions to economic growth and competitiveness, the enhancement of lives through medical breakthroughs, the enhancement of public services and contributions to culture. Such 'translational' activities rest upon discovery science where academics pursue problems that may be of theoretical interest to them. For example, touchscreen technologies were developed at CERN by scientists seeking to understand esoteric questions in physics, whilst major advances in quantum technologies that rest upon abstract theory and practical engineering are leading to new generations of computers and scanners.
- 6.2 The impetus behind open access emerged because much of published research was inaccessible to anyone without a subscription to a journal. This was acutely felt in NHS hospitals, as doctors were unable to access the latest advances in their fields.
- 6.3 The journey towards Open Access remains in development. While there is not unanimity, a number of stakeholders have indicated that they believe the current journal market is failing to operate optimally – particularly in relation to journal access and the cost of Gold OA. Such concerns are held within the UK and elsewhere in Europe, evidenced by the strong stance taken by the League of European Research Universities.⁵⁵
- 6.4 In my last advice, I reported on some of the remaining challenges in making the transition to Open Access publishing market. These issues remain pertinent and are rehearsed here. Broadly speaking, the features present in a mature and optimal market are characterised by:
 - low levels of market concentration
 - low entry barriers
 - dispersed buyer power
 - strong customer response⁵⁶

⁵⁵ LERU Statement for the 2016 Dutch EU Presidency (2015) *Moving Forwards on Open Access*. <u>http://www.sconul.ac.uk/sites/default/files/documents/LERU%20Statement%20Moving%20Forwards</u> <u>%20on%20Open%20Access.pdf</u>

⁵⁶ Competition Commission (2013) Guidelines for market investigations: Their role, procedures, assessment and remedies. Available from:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/284390/cc3_revised.pd

- 6.5 Where one or more of these is not present, there could be negative consequences for efficiency, productivity and quality. These will be briefly considered in turn.
 - low levels of market concentration
- 6.6 There are many journals and publishers operating in the journal market, offering a wide range of options to authors and research funders as to where and how research is disseminated.
- 6.7 However, the market is dominated by a small number of large publishers. The available evidence suggests that the vast majority of both subscription fees and APCs are paid to a small number of publishers, and that the market appears to be somewhat resistant to lowering levels of market concentration.
- 6.8 Figure 8 shows the best estimate of the cost of journal subscriptions that UK universities pay to the largest nine publishers which, in 2016, totalled approximately £103m. The data were gathered using FoI Act requests and, as not all universities responded in all years, they are likely to under-estimate the total cost. The four largest publishers account for the majority of subscription income. Other estimates have placed overall subscription expenditure across the entire HE sector in the region of £160m.⁵⁷

⁵⁷ Universities UK (2017) Monitoring the transition to Open Access, 2017 Annexe 2: Financial projections. Available: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>



Figure 8: Subscription costs to 10 largest publishers from 155 institutions, 2010-2016⁵⁸

- 6.9 The data from 2010 to 2016 (figure 8) suggests that there has been very little movement in terms of the proportions of subscriptions going to publishers, with the three largest consistently dominating the market. This suggests that there has been little disruption in the market in recent years, with little effect on historical subscription market concentration.
- 6.10 The best estimates of the spending by UK universities on APCs show a similar pattern of market concentration (Figure 9). It is worth noting that PLOS (the Public Library of Science) is an Open Access only publisher. These data are drawn from a sample survey conducted by Jisc and under-estimate total spending. Separately, research commissioned for this work estimates current total spending on APCs in 2016 as being in the region of £50m⁵⁹, up from £33m in 2015⁶⁰.

⁵⁸ UUK in house analysis based on: Lawson, Stuart; Meghreblian, Ben; Brook, Michelle (2015): Journal subscription costs - FOIs to UK universities. figshare. Available:

<u>https://doi.org/10.6084/m9.figshare.1186832.v23</u> and Lawson, Stuart (2017): Journal subscription expenditure in the UK 2015-16. figshare. Available: <u>https://doi.org/10.6084/m9.figshare.4542433.v6</u>. *NB: The 2015 and 2016 records only data attributed to Springer but not Nature, due to imperfect data arising from the timing of the merger of the two publishers. Also note that IOE has been removed from the dataset.

⁵⁹ Universities UK (2017) Monitoring the transition to Open Access, 2017 Annexe 2: Financial projections. Available: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

⁶⁰ Tickell, Adam (2016) Open access to research Publications: independent advice. p15. Available: <u>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/49</u> <u>9455/ind-16-3-open-access-report.pdf</u>



Figure 9: APC Expenditure (GBP millions) 2016, 38 institutions⁶¹

- 6.11 Jisc analysis suggests that the top 10 publishers make up some 77% of APC spend, and the remaining 525 publishers in the dataset comprise the long tail. Elsevier continues to dominate, taking nearly a third of APC revenue. However, Springer Nature, following the merger of Springer and Nature Publishing Group, is now a significant competitor in the APC/Gold OA market. ⁶²
- 6.12 Subscription and APC markets do not operate in isolation they are closely correlated (figure 10).

⁶¹ Jisc (2017). Article processing charges in 2016. Accessed:

https://scholarlycommunications.jiscinvolve.org/wp/2017/08/23/article-processing-charges-in-2016/ ⁶² Jisc (2017). Article processing charges in 2016. Accessed: https://scholarlycommunications.jiscinvolve.org/wp/2017/08/23/article-processing-charges-in-2016/





6.13 In terms of combined market share of major publishers (figure 11), based on subscription and APC payments made by a sample of 38 institutions, the degree of market concentration is apparent: the top three publishers represent around 60% of the publishing market.





6.14 It would be unfair simply to 'blame' publishers for such concentration. Academics not only prefer to publish in high status journals, but citation practices, promotion processes and peer review in both the REF and research granting bodies favour such

⁶³ Universities UK (2017) Monitoring the transition to Open Access, 2017, p.43. Available: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

publications. Consequently, 'prestige' diminishes the salience of cost signals, hindering effective market operation. Indeed, some evidence suggests there is a weaker correlation between journal impact factors and the quality of the submitted articles, than is often assumed.⁶⁵

6.15 To assist an effective market, this relationship between perceptions of quality and particular journal titles should be weakened, by the comprehensive adoption of policies which explicitly aim to remove such considerations from reward and recognition processes. An established model which is gaining traction internationally is the San Francisco Declaration on Research Assessment (DORA).⁶⁶ DORA requires that that metrics are used appropriately in the evaluation of individual researchers. Such a policy is a required element in enhancing publishing choices, and may reduce any potential distortion in the market arising from the privileging of certain publication routes. Providers of research metrics⁶⁷ have clearly stated the need to use them appropriately and that they should not be employed at a granular level

Recommendation 1: UUK, with partner organisations, to encourage universities to sign-up to the **San Francisco Declaration on Research Assessment** (*DORA*), or to adopt internal policies which are aligned to the same ambitions.

• low entry barriers

- 6.16 Well-functioning markets also require surmountable barriers to entry for new providers (publishers). Likewise, providers need to be able to fail.
- 6.17 Over the past decade, new open access publishers and journal titles have entered the market. These are almost exclusively 'digital only' offerings and there has been little change in the traditional subscription publishers. As cost is not a significant driver for a researcher's choice of journal, brand reputation makes it difficult for new market entrants to become established.

⁶⁵ Adams, Jonathan and Gurney, Karen A (2014) Evidence for excellence: has the signal overtaken the substance? Digital Research Reports. Available: <u>https://www.digital-science.com/wp-content/uploads/2014/09/Digital-Research-Report-Evidence-for-Excellence.pdf</u>

⁶⁶ American Society for Cell Biology (2013). *The San Francisco Declaration on Research Assessment* <u>http://www.ascb.org/dora/</u>

⁶⁷ For example, <u>https://www.elsevier.com/connect/san-francisco-declaration-on-research-assessment-dora-elseviers-view</u> and <u>http://researchanalytics.thomsonreuters.com/statement_re_sfdra/</u>

6.18 It is, however, important not to lose sight of the contribution and potential of exclusively Open Access publishers, such as PLoS⁶⁸ and Hindawi⁶⁹, and journals, such as *e-Life* and *Nature Communications*. These are contributing to a transformation in science communication. They typically embrace new technologies and business models, enabling new entrants to operate at scale and to compete with incumbents. There has also been a rise in funder lead and university open access presses in recent years, such as Wellcome Open Research⁷⁰ and the UCL press open access megajournal⁷¹. It is essential that research funders and universities continue to support such developments, and to understand their potential better.

• dispersed buyer power

6.19 Whilst sector-level negotiations on 'big deals' with journals are centrally negotiated to positive and beneficial outcomes (by Jisc Collections on behalf of the sector), I believe there is more that could be done to raise the profile of such negotiations, to build greater awareness and support of sector ambitions therein, to more effectively leverage the support of university leaders, and to prepare viable alternatives for the sector, should negotiations become frustrated.

Recommendation 2: University leaders should be more regularly and more fully **engaged with regarding sector-level Journal negotiations** and, once ambitions are articulated, should be publicly announced.

Recommendation 3: As a matter of public interest, greater **transparency around the outcomes** of journal negotiations should be delivered, and information shared as fully as possible with sector leaders and international partners as a minimum.

6.20 The academic journals market is international and, while there are forums within which library consortia discuss matters of common interest, there are no examples of significant international collaboration by buyers in negotiating with journal publishers.

⁶⁸ PLOS (Public Library of Science): <u>https://www.plos.org/</u>

⁶⁹ Hindawi Publishing Corporation: http://www.hindawi.com/

⁷⁰ https://wellcomeopenresearch.org/

⁷¹ http://www.ucl.ac.uk/news/headlines2/0118/170118-megajournal

The UK could usefully learn from the Dutch and German counterparts, and cooperate where appropriate opportunities arise.

Recommendation 4: UK negotiators should pay close attention to the outcomes of the impasse between German universities and Elsevier over proposals for a '**Publish and Read**' model.

- strong customer response
- 6.21 At present, researchers are empowered to spend their funding where they decide (within the remit of funders policies). RCUK provide block-grant funding for OA. This is an appropriate, low-burden approach that underpins the additional costs of delivering Gold OA, and is broadly supported by the research community. It signals that the costs of publication must be valued as an integral part of the total cost of research.
- 6.22 In the absence of dedicated funding to support OA, academics are more likely to be incentivised away from Gold OA, and perhaps away from OA publishing more generally. Johnson et al (2018) show publishing Gold OA is "largely driven by, and reliant upon, external funding"⁷², with the implication that the removal of the block grant may act to the detriment of OA policy ambitions, and risk undoing some of the progress to date. Removing the block grant might also have implications on the ability for UKRI to affect change in behaviour or influencing the publishing market, by changing the conditions of the usage of such funds by academics and universities.
- 6.23 The block grant is unlikely to be a permanent feature. UKRI should reasonably commit to providing block grants on a temporary basis, acknowledging that a financially equitable transition should be a time-limited endeavour. Universities are currently committed to 'big deals' with publishers, lasting a number of years, so funding should at a minimum continue to be available for the term of the current agreements.

⁷² Research Consulting (2018) "The Role of Hybrid Open Access in Extending Author Choice". p.3. Available at: <u>https://www.publishers.org.uk/news/press-releases/2018/hybrid-journals-vital-for-extending-author-choice-research-shows/</u>

Recommendation 5: If the current national 'policy preference for Gold OA' continues, the RCUK **block grant for supporting open access** should also continue to be provided by UKRI beyond 2020. However, UKRI with sector leaders, should consider the options available to ensure the block grant is able to be used in ways which deliver the maximum value for the public pound.

- 6.24 In the years following the Finch review, there have been some minor changes to the policy frameworks across the relevant organisations largely in the form of updated guidance from funders of research, and also new initiatives challenging the consensus, such as the Model UK Scholarly Communications Licence⁷³. I believe that there are some who are experiencing a degree of uncertainty as to what the current UK policy position is on open access.
- 6.25 As the future provision of the block grant is predicated on the continued 'Finch' policy preference for Gold OA (whilst accepting Green routes as equally valid), funders and sector leaders could helpfully rearticulate a joint statement with the new sector organisations, which sets out an unambiguous policy objective for the UK.

Recommendation 6: UKRI, the National Funding Councils and sector leaders should work together to articulate a clear, **UK-wide policy ambition** for Open Access for the next five years, with a focus on achieving open access as the default publication option, delivering financial sustainability for research performing organisations, and value for money on public investment in research. This should be underpinned by a coherent and harmonised UKRI policy on open access.

6.26 As part of understanding and articulating the national ambitions for open access, university leaders and funders must better understand the suite of levers which the higher education sector has at its disposal. While this includes ensuring that university policy reflects best practice in support of OA (as per recommendation 1), we must, as customers and partners, also continue to ensure that sector infrastructure facilitates the exchange of information in a way that minimises the administrative burden on all stakeholders.

⁷³ www.ukscl.ac.uk

Recommendation 7: Jisc, with the support of sector leaders, to set out a roadmap for developing a suite of tools which, as far as possible, **reduce the burden of administration** underpinning open access for institutions. This might include a focus on the automatic exchange of information between publishers and institutions, and should be complemented by providing greater levels of information to institutional leaders on their OA options and performance, whilst supporting appropriate levels of optionality in publisher-institutions arrangements, in order to suit the needs of a diverse sector.

6.27 The sector, funders and publishers must also ensure that the information being exchanged is consistent, comparable, and used comprehensively, if it is to be useful.

Recommendation 8: Jisc to lead on selecting and promoting a range of **unique identifiers**, including ORCID, in collaboration with sector leaders with relevant partner organisations. Funders of research to consider **mandating** the use of an agreed range of unique identifiers as a condition of grant.

6.28 Copyright and licencing remain important considerations for making research outputs increasingly open to the world, and there are sector groups which advise and act on behalf of the sector.⁷⁴ Such matters are ultimately defined by a combination of university policy, reflecting institutional and academic autonomy, and also by funders of research. These are not day-to-day considerations for university leaders, and there is a space for enhanced advice, guidance and coordination of proposed changes to policy, which could helpfully be performed by Jisc Collections, given its interface between university leaders, libraries and publishers.

Recommendation 9: Jisc Collections, in collaboration with sector leaders, should consider the role of a range of **Licensing and Copyright** arrangements in delivering OA objectives, as part of a suite of levers available to leaders of a diverse range of institutions.

⁷⁴ cf, the Higher Education Copyright Negotiating and Advisory Committee, <u>http://www.universitiesuk.ac.uk/policy-and-analysis/Pages/copyright-working-group.aspx</u> and Jisc Collections <u>https://www.jisc-collections.ac.uk/Help-and-information/How-Model-Licenceswork/Guide-to-Model-Licence/</u>

7. Conclusions and next steps

- 7.1 The UK research base is among the most productive and high-quality in the world, and evidence in this report suggests we also have one of the most mature and effective Open Access policy and infrastructure environments. In comparison to world averages, the considerably higher levels of availability of publicly-funded UK research outputs to the world, for free, is a true success story, and one which should be widely celebrated.⁷⁵
- 7.2 However, we must not be complacent. The comparative success of UK OA has an associated cost, and as the price of journal subscriptions and APCs have been increasing above inflation, there are growing questions over financial sustainability. Although estimates vary, the UK spent approximately £210m for both subscription and APC charges (£50m) in 2016.⁷⁶ This is up from approximately £168m in total in 2014, with £33m spent on APC charges.⁷⁷ Evidence suggests that the market does not appear to be as responsive or elastic as one might expect to find in a healthy, competitive market.⁷⁸
- 7.3 Analysis conducted for this advice considered a range of scenarios for future patterns of prices, publishing rates, publishing patterns, and progress of offsetting deals, and projected expenditure to 2028 (full details of the assumptions can be found in annexe 5)
- 7.4 The financial projections suggest that, on broadly current price trends and publishing patterns and assuming that OA take-up in the UK were to reach 100% by 2025 total expenditure would rise to £362m in 2020, and £818m in 2028, well over three times the 2016 level in real terms (Figure 12, scenario 1b).

⁷⁵ See Annexe 3 'Growth of OA publishing in the UK' for more detail

⁷⁶ Monitoring Report 2018 – Financial projections annexe <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

⁷⁷ Tickell, Adam (2016) Open access to research Publications: independent advice. p.15. Available: <u>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/49</u> <u>9455/ind-16-3-open-access-report.pdf</u>

⁷⁸ Universities UK (2017) Monitoring the transition to Open Access, 2017, Chapter 5. Available: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

Scenario 4b



2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028

- Scenario 1a - Scenario 1b - Scenario 2a - Scenario 2b

— Scenario 3b —— Scenario 4a —

Figure 12: Estimated total costs to the sector under a range of scenarios, subscription and APC charges combined 2016-2028⁷⁹

- 7.5 Although the financial projections modelled in this report are imperfect and based on a range of assumptions, there is good reason to believe that costs are likely to increase in real terms before beginning to stabilise, and current trends would suggest they have the potential to do so significantly.
- 7.6 In order to successfully plan for and deliver financial sustainability in scholarly communications, stakeholder groups must work together to ensure that good value is delivered, across all parts of the research production and dissemination life-cycle, for each public pound spent.

Supporting OA Service standards and efficiency

– Scenario 3a —

£600,000,000 £500,000,000 £400,000,000 £300,000,000 £200,000,000 £100,000,000

£0

7.7 We have made good progress to date as a community, and as testament to this collaborative and multi-stakeholder approach, the OACG established four working groups, following my last advice.⁸⁰ The working groups have delivered valuable and detailed recommendations.

 ⁷⁹ Jubb Consulting (2018) *Bespoke OA modelling commissioned by UUK*. Unpublished. NB: Projected funding to publishers is subject to many variables that are impossible to accurately forecast, so the above projections are a based on a number of assumptions, detailed in annexe 5.
 ⁸⁰ Tickell, Adam (2016) Open access to research Publications: independent advice. p.15. Available: <u>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/49</u> 9455/ind-16-3-open-access-report.pdf

- 7.8 At the time of my last advice, there had been some concern raised by research funders about the quality of service received from publishers in return for Gold OA charges ^{.81} Some concerns remain, however expectations around service standards are being clarified, in particular through the work of Jisc and UKSG and also, most recently, by the collaborative work undertaken by the UUK OACG working group on OA Service Standards. This multi-stakeholder group has recently produced an agreed Gold OA good practice guide for all stakeholders, which sets out the expectations of and for each party.
- 7.9 The good practice guide has recently been endorsed by the OACG. Relevant stakeholder groups should continue to build on the progress to date by committing to work towards meeting the best practice recommendations outlined in the guide, and to continue to work collaboratively to identify, articulate and meet the mutually required standards of service, and to reduce the burden of administration. The recommendations are summarised in annexe 8.
- 7.10 Furthermore, the OACG also established working groups to investigate and produce recommendations in support of driving OA efficiencies, and developing OA repositories. These groups have made excellent progress in identifying both challenges and opportunities across the open access research lifecycle, through extensive engagement with a range of stakeholders over the last two years. The groups have set out recommendations for next steps, which have been developed and agreed by representatives from all key stakeholder communities, and also endorsed by the OACG. The recommendations are summarised in annexes 6 and 7 respectively.
- 7.11 There are some areas of alignment in the recommendations, such as the support for improved metadata and usage of unique identifiers, reflecting the efficiencies to be gained by publishers and libraries alike, through reasonable adjustments to respective policies and practices. These recommendations should now be considered in detail by funders, university leaders, sector infrastructure providers and publishers, with a view to implementation.

⁸¹ Kiley, R. (2015) The Reckoning: An Analysis of Wellcome Trust Open Access Spend 2013-14. Available: <u>http://blog.wellcome.ac.uk/2015/03/03/the-reckoning-an-analysis-of-wellcome-trust-open-access-spend-2013-14/</u>

Recommendation 10: The reports and recommendations arising from the UUK Open Access Coordination Group working groups on **OA Service Standards, OA Efficiencies** and **OA Repositories,** should be taken forward by funders of research, UUK, Jisc, and publishers for consideration in next steps. ⁸²

Policy advice, evidence and coordination

- 7.12 It is clear that the journey towards OA is relatively long and complex and to some observers, perhaps frustrating. Policy initiatives and approaches will continue to develop in response to changes in technology and stakeholder expectations. This takes place as part of a wider evolution in the very way in which research is conducted, communicated, and used now and into the future.
- 7.13 It is essential for optimal efficiency and effectiveness, that policy responses are underpinned by the best evidence and expertise available, and to recognise that open access to research articles is one – albeit comparatively mature – part of the broader transition to 'open research.
- 7.14 There may be alignment of ambitions across aspects of open science, for example regarding the way in which open research items are stored in repositories, or discovered by end users. Funders, policy makers and influencers should therefore note the work of sector groups such as the Open Research Data Task Force, and its forthcoming recommendations for developing the UK's open research base, and also the valuable work already underway by the OACG OA Monographs working group, which is set to be influential for future REF policy, and beyond.

Recommendation 11: The UUK OA Coordination Group's **Open Access Monographs** working group should continue its work under UKRI sponsorship.

7.15 Alongside the individual recommendations above, the funders of research should, in partnership, continue to commission research to monitor the transition towards open

⁸² All working group reports and recommendations can be accessed via: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

access, and specifically include a review of the developing market conditions. By doing so, we can be assured that the transition to OA continues to proceed.

Recommendation 12: Funders of research should jointly commission further research to **monitor the transition** towards Open Access every two-three years. This should assess the impact of the various mechanisms being introduced to help shape a more effective market (such as off-setting arrangements), alongside a review of the implementation of the voluntary good practice guide and code of conduct.

7.16 The Learned Society publishers, researchers in universities and independent research organisations and funders have a symbiotic relationship in a thriving research ecosystem. Furthermore, the UK is home to many of the world's leading publishers and journals to the benefit of both employment and the balance of payments. Consequently, subject to ensuring value for public funds, there remains clear merit in maintaining a strong dialogue between stakeholders, so that contentious issues can continue to be managed in a collegial fashion.

Recommendation 13: Recognising that the UUK Open Access Coordination Group may have reached the end of its period of operation, sector leaders, funders and Jisc should **continue to work together** and engage with professional groups, to coordinate activities, and to steer the sector towards achieving OA ambitions.

Annexe 1 – Simplified RCUK OA decision making tree

The decision tree below illustrates a simplified version of the decision-making process available to authors in receipt of RCUK funding. It has been developed by the Publishing Association and endorsed by BIS. However, it is not comprehensive and is not intended to be understood in isolation.



Figure 13: Research Councils UK Open Access Policy decision making tree

Annexe 2 – Overview of selected Open Access Infrastructure in the UK; February 2018

- OA infrastructure refers to the variety of services available to the Higher Education and research community, largely provided by Jisc (the shared service which champions ICT services for the sector) and which support institutions to understand, implement and engage with policies as efficiently and effectively as possible, and help researchers benefit from OA.
- 2. These services represent a national focus of expertise available to the sector, save institutions time and resource in dealing with the challenges of open access, and allow feedback, opinion and influence from the sector to be represented to commercial stakeholders for development of the publishing and wider open access environment.
- 3. The current infrastructure services offered cover the whole life-cycle of open access publishing for articles, from submission, through publication and attempt to measure later usage and impact of OA publications. In addition to the services currently in operation, the sector is also developing new services to meet the evolving needs of UK universities. Selected services are presented graphically below according to a typical article lifecycle.



Figure 14: Overview of Jisc Open Access services to the higher education sector

O Guidance, consultancy, technical and metadata support

4. Article submission services:

• From the moment an academic is ready to publish in a journal, there are services which assist in locating, understanding and complying with the range of policies offered by different journals, whether 'hybrid' or 'pure Gold', and different funders. This area of activity is multifaceted, and the *Sherpa* services assist academics and institutions in understanding relevant policies of funders, journals, and funder-journal combinations. Sherpa covers around 29,000 journals (practically all that are published), and all significant UK research funders.

- 5. Article acceptance services:
 - Jisc Collections negotiates with publishers on behalf of UK higher and further education institutions. The overall aim is to constrain the negative financial impact on institutions of subscribing to journals' content and paying for APCs with those same publishers, and to encourage publishers to adopt good practices to make OA workflows more efficient. It has pioneered both offset agreements and, more recently, efficient "read and publish" agreements. In 2016 those agreements saved UKHE at least £8m. The costs to the UK of APCs paid by universities are recorded in *Monitor UK*.
 - Publications Router provides notifications and, often, appropriate versions
 of articles from publishers and others to university repositories, soon after
 those articles have been accepted for publication, in line with the REF OA
 policy. Some 27 universities are receiving feeds from Router. Five
 publishers provide full articles (~11% UK output), with a further nine in
 development/planning. Notification feeds cover >50% UK article output.

6. Article publication services:

- Up to the point of publication, universities have to keep track of articles from their authors, and their compliance with OA policies; *Monitor local* enables this.
- A range of services are also provided via *CORE*, the largest open aggregation of OA content in the world (10m full articles, 120m metadata records). This enables a one-stop-shop to support institutions with discovery, analytics, and text-and-data mining access. This service is offered in partnership between Jisc and the Open University. By using the *RIOXX* 006Detadata profile (co-developed by Jisc, Research Councils and HEFCE), it has a key role monitoring both the REF and EC OA policies, supported by Jisc's role as National Open Access Desk in the EC *OpenAIRE* infrastructure.

7. Article usage services:

 The sector has developed a number of services that collect and assist interpretation of usage data for OA articles via download data from the major journal publishers and 138 of the 179 UK publication repositories, *IRUS-UK*.

8. Across the lifecycle:

 Jisc is the UK consortium lead for the global, community-owned researcher identifier solution *ORCID*, and is active in developing other global identifier services to ease workflows. Some 86 UK universities are members of the consortium and >80% of UK researchers have an ORCID. Jisc collects and analyses data from a range of sources, not limited to the services described here, to provide sector intelligence for negotiations and policy makers.

9. Complementary services:

 Many universities have bought research information systems to support their growing research management function, of which OA support is a part. Publishers have supported a global identifier service, Crossref, for publications, and some have further developed a dashboard service CHORUS, though it is not a good fit for UK OA policies.

10. New in 2018:

- The services above focus on journal articles and published conference papers, but other types of output are important especially in the arts, social sciences and humanities. Jisc is proposing to implement a *dynamic purchasing system* to enable New University Presses and Academic-Led Presses to contract suppliers that offer publishing services, especially in support of open access.
- In autumn 2018, Jisc will launch a *national shared open science repository service* that enables universities to curate, preserve, link and report on the full range of their research outputs, including research data and open access publications. Over time, this will be fully integrated with the services described above, and others, to significantly ease workflows and administration. It may become a central path toward open science in the UK.

Annexe 3 – Growth of OA publishing in the UK⁸³

- 1.1 The UUK OA Coordination Group commissioned a second investigation to monitor the transition towards OA in the UK. Its findings place the UK at the forefront of international OA implementation.
- 1.2 Key findings include:
 - UK publishing via Gold OA was below the global average in 2012, at 13% and 14% respectively.
 - However, Articles published via Gold accounted for around 30% of UK articles in 2016, higher than the global average of just under 19%.
 - Green OA publishing has also rapidly increased in the UK, from 5% being available via green OA in 2012, up to 24% in 2016. This compares to world averages of 6% in 2012, and 14% in 2016.
 - Combined, the UK now makes 54% of its publicly funded research outputs available via OA after 12 months, compared with a global average of around 32%
- 1.3 There is therefore a stronger prevalence of authors choosing to publish via both Gold and Green publishing options in the UK, and both are increasing at a faster rate than world averages (figure 15).





⁸³ Based on chapter 2 of Universities UK (2017) Monitoring the transition to Open Access, 2017. Accessed: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>.

⁸⁴ Universities UK (2017) Monitoring the transition to Open Access, 2017. Accessed: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-</u>

1.4 However, Figure 16 shows that articles published under Gold OA publishing models grew faster than subscription-based ones, and hence Gold OA rose from 12% to 19% of all articles. More than half of Gold OA articles were published under the Gold – APC model, and hybrid Gold articles grew fastest, albeit from a low base.



Figure 16: Proportion of articles published under different publishing models, global and

- 1.5 For UK-authored articles, the growth in immediate Gold OA was greater still. Between 2012 and 2016 they grew from 12% to 30% of all articles. This rapid rate of increase seems to demonstrate the effects of the policies of RCUK and major research charities led by the Wellcome Trust, and of the funding they have provided to support Gold OA.
- 1.6 The UK's profile of OA take-up is markedly different from the global averages: its use of OA in hybrid journals and of delayed OA journals is significantly more than the world average. The especially strong growth in Hybrid OA between 2012 and 2016, from 2.7% to 15.4% of all articles, probably also reflects UK authors' propensity to select journals with above-average Field Weighted Citation Impact. The proportion of UK-authored articles in hybrid journals that are published as Gold OA rose from 6% in 2012 to 28% in 2016.

access-coordination-group.aspx. *NB: Percentages are rounded. Green open access data also combines 'delayed OA'. *NB: 'Green' OA includes 'delayed OA', also sometimes referred to as 'Bronze OA', where publishers later release non-OA articles on open access, at their own volition ⁸⁵ Universities UK (2017) Monitoring the transition to Open Access, 2017. p.23 Accessed: http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx.

Annexe 4 – International trends in open access, February 2018

1. Introduction

1.1 Outlines the main features of the international landscape. However, comparison of the success of different national approaches to OA is confounded by the different methods available to measure that success, for example to measure the proportion of that nation's research publications that are OA. It is also confounded by sometimes profound differences between national research and innovation systems. Therefore, some modesty is needed in drawing conclusions.

2. Country sketches

USA

2.1 The picture in the USA is fragmented. The Obama Whitehouse issued a memo requiring all federal agencies funding significant research to develop and implement plans for OA. Several, such as the NIH, have supported OA for many years, through both policy and infrastructure (PubMedCentral). Private foundations such as Gates and Sloan also play a key role, and several have come together to coordinate actions under the Open Research Funders Group. University consortia have, with the exception of the California Digital Library, not addressed OA in their negotiations. CDL has pursued the "Pay it Forward" study, which concluded that, for research intensive universities, library budgets would need to be supplemented by funds (for example from research funders) that encouraged author price sensitivity for an APC market to be viable. Several universities including Harvard, Princeton and MIT have adopted institutional policies retaining rights in publications to allow them to pursue Green OA; this "Harvard-policy" is similar to the UK Scholarly Communications Licence.

China

2.2 There is support for OA at agency level in China, for example, in October 2017, the National Science Library, the Chinese Academy of Sciences, the National Science and Technology Library and Shanghai Tech University Library signed the Open Access 2020 Initiative. However, the picture underneath this is less clear, with few of China's 10k journals internationally recognised as OA, despite some having OA features. Author behaviour is partly guided by official encouragement to publish in Chinese journals, but also author incentives to publish both in Western prestige (high JIF) and mega-journals. There is also a strong Green OA push from both the National Natural Science Foundation of China and the Chinese Academy of Sciences.



Figure 17: International comparisons of OA publishing rates for global average, UK, USA and China in 2016⁸⁶

Germany

2.3 Compared to the UK, academic research in Germany tends to take place more in research institutes than in universities, for example institutes sponsored by the Max Planck, Helmholtz and Leibnitz societies. All of these support open science in general and OA in particular, with Max Planck being a founder of the OA movement and force behind the Open Access 2020 initiative seeking a global flip to OA. Max Plank is probably, with Jisc in the UK, the world leader in agreeing OA-related deals with publishers. The main German federal funder, the DFG, has supported OA for many years, and allows a capped grant contribution to APCs in fully OA, but not in hybrid, journals. Data on actual expenditure shows that UK and German average APCs have followed similar trends over the last four years. German university rectors have become directly involved in negotiations, under Projekt DEAL, which has so far not produced an agreement with Elsevier, after several months.

France

2.4 The French Government supports open science and OA, with a strong focus on Green OA. The 2016 Digital Republic Act created a new right for authors, allowing them to archive an OA copy of their paper using a non-commercial licence and with 6/12 month maximum embargoes. With HAL, there is also a national OA repository with good links to other international infrastructure such as the physics preprint "arXiv". Gold OA is beginning to feature in negotiations with publishers, but it remains a relatively low priority.

⁸⁶ Monitoring report 2017

Japan

2.5 The Government policy favours Green OA, but tolerates APC-based Gold OA. Some in Japan favour a more neutral line between the two approaches, and some institutions look forward to firmer mandates from national agencies. Several universities have adopted their own OA policies but, in the absence of strong funder mandates, can struggle to be implemented fully.

Netherlands, Finland and Scandinavia

2.6 Both Netherlands and Finland have national open science plans that include, beyond OA, attention on research evaluation and reward systems to encourage open science. Both have sought to negotiate OA deals with publishers, with the Netherlands perhaps leading with the direct involvement of university rectors. During 2017, many academics in Finland threatened to boycott Elsevier journals during protracted negotiations there; the final deal announced January 2018 contains no comprehensive OA component but "incentives" for Finnish authors to publish OA. Both Norway and Sweden are pursuing "read and publish" deals with publishers, such as the Springer Compact, based on the Dutch and German models.

Australia

2.7 The Australian Federal Government recently confirmed its support of the recommendation for a national (and states and territories) OA policy in its response to the Australian Productivity Commission report on IP.

Switzerland

2.8 From 2020, all publications from Swiss National Science Foundation funded projects must be OA. In preparation, new measures are being put in place, coming into effect on 1 April, 2018. Going forward, the SNSF will pay for journal Gold OA APCs, and OA books as well. Researchers will no longer be able to apply for exemption. To incentivize authors, the current upper limit for APCs (CHF3000, or c. £2300 / US\$3000) is temporarily waived (within reason).

3. University policies

3.1 The European Universities Association recently released a report on the activities of research institutions across Europe with respect to OA, which found that 74% of them had, or expected to have within a year, an institutional OA policy. Of those, a clear majority supported Green OA and a growing minority provided funds to pay for Gold OA, and over half reported their researchers having access to funds for Gold OA. Some 60% of respondents reported that less than 20% of their institution's publications were made Green OA, and 70% of respondents reported that less than 20% were made Gold OA.

4. Supra-national bodies

4.1 At the supra-national level, both the G7 and the EC have explicit views on OA; policies in the case of the EC. The September 2017 G7 science ministers communique mandated its open science expert group across a number of areas, though it is likely to

focus on research data rather than OA issues in 2018. The EC's OA policy is settled in H2020 and likely to persist into FP9. However, given the ambitious goals set by the EC Competitiveness Council, there may be some anxiety about the pace and cost of change, which could lie behind the forthcoming tender for a dedicated publishing platform, Open Research Europe, along the lines of Wellcome Open Research, HRB Open Research in Ireland, and other similar platforms recently launched.

5. Conclusions

- 5.1 The financial aspects of Gold OA are under intense scrutiny at a senior level in many countries. There appear to be trends toward increasing involvement of senior HE leaders in negotiations with publishers, and increasing conditionality on funds for Gold OA. It is notable that there has been no significant replication in other countries of the RCUK block grant mechanism. The OA2020 initiative has shown that there should be more than enough money to flip to OA, but mechanisms to achieve this and create a competitive market seem elusive. For example, while efficient "read-and-publish" deals have been done with major publishers in at least five countries, the longer-term effects on competitiveness are unclear. Another example might be that some consortia seem willing to sacrifice historical archival rights for OA from now on, which could weaken future HE negotiating positions. Consortia regularly exchange data and lessons learned in negotiations, and are building a good body of expertise on these issues.
- 5.2 The differences in national contexts are important, though. For example, both the German and Dutch negotiating consortia, institutes such as Max Planck, and the California Digital Library are research-oriented, whereas the UK negotiating consortium includes universities with a much broader range of missions. More generally, the scale of a nation's research outputs will impact the distribution of costs in an APC market; whereas Sweden can calculate that it would pay roughly the same as for subscriptions, the UK would pay significantly more, and UK research intensives would likely bear much of that burden. Furthermore, UK universities may be more autonomous than those in other countries, making it potentially harder to resolve challenges in the distribution of costs within the UK.
- 5.3 Beyond negotiations with publishers, and perhaps reflecting interest in longer term solutions, there seems to be widespread senior / policy backing for measures to enable the academic sector to keep some control over their research outputs, such as more institutional OA policies, setting up of alternative publishing platforms, and various mechanisms to enable non-exclusive rights retention by academics or their institutions.

Annexe 5 – Projections of the Cost Implications of the Transition to Open Access in the UK to 2028

Introduction

This annexe builds on the projections in Annexe 2 to the report on *Monitoring the Transition to Open Access* published in December 2017. It focuses on the implications as to possible costs for UK universities and their funders, taking account of both subscription costs and the payment of APCs. The projections focus on four groups of scenarios

- a continuation of current trends in the costs of subscriptions and APCs
- an assumed fall in subscription expenditure (either through cancellations or by downward pressure on prices) as the take-up of OA increases
- an assumed reduction in the current rates of increase in APC prices, in response to concerted pressure from funders and universities (for example by imposing caps on the levels of APCs they would fund)
- significant increases in the adoption of offsetting or 'read and publish' deals

The projections all start from a Jisc estimate of £180m spent by UK universities on subscriptions in 2016⁸⁷, and they are presented in real terms at 2016 prices, with no allowance for inflation. In cash terms, the figures shown below for expenditure over the next ten years on both subscriptions and APCs would of course be significantly higher.

Scenario 1: Continuing current trends

Estimates suggest that university expenditure on subscriptions rose by around 3% a year above the rate of inflation between 2012 and 2016, partly because some universities have increased the number of journals to which they subscribe; and data from the Monitoring report suggests that between 2013 and 2016 APC prices rose in real terms each year for fully-Gold journals by 8% and for hybrid journals by 2.6%. *Figure 18a* shows that if such rates of increase were to continue, even without any further increase in the take up of Gold OA beyond the 30% shown in 2016, expenditure would rise in total from £246m in 2016 to £292m in 2020 and £427m in 2028. If, as seems much more plausible, OA take-up were to increase, the rise in expenditure would be very much sharper. As *Figure 18b* shows, if OA take-up in the UK were to reach 100% by 2025, and current trends in subscription expenditure by 2021. Total expenditure would rise to £362m in 2020, and £818m – well over three times the 2016 level in real terms - in 2028. Further analysis suggests that even if neither subscription expenditure nor APC prices were to rise at all in real terms from 2018,

⁸⁷ Jisc 2016, Article processing charges (APCs) and subscription: Monitoring open access costs. <u>https://www.jisc.ac.uk/reports/apcs-and-subscriptions</u> The estimate of £180m is higher than the £160m used in Annexe 2 to the report on *Monitoring the Transition to Open Access*

total expenditure would still rise to £586m by 2028. Increases of this scale would clearly cause significant problems for funders, universities and libraries.





Scenario 2: Falling subscription expenditure

A second set of scenarios builds on the assumption that as the take-up of OA increases both in the UK and globally – and hence an increasing proportion of journal content is available freely to read and use – expenditure on subscriptions may fall, either through cancellations of existing subscriptions, or through downward pressure on subscription prices, especially for hybrid journals. *Figure 19a* shows that if subscription expenditure were to be static in real terms from 2018, while APC prices continued to rise at the current rate and OA take-up in the UK increased to 100% by 2025, then APC expenditure would exceed subscription expenditure in 2021. Total expenditure would rise from £246m in 2016 to £350m in 2020 and £753m – around three times the 2016 level in real terms - by 2028. *Figure 19b* indicates that if subscription expenditure were to fall by 5% a year, while APC prices continued to rise at the current rate, total expenditure would still increase in real terms, though at a lower rate, to £306m in 2020 and £659m in 2028. Again, therefore, the analysis shows that even with a fall in subscription expenditure, total expenditure would increase substantially. The cost driver would continue to be the rise in the take-up of OA.

Figures 19a and 19b, , scenarios 2a and 2b



Scenario 3: Falling rates of increase in APC prices

As noted above, APC price levels have increased at well above the inflation rate in recent years. As a response to high price levels, some funders have discussed setting a cap on the amounts they will pay for an individual article, thus seeking to limit any price increases by publishers. *Figure 20a* shows that if subscription expenditure continued to rise at the current rate, while APC prices were static in real terms, and UK take-up of OA reached 100% by 2025, then the point at which APC expenditure exceeded subscriptions would be delayed until 2022; but total expenditure would rise to £349m in 2020, and £652m in 2028. *Figure 20b* indicates that only if APC prices were to fall by 5% a year in real terms would a kind of equilibrium be reached (by 2024) between expenditure on subscriptions and APCs, with total expenditure remaining roughly level at around £490m – roughly twice the 2016 level in real terms - beyond that point (on the assumption that UK take-up of OA had reached 100%). It seems unlikely, however, that publishers would accept such a sharp drop in APC prices.



Figures 20a and 20b, scenarios 3a and 3b

Scenario 4: Adoption of offsetting and 'read and publish' deals

The possibility of arrangements to offset some of the costs of APCs against subscription expenditure was raised in the Finch Report and in Lord Willetts' response to it; and such arrangements have now been established with some publishers, though evidence on their impact is limited at present. Although some publishers are reluctant, there is increasing interest in reaching 'read and publish' arrangements, under which a university makes a single payment which covers both a licence for readers' access to journal content, and APCs for some or all of the articles published by corresponding authors from that university. The overall impact on expenditure depends, of course, on

- the extent of the uplift to existing 'subscription' prices represented by the single payments, and
- the proportion of the OA articles produced by all UK corresponding authors that are covered by such deals, bearing in mind that offsetting arrangements may not cover the fully-Gold journals in a publisher's portfolio, and that they cannot be adopted by Gold-only publishers such as PLOS.

It is important to note that the projections below are at UK level. In the medium term, since the 'subscription-to-read' element will represent a relatively small proportion of the single payment, such deals will give rise to questions as to the varying levels of payment from universities producing very different numbers of articles. Research-intensive institutions may therefore find themselves facing much sharper levels of increase in expenditure, while other institutions may pay less.

The extent and the rate at which 'read and publish' deals will be taken up is by no means clear, and their precise formats are likely to vary significantly; so the projections below are entirely speculative. Figure 21a shows the impact of a 25% increase in the price of (and expenditure on) 'subscriptions' in 2019 to include read-and-publish deals, after which expenditure increases by 3% a year in real terms (in line with the total numbers of UK articles). It assumes that APC prices for those articles not covered by such deals rise at the same rate; but that APCs for 25% of articles in fully-Gold journals and 75% of those in hybrids (rising to 100% by 2021) are covered by the single payment. It indicates that overall expenditure would fall back significantly in 2019 to just above its estimated 2016 level at £250m, before rising to £336m in 2028. Figure 21b shows the impact of a 33% increase in prices and expenditure on read-and-publish 'subscriptions' in 2019, after which they increase by 2% a year in real terms. It also assumes that APC prices for those articles not covered by the deals rise at the current rates; but that APCs for 50% of articles in fully-Gold journals and 80% of those in hybrids (rising to 100% by 2021) are covered by the single payment. It indicates that total expenditure would increase very slightly in 2019, but that it would then rise steadily to £367m in 2028.





Modelling of different sets of assumptions would clearly produce different results. But it seems clear that offsetting and 'read-and-publish' deals of this kind would lead to much lower rates of increase in expenditure than those shown under the first three groups of scenarios. They could well have other effects, however, not least in terms of stimulating further concentration in the scholarly journals market.

Annexe 6: OA Efficiencies Working Group: summary of recommendations

The following recommendations are part of a paper which summarises the high level findings of a workshop on 5–6 October 2017, developed by the Universities UK Open Access Efficiencies Working Group of the UUK OACG.

The full paper has been endorsed by the UUK OACG and can be access on group's page of the Universities UK website.⁸⁸

For the adoption and integration of identifiers, the group recommended:

1. Improve the integration of ORCID iDs into work flows throughout the life cycle.

Each section of the community has a role to play in improving the visibility of connections between researchers and their works and organisational relationships. This should be coordinated between funders, research organisations and publishers, with the explicit goal of reducing the number of times authors have to provide the same information across different systems. The group propose the following practical steps be taken:

- UUK should support a move for ORCID to be mandated for REF.
- Funders should collect or require ORCID iDs early in the life cycle, during grant applications.
- UUK to encourage institutional verification of ORCID IDs.
- Common integrations should be improved to enable data transfer in both directions between the ORCID registry and:
 - o grant application and management systems
 - o research Organisation Information Systems
 - o publisher submission systems

2. Register Digital Object Identifiers (DOIs) for articles at the point of acceptance

Crossref supports the registration of DOIs ahead of publication. Publishers can provide a valuable service to their authors (and in turn, their employers and funders) by registering DOIs and preliminary metadata with Crossref (including funding IDs and ORCID iDs for authors wherever possible) at the earliest possible stage in the article publication process. This has the potential to aid REF-compliance for green OA, and to smooth processes for gold OA payments and administration. Automatic notifications of new articles will then be

⁸⁸ UUK Open Access Coordination Group webpage, accessed: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

sharable both with researchers and their institutions, exploiting tools and connections that already exist.

3) Provide clarity and consensus around IDs for policies and licences

Resolvable, persistent identifiers for licences and policies will help to make them machine readable, streamlining and automating checks and verifications at multiple stages in the life cycle. This will simplify and accelerate communication with authors, and significantly reduce administrative burden for each stakeholder group. Furthermore, as a practical goal, the group propose:

• Drive forward creation of an independent, open, community-governed site that defines the licensing status of any object in a machine-readable format.

4) Drive consensus around, and adoption of, a common Organisation ID

There has been a lot of work in recent years to seek to address the lack of a commonly adopted, community governed, open identifier solution for scholarly organisations. The stakeholders in the UUK Open Access Coordination Group have the power to leverage that work and accelerate the consistent use of organisation identifiers across the research and publishing landscape.

5) Support the creation of a database of funding IDs for grant/awards

At the moment, initiatives such as the Open Funder Registry (formerly FundRef) provide identifiers for funding organisations. However, grants and other funding awards are identified using internal, often opaque, numbering or naming conventions. Embedding machine readable identifiers into funding data will provide a means to expose and connect data about organisations and people in receipt of funding with their outputs, collaborations and subsequent impact, as well as enabling the automatic processing of policy compliance decisions and reporting. Work currently underway at Crossref and ORCID could provide the means to create and to share these identifiers.

For functional and practical improvements in communications and the re-use of information, the group recommended:

6) Improve the consistency and clarity of open access terminology and eliminate jargon

Researchers and administrators are not helped by the profusion of terms and competing definitions in use in the open access space. Open access advocates, individual publishers and different national communities have developed their own terminologies. Communication with researchers cannot be useful or clear when the same term can have multiple competing meanings. The group propose that UUK take the following steps:

- work with standards bodies such as Consortia Advancing Standards in Research Administration Information (CASRAI) to help to clarify and simplify language around OA
- incorporate the results of that process into minimum metadata standards
- promote the adoption and understanding of a refined OA terminology via shared resources and common documentation and guidance

7) Identify ways to involve more researchers in discussions.

Researchers were invited to the meeting, but only two were able to attend. Researchers who have the energy and understanding of research information management and publishing workflows are few and far between, and as a result are in unmanageably high demand. The group also identified future benefit in engaging researchers who do not routinely think about the principles and practice of open access. The group felt that stakeholders who ultimately share the goal of supporting researchers should do a better job of asking them specific questions, and sharing their responses to eliminate duplication of effort and wasted time.

8) Support initiatives that foster metadata sharing at an early stage

Several of the top priorities for identifier providers and their partners involved exposing more information in a consistent, human and machine readable format. However, this data needs to be shared, aggregated and provided to the organisations and individuals that need it to make decisions or administer processes. Services like the Jisc Router, for example, provide the opportunity to provide research organisations with information that is needed at acceptance stage, helping them to plan and manage their funds and activities. UUK should support the development, sustainability, and adoption of activities like those coming from Jisc and Crossref to ensure that their benefits are widely and equitably shared.

9) Improve the alignment of policies and processes

- a. invest in maintenance of, and encourage usage of resources eg SHERPA
- b. standardise submission forms
- c. standardise peer review checklist
- d. standardise licence requirements and embargo periods

All stakeholders readily identified resources they provide to help researchers understand their obligations and degree of alignment between different publishing options and those obligations. The group was unable to confirm how much use is made of these and of centralised resources. Researchers seek information from librarians or research officers, or from publisher sites if they are able to identify the appropriate resource. Publishers reported challenges in providing information at the level of journal homepages and providing other title-specific resources because they are serving researchers globally.

There is a pressing need to make information available to researchers about rights and obligations at the point they are most likely to need it. Researchers engage most with open access at the time they are submitting an article and going through peer review. Submission and peer review processes vary widely at journal level and the group felt there would be significant advantage to aligning the stages at which researchers are presented with choices about open access, and the information they are given/asked for that supports those choices. The group propose that UUK encourage:

 vendors and publishers using electronic editorial office systems to standardise where in submission, peer review and acceptance workflows information is given and requested about open access

This should be a short- to medium-term measure. The group recognised the significant efficiency gains that would be made by researchers being required to obtain and use IDs much earlier in the research cycle. Once this is in motion, vendors of, and publishers using, EEO systems should ensure that IDs can be simply and easily inputted and harvested.

All stakeholder groups except for researchers have some stake in and responsibility for setting licence conditions and embargo periods. These were felt to be more confusing for researchers than any other aspect of open access. It is unclear whether UUK can play a role in helping align these, particularly because of the global nature of the publishing stage of research. However, UUK could support a meeting of funders, institutions and publishers to see if there is scope to simplify at least some of this for the UK.

Annexe 7: Open Access Repositories Working Group: recommendations

The following recommendations are part of a paper which provides the findings and recommendations of the Open Access Repositories Working Group of the UUK OACG.

The full paper has been endorsed by the UUK OACG, and can be accessed on the group's page of the Universities UK website.⁸⁹

 To ease deposit and improve communications for authors, greater take up of metadata schema as applied at different points in the lifecycle of a research output is required. Discoverability of content in repositories will also be improved including clarity around version of record.

It is recommended that

- 1.1. Licensing terms be clearly articulated by publishers in machine readable form, including PDF and HTML renderings.
- 1.2. Both publisher's systems and repository platforms provide machine-readable metadata that includes <u>NISO/Crossmark</u> article version tags, licensing tags and embargo periods consistent <u>RIOXX</u>.
- 1.3. Repositories require a 'project/funder' field as part of metadata provision for a research output. Publishers are advised to collect funder information, at the point of submission and release this with the article metadata. To support this, publishers and other stakeholders are encouraged to make use of the <u>Funder Registry</u> (CrossRef).
- 1.4. Institutional repositories aim to be fully compliant with <u>OpenAIRE</u> to allow automated open access reporting to research councils.
- 1.5. Publishers should allow manuscript deposit under licence terms that facilitate text and data mining and allow academics to meet funder requirements.
- 1.6. Publishers, funders and research organisations are encouraged to actively engage with the <u>Organisation ID Registry</u> initiative.
- 2. To improve the efficiencies of workflows and integration of repositories into the wider scholarly communication landscape OA community-wide action is required.

It is recommended that

⁸⁹ UUK Open Access Coordination Group webpage, accessed: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

- 2.1. Publishers and institutional repositories fully implement the <u>JISC Publications</u> <u>Router</u>, supported by Jisc-negotiated publisher agreements for metadata and accepted manuscripts.
- 2.2. Providers of a Current Research Information Systems (CRIS) or related solutions be required to fully integrate with the Jisc Publications Router.
- 2.3. HEIs, funders and publishers integrate ORCID iDs into their systems and workflows.
- 2.4. Publishers share with authors and HEIs <u>Digital Object Identifiers (DOIs)</u> for research outputs at point of acceptance, where feasible.
- 2.5. The work being done by <u>CASRAI</u> to establish standardised contributor role taxonomies, CRediT, be supported by all stakeholders.

3. To ensure long term preservation of repository content.

It is recommended that

- 3.1. A study into the feasibility of a national preservation solution be undertaken, recognising that the British Library and Jisc are key stakeholders.
- 4. To improve the capacity of stakeholders across the OA community to exploit new technologies and to improve discovery and reporting mechanisms, effective working relationships and channels of communication are required.

It is recommended that

- 4.1. HEIs, Jisc, subject repositories and other stakeholders take forward as a high priority improvements in the user experience and user interfaces, leveraging relationships with commercial system providers and open source communities.
- 4.2. HEIs ensure that there is appropriate capacity for managing and developing repositories, including training and support.
- **5.** To improve discoverability, further work is needed to define services supporting open research that require a national approach.

It is recommended that

5.1. A study be conducted to explore the need for national repository solutions or 'hubs' for one or all of the big challenges – discoverability, sustainability and preservation. This study will consider costs and benefits, and ultimately seek to define the guiding principles and services that a national hub will provide for the benefit of HEIs, and the advancement of the UK government's ambitions around open science.

Annexe 8: OA Service Standards group: summary of recommendations

The following recommendations are part of a good practice guidelines publication of the Open Access Service Standards Working Group of the UUK OACG.

The full paper has been endorsed by the UUK OACG, and can be accessed on the group's page of the Universities UK website.⁹⁰

1. <u>Facilitate the implementation of Gold OA, and compliance with the policies of</u> <u>funders and institutions.</u>

Funders, publishers and universities will:

- 1.1. work cooperatively on any initiatives which affect multiple stakeholders, and on efforts to reach all the different sectors of the research community with clear and easily-understandable messages about Gold OA.
- 1.2. recognise the need to communicate those messages on a regular basis, and seek and exploit opportunities to do so, to participate actively in efforts to develop standard terminologies, and to promote their adoption across all stakeholder communities, especially in the UK

2. <u>Provide accurate, comprehensive easily-findable and readily-understandable</u> <u>information about Gold OA and policy requirements</u>

Funders, publishers and universities will:

- 2.1. ensure that clear and concise information about Gold OA is prominently displayed on relevant parts of their websites, so that it is readily findable and easily navigable,
- 2.2. support the development of centralised resources such as Jisc's <u>SHERPA services</u>, and ensure that they provide fully-comprehensive and up-to-date information about their policies.

Funders will:

- 2.3. provide clear and detailed information about their publication policies and requirements when researchers apply for grants, and also when grants are awarded;
- 2.4. take active steps, in collaboration with publishers and universities, to ensure that any changes in their policies are actively and regularly communicated to all stakeholder groups.

⁹⁰ UUK Open Access Coordination Group webpage, accessed: <u>http://www.universitiesuk.ac.uk/policy-and-analysis/research-policy/open-science/Pages/uuk-open-access-coordination-group.aspx</u>

Publishers will:

- 2.5. ensure that clear and detailed information about their Gold OA policies and procedures is prominent, accessible, and clearly labelled, via the websites of each of their journals;
- 2.6. work towards providing that information in machine-readable form;
- 2.7. wherever possible, provide links to the policies of the major funders in the key subject areas covered by each journal.

3. Promote efficient workflows by all stakeholders

Funders, publishers and universities will:

3.1. work cooperatively as they each seek to develop systems to facilitate the transmission of information between each stakeholder in machine-readable form

Universities will:

- 3.2. provide clear information to authors and publishers about designated contacts and procedures for the submission and payment of invoices
- 3.3. pay invoices promptly

Publishers will:

- 3.4. gather from authors the information necessary for smooth operation of all parts of the publication process at an early stage in that process
- 3.5. deposit relevant metadata with CrossRef once an article has been accepted for publication, and prompt corresponding authors to copy acceptance letters to designated contacts in institutional OA services
- 3.6. provide on invoices a breakdown of prices charged, including any discounts or additional charges

4. Promote and facilitate access and reuse of Gold OA content

Funders, publishers and universities will:

4.1. work co-operatively in developing and implementing efficient mechanisms to enable the versions of record of Gold OA articles to be made accessible, not only from the publisher's site but also via other platforms.

Publishers, libraries and universities will:

4.2. work together to ensure that robust mechanisms are in place for the long-term preservation of all scholarly publications.

Publishers will

- 4.3. where possible alert authors if they choose a licence that does not meet their funder's requirements;
- 4.4. ensure that all OA articles are clearly signalled as such in machine-readable form.

5. <u>Support monitoring of levels of take-up, compliance and expenditure</u>

The recommended good practice guidelines for Gold OA are that:

Funders, publishers and universities will:

5.1. work co-operatively in facilitating friction-free flows of information between them so that each can monitor levels of adoption, compliance and expenditure

Publishers will:

- 5.2. provide a designated point of contact and deal promptly with any problems that arise relating to the publication of individual articles
- 5.3. develop and implement policies for refunds in cases that do not meet their advertised standards.