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SOMEONE HAS TO PAY: THE GLOBAL SUSTAINABILITY COALITION FOR OPEN SCIENCE SERVICES (SCOSS)

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ABSTRACT

The Open Access (OA) and Open Science (OS) movement is gaining momentum with an increasing number of scholarly outputs openly and freely available to researchers and the community. OA and OS cannot however, be free for everyone. Someone has to pay for the infrastructure and there has to be a supporting economy. While many commercial publishers are charging for OA, there are many OA and OS infrastructure providers bearing the cost of providing infrastructure. Without funding, essential services that many are dependent upon to implement government and funder OA policies worldwide, are at risk of service degradation, reduced availability and even survival. Something had to be done.

In response, the Global Sustainable Coalition for Open Science Services (SCOSS) was formed in 2017 as a result of collaborations between key global stakeholders, with SPARC Europe as the co-ordinator. It aims to develop and apply a rigorous proposal and assessment process to provide guidance to the OA and OS community on what to fund. It uses a new financial crowd-funding contribution model seeking a three-year commitment for funding for the services it recommends. This will help improve the financial position, resilience and sustainability of these OA / OS infrastructure services and will help them on their way to find a mid to long-term sustainable solution for years to come.

The first open science services to receive assistance were Sherpa RoMEO which is operated by the Joint Information Steering Committee (Jisc, UK) and provides summary information of journal and publisher OA policies; and the Directory of Open Access Journals (DOAJ) which provides a list of over 10,000 peer-reviewed open access journals.

Since launching in November 2017, a growing number of university libraries from across the globe are committing to fund Sherpa/Romeo and DOAJ for the next three years.

This paper will provide an introduction to SCOSS and its purpose, governance, processes, and challenges and will give an update on institutional financial commitments to date.

Keywords

Open access, OA, open science, OS, services, sustainability, infrastructure, funding, Scholarly Publishing and Academic Resources Coalition, SPARC Europe, SHERPA RoMEO, Joint Information Steering Committee, JISC, Directory of Open Access Journals, DOAJ.

Introduction

Too many Open Access (OA) and Open Science (OS) services have been created using one-time project funding and are at risk of service degradation or failure. It is so easy for the millions of users of these OA and OS globally to not think about who pays for the essential infrastructure supporting OA and OS policies and research practices.

The Global Sustainability Coalition for Open Science Services (SCOSS) is starting to address a resourcing and sustainability problem currently facing OA and OS services which support transformation in scholarly communications, research policies and the way we use the internet to advance research, scientific endeavour and the betterment of society.

This paper describes how SCOSS was formed and how it is working to develop processes to assess OA and OS services to ultimately receive funding via crowd sourced funding campaigns. It is part of a campaign to increase global awareness of the need to fund key OA and OS services to ensure their financial sustainability.

The need for the Sustainable Coalition for Open Science Services (SCOSS)

Organisations such as universities, research funders and governments are increasingly implementing policies to promote OA to research publications and data. Research organisations, researchers and authors are wanting to disseminate research outputs on an OA basis in order to broaden the access and increase usage and impact of their research.

It has taken decades to achieve a growing percentage of annual research outputs worldwide being available via OA, however there are signs – increase in OA policies and funder mandates, heightened awareness, a growing open source and commercial repository industry, increase in OA discovery tools, other services, integration with CRISes - that the OA movement is gaining momentum.

Given this growth, the continued successful implementation and monitoring of OA and OS policies and the successful operation of open research dissemination, is depend on a number of key open science services. Knowledge Exchange has done much preparatory work in this field culminating in its *Putting Down Roots, Securing the Future of Open Access Policies* report. SPARC Europe took forward the recommendations to implement something concrete to address the issue. A number of critical OA and OS support services have been created over the last 15 years. The scholarly communication community has come to depend on many of them when implementing their own open access goals e.g. the Directory of Open Access Journals ([DOAJ](#)) which assesses the quality of and provides access to OA journals; and [SHERPA/RoMEO](#) which records publisher copyright and self-archiving policies, to name two.

OS services have been developed to meet community requirements, often growing organically as the needs emerge. They have often been resourced through local or time-limited project-based funding, which may not be assured for the future. Many service providers are uncertain about the future of the OA and OS services they provide since they are based on unsustainable funding models.

There may not be an alignment, equity or fairness between who uses the service and who pays. Who pays and supports may not even be known and little thought of who pays is often given by the end user, who, as can be expected, probably takes the availability of the service for granted. Usage of some OA and OS services has now grown such that this is no longer sustainable for the provider and large user numbers and groups bring about a new situation. For example, the RoMEO API gets nearly 4 million hits per month from over 200 countries. Another example is DOAJ which serves up to 2 million requests per month via the API alone.

Despite a significant and growing need for OA service support, maintenance and further development has now become an issue due to financial constraints and pressures to

economise. Furthermore, with no sustainable model in place, stakeholders are less likely to be able to build services into long-term strategic solutions for local OA and OS implementation.

The key risk is that without a new sustainable solution for the world's OS services, some services are likely to fail. OS services require assured funding in order to pay for staff to operate them, governance and service development, transformative technological innovations, user experience testing, security measures, and increasingly robust local or cloud and scalable infrastructure to support growing content and an increasing user base and increasing usage.

Furthermore, and more importantly, since policy implementation is very much dependent on certain services, policy is also at risk of not being realised. Currently several of the open science services are funded on an unsustainable, localised and temporary basis. There is a real risk that without a sustainable funding model being brought into operation, that the services would have to fundamentally change their operation, in scope, coverage, accuracy or responsiveness; be forced into charging at the point of use or raising some other pay-wall; or in extreme cases, close down entirely.

Formation of SCOSS and SCOSS governance

In late 2016 [SPARC Europe](#) considered its options to address the sustainability issues outlined above and began by talking to other concerned stakeholder groups including the Australasian Open Access Strategy Group ([AOASG](#)), the Council of the Australian University Librarians ([CAUL](#)), the Confederation of Open Access Repositories ([COAR](#)), the European Research Council ([ERC](#)), [EIFL](#), the European University Association ([EUA](#)), the International Federation of Library Associations and Institutions ([IFLA](#)), [LIBER](#), [Science Europe](#) and [SPARC](#) (US).

Via a number of online meetings of interest group members, the idea for an organisation like the Global Sustainable Coalition for Open Science Services (SCOSS) was formed and SCOSS began to take shape.

The vision

The following vision for SCOSS was developed:

An infrastructure of freely available open science services funded by policymakers and stakeholders, committing to provide sustainable funding for the operation and development of key services.

The mission

A SCOSS mission statement was developed:

To provide a new co-ordinated cost-sharing framework to ensure that non-commercial OS services that underpin the development of wider global open science are sustained in the future.

Governance

It was initially envisaged that SCOSS would be directed by the following governance structures:

SCOSS Executive Group – which reports to the SCOSS Board and is responsible for the day to day operations and calls for funding proposals, and for communicating with the public. Members are elected by the Board.

SCOSS Board – which is comprised of representatives of member institutions and organisations and is the decision-making body of the coalition and decides on the applications for funding.

SCOSS Advisory Group – which is comprised of expert representatives from member institutions and organisations and which has an advisory role to the Board. This group evaluates

funding proposals, makes informed recommendations to the Board and would also maintain a registry of Open Science Services.

It was envisaged that these structures would provide SCOSS with the necessary governance functions and would in effect provide for a separation of powers.

As of 12 March 2018 the Chair of the SCOSS Executive is Vanessa Proudman and the Chair of the SCOSS Board is Martin Borchert. There is currently no chair of the SCOSS Technical Advisory Group. SCOSS is seeking to increase membership for all three governance structures to further the operation of SCOSS and to increase its resilience and broaden global stakeholder representation. Please contact info@scoss.org or the authors if you are interested to represent your organisation or region of the world in some official capacity in a SCOSS committee role.

Initial process

Between late 2016 and Feb 2017, the interest group discussed the SCOSS proposal, the terms of reference, governance structure and pilot services that would be selected to work with in the coming period. Once formed officially in Feb 2017, SCOSS designed an application form which services needed to fill in to make the case for their need for funding. The form requests a range of information from applicants including details on income and costs, the technical solution, the value proposition, sustainability plans, the governance model, foresight work plans, etc. This forms the basis of evaluation, using a five-point evaluation scale for each criteria. The template and evaluation procedure are provided in the presentation slides and the SCOSS website.

Both SHERPA/RoMEO and DOAJ responded by submitting an application and both were asked by SCOSS to provide additional information as SCOSS was still refining its application template.

The evaluation of the proposals from SHERPA/RoMEO and DOAJ resulted in SCOSS supporting both applications for funding support.

For information on SHERPA/RoMEO and DOAJ please see the SCOSS website or the SHERPA/RoMEO and DOAJ websites.

The requested contribution from each funding institution has been based on what the coalition estimates it can achieve to reach the targets of each service across the three years. The coalition was cognisant that the €4,000 and €2,000 amounts suggested from large and small institutions may be considered high by some, but wanted to achieve efficiencies in the system in that fewer payments of a greater amount are easier to administer than a greater number of smaller payments. Neither SPARC Europe or the infrastructure services involved benefit from having a subscription management service to manage contributions, like that used by commercial publishers. As compared to the huge sums spent on subscriptions, SCOSS feels that the suggested amount is a small amount to pay to help us meet the targets efficiently. Considering this is a new initiative, we have set these targets to include early adopters and to factor them into a sum we believe will be needed to obtain the targets. For DOAJ, we need *at least* 243 funders paying the higher fee per year to meet the target. For Sherpa/RoMEO, we need *at least* 382 to pay the higher fee per year to meet the target.

More complex contribution structures, involving contributions of content and usage by continent and nation, were modelled and considered, however these became very complicated very quickly and were not considered to have added much value. For every possible model, coalition members could identify legitimate exceptions.

For DOAJ the funding target is €970,000 euros over three years. For Sherpa/RoMEO the target is €1,529,935 euros over three years, for an overall total of €2,499,935 Euros over three years. The third year is meant to form a one-year bank reserve. UK institutions are already funding Sherpa/RoMEO via their Jisc subscription so do not need to contribute additional funds for Sherpa/RoMEO.

Not all institutions are in the position to fund such services, which means that other organisations will pay to facilitate access to these services for all; as a community committed to implementing Open Access and Open Science, we can help sustain our infrastructure for years to come.

The stakeholder group also designed communications and recommended contribution levels and processes for the crowd source funding campaign. The next step was for SCOSS to go public with its crowd funding campaign via its website <http://scoss.org/> which was launched in November 2017 and by writing to key library consortia around the globe to request consortium level promotion of the SCOSS campaign and to consider funding either or both of the SHERPA/RoMEO and DOAJ.

For each of the services (DOAJ and SHERPA/RoMEO) an organisation chooses to help support, the following is recommended:

- Large organisations from high-income countries would contribute €4,000 annually for a period of 3 years.
- Small organisations from high-income countries would contribute €2,000 annually for a period of 3 years.
- Funders would contribute €8,000 annually for a period of 3 years.
- For organisations from low and middle income countries and others with lower incomes it is suggested that they contribute €500 per year for 3 years.
- A 25% discount would be deducted for consortia contributions of 10 organisations or more.
- Organisations may choose between paying up front for 3 years or annually.
- Funding transactions will take place between the service provider and the funder, and not via SCOSS.
- Funding institutions unable to pay the recommended contributions can negotiate an amount down to €500 per service.

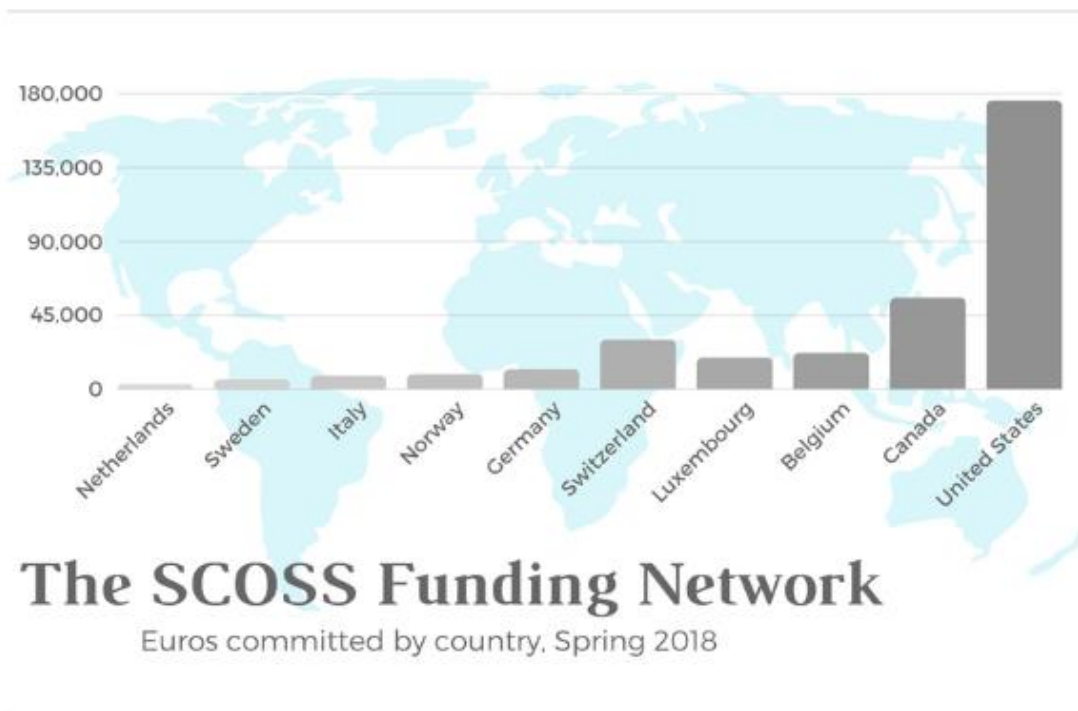
Large and small organisations can be defined using the following criteria: size of faculty, economic health, and relative position in the region and organisations are free to self-nominate into large and small categories. One region of the world has applied a model that institutions over 20,000 fte can consider themselves as large institutions.

Financial support to date

SCOSS has been operating for about five months since its appeal for funding in Nov 2017. During this time a total of €340,000 has been committed to by institutions worldwide. Funding commitments to date can be represented as such:



The U.S. and Canada have been the biggest contributors to date, followed by European nations. Not shown here is an in-process commitment from Australasian university libraries.



SCOSS is expecting the funding for SHERPA-Remeo and DOAJ to be quite even over time. Significant progress is being made, with significant work yet to do. SCOSS will publish updates on its website.

Process going forward and future developments

The SCOSS group will evaluate the pilot and depending on the outcome, will publish a new call once this has been completed. The pilot will be evaluated against a set of agreed criteria. Future calls for proposals will be issued by the SCOSS Executive Group, which will manage the call. They will verify the completeness of funding applications and will then pass on relevant applications to a SCOSS Advisory Group granted with evaluating funding applications.

SCOSS Advisory Group members will evaluate proposals independently and will provide their recommendations to the SCOSS Board. The SCOSS Board will make the final decision as regards to which proposals are to be supported for crowd source funding campaigns.

Information on successful bids will be passed on from the SCOSS Board to the SCOSS Executive Group with requests for funding, either to be borne directly by organisations or passed on as non-binding recommendations to their members.

For the remainder of 2018, SCOSS is considering ways to develop the register of OA and OS service and infrastructure providers together with others. A number of crowd-sourcing options will be considered for creating the register before the preferred platform is adopted. The registry of OA and OS service and infrastructure providers would be made openly available from the SCOSS website.

SCOSS will then prioritise OA and OS services listed on the register for future funding campaigns and will then call for additional proposals for funding support from the prioritised OA and OS service and infrastructure providers.

The coalition will then implement an additional communication package to promote to institutions and funders for subsequent financial support.

Challenges

Having made considerable progress in the first year, SCOSS has some challenges ahead, which are summarised here.

Governance – Limited SCOSS marketing has seen an insufficient number of nominations to date to fill positions in the governance model and structure described. There is currently one group of individuals performing all the tasks of Executive, Board and Technical Reference Group. This may do for a while when SCOSS is still small, but will become unmanageable as SCOSS and the workload, such as answering questions, continues to grow.

Communication - Obviously the world is a large and complex place, and the coalition has only limited resources, and without the resources of a large publisher's subscription services, it will take some time for the coalition to extend its communications and broadly to engage all potential markets. Most continents have existing consortia and library networks which the coalition can tap into to promote the SCOSS model.

Scalability – With additional resources, the coalition will be able to scale over time – scale to consider additional services for funding and scale to promote them and facilitate a robust economy around these OA and OS services.

Collaboration – A small resource-sparse coalition such as SCOSS will need to rely on the benefits that collaboration with other like-minded groups can bring. SCOSS will need to further develop its networks to carry its communications and put the SCOSS model forward.

Capacity - Being run by a small number of volunteers, SCOSS has limited capacity to undertake developmental work on its processes and resources and to expand the range of OA/OS infrastructure services to be supported in future.

Perception of value – the coalition considers the suggested contribution amounts of €4,000 or €2,000 are necessary to ensure some efficiency is achieved in the system. The amount for DOAJ for example, a system which links to over 11,000 fulltext journals, is very small compared to the subscription fees paid to journal publishers. Some institutions have fed back that the amounts are considered high. Some institutions were already contributing €500 p.a. and see the SCOSS suggested contribution as a serious price escalation. The coalition regards paying many €500 amounts to be very labour intensive. Services cannot survive financially on processing such small contributions. All financial contributions are welcome and institutions can contribute as little as €500.

Refining the model – the proposal form has been refined through practice. It is also expected that other aspects of the model will be refined over time.

Achieving goals – SCOSS has still a considerable way to go to achieving its crowd funding goals for the first two supported infrastructure services, let alone future supported infrastructure.

Conclusion

SCOSS is a new and still developing organisation underpinned by SPARC Europe with the intent of selecting OA and OS services for crowd sourcing of funding to improve their financial sustainability, resilience, development and service continuity.

Having achieved financial contributions of €340,000 of a target of €2,500,000 over three years, in the first five months, with very little resourcing and person-power behind it, the future of the SCOSS endeavour looks promising. SCOSS, DOAJ and SHERPA/RoMEO need to continue to promote the funding campaigns, more fully develop its registry of OA and OS services, select services for future funding campaigns, while meanwhile increase the size of and representation within its governance structures.

SCOSS above all wants to raise awareness of the issue of how to sustain essential open science services in the future across the globe with this concrete example. It is addressing the issue of financial weakness and unsustainability in the global OA and OS infrastructure ecosystem. It's easy for us all as individuals to jump onto SHERPA/RoMEO and DOAJ, for example, and use them, without giving thought to how these services are provided and maintained. Someone has to pay, and someone has to organise how much we pay, who we pay and how we pay.

Please reach out to the authors if your organisation or consortium is able to assist SHERPA/RoMEO and/or DOAJ through providing funding via the SCOSS initiative. We still need to raise a considerable amount of money. Please also do contact us if you are interested to represent your consortium or country on the SCOSS Executive, Board or Advisory Group.

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