

Research Publishing Models: A Guide for University Managers

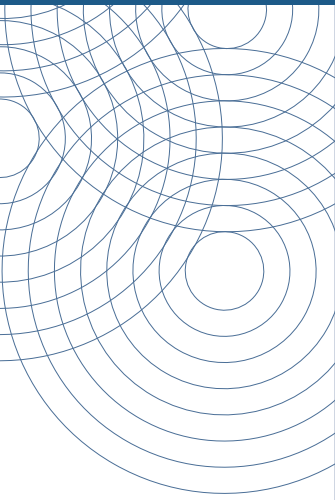
by Alma Swan, Michelle Willmers & Thomas King

One of the core underpinnings of the open access publishing movement is public access to publicly funded research. This shift is premised on the assumption of knowledge as a public good and on the understanding that a large proportion of global research is funded by taxpayers' money or income from civil society organisations.

Today's globally networked scholar is called on to assume new roles and responsibilities. Engaging in new forms of scholarly communication and publication is one component of this expanded responsibility sphere – as is the need for strategic engagement with securing research funding.

Dissemination of research is no longer limited to a prized journal article. Scholarly communication is becoming an intrinsic component of knowledge production, taking place throughout the research process in the production of data, informal communications and a range of genres. Researchers must plan for communication needs and costs when conceptualising research and sourcing funding.

“ Dissemination of research is no longer limited to a journal article. Scholarly communication is becoming an intrinsic component of knowledge production, taking place throughout the research process.



Universities are expected to support researchers in their new roles. The global revolution in scholarly publishing, along with a highly competitive higher education environment, means institutions need to professionalise communication and take on the role of publisher: curating, preserving and disseminating knowledge in various formats through multiple channels to a broad audience.

How does an institution begin to engage with new forms of scholarly communication and begin the task of capturing – and therefore leveraging – its knowledge output?

Scholarly communication requires institution-wide engagement by a range of stakeholders, in ways that are largely contingent on historical and contextual factors within the institution. Therefore, while there are extensive publicly available guides on scholarly communication, institutions need to articulate strategies based on their objectives, capacity, infrastructure and other factors.

An institutional policy can provide a scaffolding to guide implementation, inform governance, identify revenue streams for capacity development, and make explicit the contributions of various stakeholders. An open access policy typically forms the overarching structure for engagement, complemented by other policies such as repository and intellectual property policies. Librarians are ideally placed to facilitate knowledge access across an institution, and to play an active role in disseminating and facilitating the re-use of knowledge.

Current publishing models

Proprietary or “paywall” publishing

The dominant mode of scholarly publishing has been for-profit commercial publishing. Publishers make returns by collecting research, applying peer-review, editorial and formatting services, collating articles into subject-specific journals, and selling subscriptions for these works to academic libraries, scholarly societies and researchers. Short-term access to articles – typically 24 hours – is on a pay-for-use model.

Costs

The primary costs of journals are in the form of library subscriptions. Prices for journals have skyrocketed, with oligopolistic business practices and inelasticity of demand contributing to average spending on journals rising by 302% from 1986 to 2004. Simultaneously, library budgets have been cut, forcing reductions in the number of subscriptions, so that libraries can retain access to the most in-demand journals. This has been referred to as the “Serials Crisis”.

Part of the problem is the disjunct between the producers and users of research (researchers) and the retailers (publishers), since purchasing decisions are made through libraries. Scholars often have no idea of the costs or options involved, and so exert no pressure on publishers to adopt more competitive business practices, lower prices or make their work more accessible.



Scholars often have no idea of the costs or options involved, and so exert no pressure on publishers to adopt more competitive business practices, lower prices or make their work more accessible.

The second, incalculable cost of the proprietary system is lost opportunities by society to use research for development. The restriction of research access to paying customers – academic libraries – excludes industrial and commercial use of research. There is evidence that companies and economies benefit from greater access to scientific information.

Open access publishing

At its core, open access is about making research more visible and accessible, and therefore more widely seen, read and used. Rules of citation still apply for academic use of research, and open access articles have been positively correlated with high citation rates. Open access articles are often the only ones accessible by businesses, NGOs and civil society. Together, these forms of impact increase an institution's visibility and reputation nationally and worldwide.

Fears about the possible costs of open access publishing are largely unfounded. One of the principles of open access scholarship is a reduction in institutional publishing expenditure. Librarians in particular have embraced open access as a way to reduce overall spending on publications.

The financial model redirects funding from the demand-side (library subscription budgets) to the supply side (open access publishers and repositories). Library budgets become channels for paying for repository upkeep and article processing charges. Implicit in open access is eventual cost savings as the publishing industry converts to an open model. Given the wealth of open access materials, institutions can realise short-term savings by seeking out open access content to replace expensive proprietary content.

The discourse on operationalising open access focuses on two systems: the “green route” and the “gold route”. In Southern Africa, where other research objects such as policy briefs and media articles are widely produced, this is just one area to explore. But looking at both models is necessary for any discussion on how African institutions can move to open scholarly communication.

Gold (APC) route

The gold route involves publishing in an open access journal, which provides the dissemination and curation services of current proprietary publishers. This form of

Open access in a nutshell

	GREEN ROUTE
LOCUS OF ACTIVITY	Open access repository
COSTS PER ARTICLE	Marginal cost to repository owner
LONG TERM	Running costs
PRESERVATION	Institution (grey literature)
ACCESS	Grey literature: Immediate Traditional outputs: 6–18 months
CONTENT	Journal articles, books, book chapters, grey literature
AUDIENCE	Academic, government, civil society

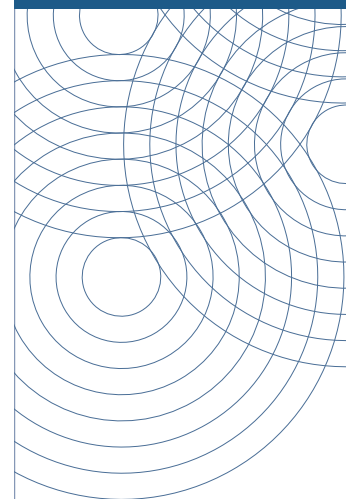
Proprietary vs open access at the University of Cape Town

Data from the University of Cape Town (UCT) show that the university spends USD 5.5 million annually on journal subscriptions – print and electronic – and that more than 1,100 journal articles are published.

	GOLD ROUTE	SUBSCRIPTION
	Open access journal	Subscription/Closed access journal
	Article Processing Charge (author) – Average USD910	Subscription charges (end user) Page charges
	–	–
	Publisher	Publisher
	Immediate to all audiences	Immediate to subscribers
	Journal articles, book chapters	Journal articles, book chapters
	Academic, government, civil society	Subscribers

If UCT opted for the gold open access route and paid the average article processing fee of USD910, the annual cost to the university would be around USD 1 million.

This benefit does not take into account efficiency savings for the UCT research system or the societal benefits of widely disseminated research. It is premised on more journals going open access.



publishing is funded through government, society or institutional grants. Some open access journals charge authors a fee known as the article processing charge (APC), but most journals do not charge any fees.

Costs

APCs constitute the primary cost to authors and institutions in gold open access publishing in the minority of cases where the journal does levy a charge. These charges are paid by the author, funder or institution, and cover the running expenses of the journal.

Article charges have become contentious among scholars whose introduction to open access has been through hearsay and second-hand or incorrect information. As scholars are often unaware of costs already accruing to their institution in the publication process, gold route publishing may seem an unwelcome additional expense, rather than a redirection of existing financial models.

This is a legitimate worry, because there has been little opportunity to cut subscriptions. The only way this transition can occur is by converting subscription journals to APC-funded open access journals, and publishers have been reluctant to change their business models.

Several APC-charging journals have waivers for scholars who cannot afford the full fee. Most waiver systems are based on a country's development status, specifically per capita GDP. Not all Southern African countries can take full advantage of waivers, but researchers should inquire about open access publishers' waiver policies.

"Gratis" versus "libre"

Gratis and libre open access describe two levels of openness. Gratis open access refers to work that is freely accessible and readable, but has limited options for re-use; libre open access is work that may be reused, subject to licensing decided upon by the author. Many in the open access community advocate libre open access as offering the greatest potential benefits, but gratis open access also offers potential societal development through the dissemination of new ideas.

Green (Repository) route

The green route focuses on self-archiving research outputs, published through traditional channels, in subject-specific or institutional repositories. These materials are made available to all online, without restrictions or paywalls.

Embargo periods are sometimes required. Publishers can retain exclusive publishing rights for a period, usually from 6 to 18 months, after which articles can be hosted on repositories. Embargo periods apply to post-prints (articles that have undergone peer review but have not received other value-add services); pre-prints (which have not gone through the publisher's editorial process) can be hosted immediately. Measures must be put in place to ensure embargo periods are honoured.

“Repositories should be built to a set of technical standards that make them interoperable. There should be optimal licensing conditions for content so it is also machine-readable and available for computational analysis.

Voluntary archiving by researchers has been poor and is unlikely to improve without incentives. A central challenge for the green route is reliance on a sustainable repository to curate, deposit, describe and store content.

Creating repositories requires significant investment in e-infrastructure designed to facilitate the curation and preservation of content. Repositories should be built to a set of technical standards that make them interoperable. There should be optimal licensing conditions for content so it is also machine-readable and available for computational analysis. Without these aspects, the potential impact of archived work is drastically reduced.

Costs

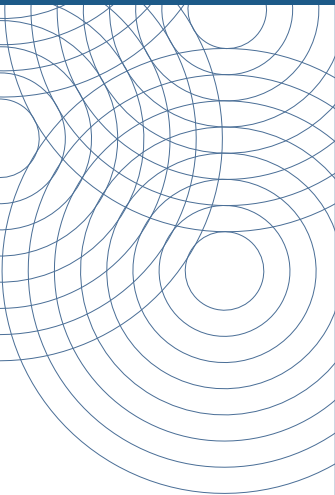
The primary cost is development and maintenance of the repository. This can be subdivided into technological/infrastructural – development, hosting and bandwidth costs – and human resources – including technical, content and quality assurance staff. An additional expense might be soliciting material from researchers. To reduce costs, institutions could use the many open-source resources available, including repository software and best practice guides and strategies.

Hybrid open access

“Hybrid” journals are subscription-based journals that make some articles openly available in return for a fee, typically around USD3,000. The hybrid path has been suggested as a means for publishers to make a transition to open access, by charging fees for open access articles equal to average subscription revenue per article. But since subscription costs are not decreasing in line with new revenue from open access charges, many see this as a way of raising revenue for publishers. The hybrid model has not been as popular as full open access models, possibly because of the higher cost to authors.

Implications for impact

Both the green and gold routes offer increased potential impact. Scholarly material is free and available. But the structural constraints of each approach contribute to distinguishing factors.



Immediacy

- Gold open access offers immediate access to all as soon as an article has been published, but there is a time delay during peer review.
- Green open access materials are subject to an embargo, usually 6–18 months. This delays access, which must be taken into account for disciplines and audiences that need up-to-date research.

Audience

- Gold open access is entrenched in a traditional view of academic outputs. As such, it is predisposed to an academic audience.
- Green open access repositories offer institutions a potentially user-friendly showcase for all research as well as the additional option of making other outputs freely accessible.



This work was carried out by the Scholarly Communication in Africa Programme with the aid of a grant from the International Development Research Centre, Ottawa, Canada



This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of the license, visit <http://creativecommons.org/licenses/by/4.0/>