

## Does Plan S Serve the IEEE Control Systems Society the Dingo's Breakfast?

Plan S is a drive toward open access (OA) scientific publishing from cOAlition S, a consortium of mostly European funding agencies, but it should be said, not yet all European funding agencies. Launched in September 2018, Plan S obliges researchers funded by these agencies to publish the outcomes of their sponsored work in exclusively OA venues, beginning January 2020. That is, there are no subscription or other barriers to free public access to the papers. The cost of publishing is borne by the authors (purportedly by their funders or organizations) of the accepted papers via an article processing charge (APC), which can be waived. At present, all of the IEEE Control Systems Society (CSS) journals are *hybrid*, with OA papers being freely and immediately downloadable from IEEE *Xplore*. The APC is currently US\$2045. However, cOAlition S prohibits publication in such hybrid journals or *mirror* journals, where a subscription journal possesses an OA counterpart identical in scope and editorial board. It also seeks to standardize and limit APCs. The OA push has become quite doctrinaire, and it calls, inter alia, for sanctioning noncompliance.

This bimonthly message seeks to identify some of the questions about Plan S and the evolution of scientific publishing. This analysis will attempt to explore this from a CSS and immediately contemporary perspective. Watching the difficult passage of Brexit as I write this provides an unsatisfactory backdrop to a fervent but underdeveloped plan to take back

control of a process without a full enunciation of exactly what that entails: notably, economically in the long term and on an international stage. The *dingo's breakfast* is a yawn, a leak, and a good look around (that is, no breakfast at all). The challenge to the CSS in this period of significant uncertainty in the realm of publishing is to navigate our activities to the benefit of members within the constraints of the best scholarship and financial viability. You would reckon that the CSS should be at home making robust decisions under uncertainty. I guess we will find out.

I am neither a fan of the Plan S OA model nor a detractor. I simply know too little about how it is supposed to operate. The principle of free public access to publicly funded science is appealing and easy to support; however, so too is the idea of peer review and scholarly quality control. There are some (mostly Google, I suspect) who argue that arXiv and search would work as well.

What would it cost to have my paper go viral? I am a devotee of the music and writings of David Byrne. In his 2012 book *How Music Works*, Byrne provides insight into the economics and incentives of music as technologies. Recording, distribution, and marketing have changed over time. His message is that this was largely unpredictable and that it remains fluid. Admittedly, there was no Plan M.

*IEEE Access* is an existing open-access broad-spectrum IEEE journal started in 2013. There are other IEEE OA journals—for example, *IEEE Photonics Journal*, which migrated from subscription to OA more than five

years ago. These ventures have been financially successful so far. The IEEE has also developed a coordinated accelerated OA scheme as a contingency to the launch of Plan S. Intriguingly, this scheme has adapted and adjusted as Plan S's pronouncements have crystallized, for example, with regard to its objection to hybrid journals (which occurred in late 2018). While the deadline for Plan S has been moved to January 2021 (from January 2020), there is much work going on to prepare for its commencement. However, because these requirements fall to newly funded projects, the flow of papers will be considerably later and more gradual in onset. The accelerated part of the IEEE plan deals with bypassing some of the internal IEEE approval processes by aligning open journal names and scopes with their Societies.

A problem in developing a cogent response to Plan S is that there is a confounding of objectives of OA beyond the access model. Rapid review (or *short sub-to-pub time*, as it is known) and sound science emphasis on correctness without judgment of significance are instances. The IEEE plan certainly sees rapid review as implicit. Were that to be adopted in the CSS, it would require a wholesale change of expectations of reviewers and editors. This is feasible, but it would typically be much faster even than our review for the IEEE Conference on Decision and Control or *IEEE Control Systems Letters*. As a University of California (UC) academic, I also have watched the fractious negotiations between UC libraries and Elsevier as they seek an amenable new five-year contract. Even in communications from UC President Janet Napolitano,

the Elsevier deal is conflated with OA and APCs. When two negotiating sides incorporate into discussion the consideration of something as currently nebulous as Plan S, it is not altogether surprising that they might talk at cross-purposes. It is easy to convince oneself that this is a turning point in the business of scholarly publishing. However, that seems premature.

At the heart of the Plan S proposition is the absence of a sound and agreed upon business model, which concerns the CSS. Our publication activities are a significant source of income, which is then used to provide member services. Depending on how OA impinges on conferences, that other major part of our income might be jeopardized as well and in several ways. Think of APCs as part of the conference publication process. At present, the CSS derives income from downloads of papers from IEEE *Xplore*. There are the per-article costs for private downloads (usually from industry) and a share of the subscription income from libraries (distributed based on a proportion of content and proportion of downloads, via a rather opaque formula). Certainly, subscription and download income would be replaced by APCs under Plan S. However, these APCs would be standardized, capped, and subject to continual downward pressure unilaterally, one suspects, as with everything Plan S.

Other problems immediately appear. Would APCs be reduced or waived for authors from low-income situations, those who are retired, unemployed, from low-income countries, or without grants? Who would decide and on what potentially neocolonial or patronizing basis? How would industry be expected to contribute, if at all, to its use of research? Where does this lead for books? Does this imply that scientific research should become part of one giant Wikipedia, or would the portal to all research eventually fall to Google Scholar? What is the grand plan?

The business of scientific publishing was examined in the mid-1990s by

the Association of American Universities (AAU). Value-adding activities were broken into five broad classes: 1) creation of content, 2) certification of content (that is, peer review), 3) content preparation, editing, and graphical design, 4) distribution, and 5) archiving. At that time, AAU argued that universities were largely responsible for items 1, 2, and 5, with the publishers dealing with numbers 3 and 4. Of course, this has changed significantly, with distribution being chiefly electronic and archiving falling to the publishing houses (together with management of the download revenue stream). However, significantly, the value add from certification rides supreme in academic evaluation. Allied to the certification quality measure, a glut of publication citation and impact metrics exist that purport to quantify the unquantifiable and displace expert judgment with simple computations. These measures are often hard coded into the evaluation of individuals by the grant-giving agencies, perhaps even those pushing Plan S. This is where the dichotomy becomes evident. Where does the incentive for quality reside?

The CSS prides itself on the high quality of its publications and currently sees a direct link between this and the download volume (and, therefore, income). The proposed system would see this replaced by APC income, which is proportional to the number of papers published and likely to be subject to the command economy of Plan S caps. Across the OA and hybrid publishing world, APCs are set to reflect, in part, the caliber of the journals. The more impactful and selective venues can set a high APC, which offsets the workload associated with a high rejection rate. The IEEE, of course, calculates APCs to reflect income replacement for current operations, which varies across the Societies. How might that change in the future with the dictates of Plan S? Who knows? This is the problem, that the economic solution is incomplete in addressing the many objectives of scientific publishing: no-

tably, the burgeoning effort in individual performance assessment. There is an assumption that learned societies—for example, the CSS—will submit to managing quality control without a say in the economic model. We could be served the dingo's breakfast cold.

Perhaps this conundrum is best seen in the archiving aspects of scientific publishing. As I stated previously, that used to be the province of university libraries, but it has moved to be part of the business model for publishing houses, both commercial and learned society ones. IEEE *Xplore* is a major IT undertaking with significant costs borne in article preparation and uploading (including indexing and metadata creation) that might be paid for by APCs. However, there is also a significant and ongoing cost in maintenance and tracking. One might expect that these costs could be amortized against APCs. However, what would be the incentive to scan in old materials or ensure that the database is up to date and exhaustively comprehensive? It is easy to perceive falling back to the era of stretched budgets driving increasingly patchy availability of material. Effectively published papers become a sunk cost in this system.

"May you live in interesting times!" goes the (apocryphal) Chinese curse. It is interesting that appealing but embryonic proposals, such as Plan S or Brexit (or, indeed, many areas labeled populist), can be agreed upon without a clear development of the endgame model (particularly in terms of economic but also societal valued). I am reminded of the (nonapocryphal) French *bons mots* on *commence par être dupe* and on *finit par être rogue*. That is where the CSS finds itself as a central player in the scholarly publishing business for control. The task for the leadership is to navigate this change and not wind up going rogue with the dingo's breakfast to show for it.

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