

~~Plan S~~: Reader pays or author pays?

Bram Nauta

Professor/Chair IC Design and department head Electrical Engineering, University of Twente,
Enschede. The Netherlands

President IEEE Solid-State Circuits Society

January 31, 2019

Version 1.1: Typos removed, bit rephrased, order of 20 problems is changed

Plan S positions itself as pro- Open Access, which sounds all positive. Very few Scientist are against this. But the real discussion is about: Who pays the cost? There are basically two models:

- 1) Reader pays
- 2) Author pays

“Reader pays” is framed in Plan-S as “behind paywall” and sounds like something bad. However, it is normal that you pay to read material that has been reviewed and edited. I pay for my newspaper, even on-line. News sites are “free” because they are either paid with tax money or there are other sponsors who pay and receive advertisement income and collect your data. Even the all-respected NWO chair Stan Gielen wrote an “open” (sic!) letter in the Dutch NRC newspaper to defend plan S. However, the NRC newspaper is paywalled! I pay a yearly subscription to read my quality newspaper. This shows how normal it is to read “reader pays” material. Really, this is not the problem.

The problem in science is that Commercial Publishers took over a part of the publication business and drove the subscription fees sky high. The universities were not able to negotiate reasonable subscription fees. The universities did not unite, did not collaborate and lost this game. Now we have Plan S to solve all of this? The answer is no, it will make things worse. Plans S is just very good for commercial publishers. They will now make their money via option 2: “Author pays”. And they will even make more money than now because “Reader pays” publications will be killed by rigorous approach and pretended urgency in plan-S. The “authors pays” authors will be driven into the arms of the commercial publishers. Plan S has been announced with a lot of noise and it will be politically hard to stop this. So, it has to be adopted to reality and be used to limit the power of the commercial publishers, instead of helping those.

“Reader pays” is not always bad. Like my example of a newspaper above, the fee just has to be fair for the service provided. In science there are many so called ‘Learned Societies’. Examples include the Royal Society, the National Academy of Science of the USA, the French Academy of Sciences, the American Association for the Advancement of Science (AAAS), the American Physical Society (APS), the American Institute of Physics (AIP), the Institute of Physics (IoP). The majority of the professional engineering societies such as ASME, AIChE,

and the largest one, the IEEE, (Institute of Electrical and Electronics Engineers) which is about my own field. I pay exactly 237,- US\$ per year for my IEEE membership and read all publications in three technical societies, receive discounts to conferences, free online tutorials. The IEEE is a non-profit organization and the money "left over" is used to stimulate the technical field with awards, travel grants and scholarships. Especially the early career members benefit from this. Young members even pay only a tiny fraction of the regular fee.

For my own IEEE Solid-State Circuits Society with 10.000 members paying 200Euros per year, the income is 2MEuros per year. We publish 350 journal papers + 650 conference papers per year, so 1000 in total and thus the income is about 2kE per paper. All this income is spent to execute the learned societies activities. When moving from "reader pays" to "author pays", the publication cost per paper would be 2kE. This cost can be lower since industry and large libraries also pay for reading for non-members. So yes, the Article Processing Charge (APC) in IEEE is 1000 to 2000 Euros. It looks expensive but it's because there are simply more readers than authors to pay.

My 20 problems in Plan S are:

OA journals with a lower standard will be leaning towards accepting more papers because it generates direct income. Some OA journals even do not require novelty of ideas. And some even do not review properly. This will cause a race down in quality. There are already many "predatory journals". On a weekly basis, I receive emails from them to accept my even already published work on their platform for a few hundred of Euros. Yes, this way it's cheap to publish OA, but what is it worth?

OA journals with a high standard will want to raise the "author pays" income because it's prestigious to publish there. It's the force of the market. Plan S simply states that the APC will have a maximum, but I'm convinced commercial publishers will still be smart enough to maximize their income. They hire the best lawyers and circumvent-engineer the rules. (by the way, did you know an iPhone is formally a "music player"?, so no USB charger obligated). That is their obligation against their shareholders, their mission.

Learned societies have a solid quality control by solid peer review and pride themselves for high quality. This is a valuable asset that can hardly be overestimated. This is built in many decades of hard work by many volunteers and might suddenly get destroyed by Plan-S. The race down in quality will dilute the influence of reviewers. The end result may be that everything is published everywhere and the reader has to figure out him/herself what is right and wrong in the papers.

Plan-S tries to impose a one size fits all approach. There is no difference made for different scientific fields with different publication cultures. Plan S focuses on those scientific fields where there are already open access alternatives. In learned societies these are rare. With many hundreds of journals in IEEE there are only four open access. To accommodate the current funders demands on OA, most journals are hybrid. Plan S is too rigorous in its implementation and wants to ban hybrid journals. The reason is to prevent double dipping (both "author pays" and "reader pays"), but learned societies will reduce the "reader pays"

fees for a journal when the number paying authors increases. Banning hybrid journals as it is now in plan-S will kill this transition in revenue source. Learned societies will not flip their journals to OA: too risky. The group of authors subject to plan-S is just way too small to have impact in the world.

Another problem related are the scientific conferences that play a dominant role in engineering sciences. These are largely organized by the learned societies on a non-profit basis. The entrance fee is spent on management services, room plus equipment rent, food & drinks and social activities. Conferences are a social event where information is shared. Without this "paywall" it will be almost impossible to hold scientific conferences. Proceedings can be seen as journals, but will we let audience in for free for certain OA papers and send them out for other papers? These conferences do not make profit and the commercial publishers are not active in these conferences. Plan S would be the end of conferences, at least in Europe. Imagine what this would mean for research in Europe.

It's too expensive for researchers in poor countries. For gold OA the publication fees are in the range of 1000 to 2000 Euros at least in IEEE. For many other "good" journals nowadays, it's more like €5000 (or more), and the prices go up every year. Clearly this will marginalize researchers with a "rich get richer poor get nothing" situation. Authors who cannot pay are excluded from publishing. Do we want to lose them all? How will education be in poor countries?

Rich groups will be able to publish more. While in the "reader pays" everybody can publish. The number of papers is determined by money instead of quality. This is clearly a perverse incentive.

Young researchers in Plan-S countries will move abroad to countries that allow high quality "reader pays" journals. Germany is 10 km away from my university and will not comply to plan-S. Many other countries will not support plan-S.

The library budget of organizations will shift to "author pays" publications. And successful institutes will have to pay even more. It's an illusion to think that we will save money- unless you are at an institute that does not publish. And even if we would save money, it's naïve to believe that that money will go to the researchers. Also, librarians like plan-S because they believe they can spend the money saved, but again this is naïve. The money – if it is there at all - will likely disappear to academic overhead.

Researchers who publish a lot will have to spend a lot of money to gold OA publishing. If covered by the funder, it is still withdrawn from the research budget. For learned societies the move from "reader pays" to "author pays" has no net cost advantage for university or funders.

The position of the Netherlands and other countries committing to plan-S, as attractive country for scientist will be gone. Why would you scientist move to a country where you cannot publish in the highest standard journals?

Now industry pays the learned societies to read the publications. Why would we “reader pays” stop receiving this money and use it for the benefit of science as we do now? Due to dropping income, The APC publication cost will go up.

Today I’m allowed by IEEE to post my accepted papers on my personal repository and my employers repository in the form of author submitted version. The so-called green route: Everybody can now already freely read all my papers. Plan S insists on owning a CC BY 4.0 copyright which will only drive up my cost with 2k€ per paper when I publish in my hybrid journals. This is probably not covered by my funders, so maybe I have to find an industrial sponsor to pay the APC. No problem, they get cheap advertisement in my paper, but do we really want this?

Servers like arXiv.org allow me to publish my author submitted papers, even before publication by a reviewed journal. Also, IEEE allows me to do this. There is no cost, while my papers are open access.

CCBY 4.0 is really not needed nor desired as it may facilitate “fake science”. It looks to me as “religious” and politically driven. It will cost APC and give us researchers something we do not need. Why would we allow commercial publishers to freely make money with my publications? With CC BY 4.0, all they need to do is mention my name and they can do with my work what they like. They can even put parts of papers in another context and generate wrong information under my name! This can easily create fake science. And If I want to re-use a figure and IEEE has the copyright, I get their permission for only 200Euros. However, I have felt the need to use this opportunity in my 30-year career. For me owning copyright is not an issue.

How to avoid damage to highly valuable non-profit volunteer organizations like IEEE by destroying their main source of income from publications? Note that IEEE does much more than publishing - e.g. think of standards like WiFi IEEE 801.11 which benefits all mankind - do we really target to destroy this?

It is an illusion that “the man in the street” wants to read all those scientific papers. The man in the street needs a filter, a journalist so summarizes complex matter. And yes, journalists are often behind a paywall of a newspaper or TV station

I’m not allowed to share my research results in simple wording in a newspaper to the man in the street. Newspapers are paywalled. Also I’m not allowed to share my research results in simple wording in a commercial TV show to the man in the street. Paywalled!

Plans S does not deal with the real problem. Libraries should just de-subscribe from the expensive commercial journals. If all universities do this – things will change in a wink! Funders and universities can put a cap on the subscription fees as they plan for the APC under plan S. But beware, publishers are smart. They will add a lot of journals that you are not interested in to the package deal. This makes journals look cheap on average, while they are not. And if the reader pays, let then the reader pay only for what the reader really reads.

The idea that commercial institutions take benefit of money for science payed by taxpayers is very selective framing, especially when you only link it to "reader pays". It actually just as well holds for "author pays. Plan-S with "author pays" actually is also a "for profit" model. The building I work in has also been built- by a commercial builder. Even the paper I write on is made "for profit". My computer, my mouse, everything around me is "for profit". There is nothing fundamentally wrong with paying for a service, unless one wants to back to communistic ideas. The problem in publishing is that universities and funders have not been able to control their expenses on publishing. So de-subscribe and re-negotiate and join forces. Learned societies offer reasonable "reader pays" fees. And if one feels it's too expensive: just de-subscribe.

To Summarize: Plan-S has 20 problems mentioned above and probably even more. This makes it a way to risky proposal that might well damage nonprofit organizations like IEEE that have served mankind for decades.

Plan S is also very unclear on at least 2 points:

First: Plan S is unclear about conferences. They are mentioned now, but it's not explained how conferences should be implemented in plan-S. Today learned society now do not even think about changing conferences because they do not know where to start. Plan S is totally unclear and the conferences of 2020 are already organized! When I met Robert Jan Smits on November 2nd in Amersfoort I asked him about conferences because plan S did not even contain the word conference. I had to explain him what conferences are. A bit more knowledge about the variety in the publishing world would be helpful for the authros of Plan-S

Second: There is a conflict in the guidelines: There are 3 permitted routes:

A) I can publish gold OA: ok, that's is clear.

B) I may do Green OA with CC-BY (as described above). So, I may publish in a hybrid journal and buy CC-BY, even if that journal has not agreed on a route to golden OA. I can theoretically even publish behind a paywall unless I have CC-BY. Clear, almost all IEEE journals do this.

C) I may only publish hybrid if the hybrid journal has agreed on a route to golden OA.

I conclude that this is a mathematical/logical 'OR' function of the 3 possibilities, because otherwise A and C conflict. but if it is an 'OR' function then B and C are again conflicting. The rules are unclear to me.

Maybe a slightly different sequence makes things more logical:

1) The funders support and finance APC's articles in full gold

2) The funders support and finance APCs in hybrid journals if they are part of a transformative agreement.

3) Furthermore, authors can be compliant by depositing an author accepted manuscript or version of record without embargo in a compliant repository.

For all options, copyright must be retained by author or institution and CC BY license must be applied.

My interpretation is that closed access articles in subscription journals or articles in hybrid journal outside a transformative agreement can still be made compliant by immediately applying self-archiving according to route 3 above. For that hybrid publication outside a transformative deal, however, these costs are not reimbursed by the funder and must therefore be borne by the author or his institution. Or maybe not?

Final note:

I have given myself CC BY 4.0 copyright. So, copy paste and use it as you like ;-)

Bram Nauta

Professor/Chair IC Design and department head Electrical Engineering, University of Twente, Enschede, The Netherlands.

President IEEE Solid-State Circuits Society

b.nauta@utwente.nl office:+31534892655

<http://people.utwente.nl/b.nauta>