Public Feedback on the Guidance on the Implementation of Plan S
in support of the efforts of Plan S by *Martin Etzrodt, PhD*

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Freiburg im Breisgau, Germany, February 8th 2019

To whom it may concern,

This response in strong support of PlanS provides first a brief personal perspective underlining how strongly publisher dependent scientific communication today is inked to research assessment by scientific peers and funding agencies. I further provide my suggestions where PlanS should put an emphasis on in its implementation. If Plan S is implemented in a bold and forward looking way with state of the art web technologies it will strongly boost Europe's capacity as a leading competitive place for innovators in the world.

I recall that during my EMBO Postdoctoral Fellowship interview, which is lead traditionally by a scientist, it was clearly communicated to me after I had dropped the news about the acceptance of one of my PhD related projects in a journal of the "upper 20ies" impact, that my funding "shall not be a problem". Indeed, I was funded. The content of the work did not matter. At least I was not asked for it. Similarly I have experienced to be turned down on grant committees based on the fact that some work had not been published yet. Funding organisations today organise workshops that clearly communicate the importance of the skill to "deliver a story" and to how to "sell" the scientist's work.

This all is in clear violation of the DORA agreements and distorts the way we should be doing science. This will not change, unless we take a bold move and promote early access for manuscript and data sharing and make PRIOR sharing of the scientific work in an pre-print version a legally binding requirement to receive public funding. The Web does not know page limits. It should be "the pool of information to develop which could grow and evolve", as intended by Tim Berners-Lee.

I highly encourage PlanS - especially in light of the ongoing efforts of building a "European Open Science Cloud" to critically review the role of publishers and not go down the path of publish and read agreements (PAR) such as the recent agreement of Germany's Project-Deal (https://www.projekt-deal.de/). Furthermore the increasing prevalence of "Golden-open access" publishing should be avoided. Pay for publish models will not remove the current silos, which are hoarding the publicly funded research.

Plan S should boldly promote the creation of a European Open Science Datastream. Data and knowledge (i.e. the process data in a publication) can be defined as anti-rival good, thus "their value of free dissemination of data and exceeds the profit gained by few through copyright or IP", as suggested by Lawrence Lessing.

To create the European Open Science Datastream we can use already well existing pre-print server infrastructures and existing standards for those. All it takes it to mandate all publicly funded work to be submitted first to pre-print servers with established standards and including as much as possible linked data and software that allows for a full evaluation, reuse and replication of the published work by peers.

A central argument against such practice may be the lack of peer-review and editorial rigour for “filtering” “good and bad science”. However there is today a large body of evidence that suggests how peer-review and selectivity by editors is failing to assure quality. Instead, the process creates unnecessary competition and secrecy among scientist and prevents timely sharing of results.

Instead the uropean Open Science Datastream could permit the emergence of new innovations and business models. Curated lists could be created and offered for subscribers, potentially even against a small fee, while the data stream may be as well tapped for a quick overview and update by customisable “RSS” feed like tools by individual researchers. Of note, the individual number of relevant publications in a specialised field are not too overwhelming to quickly skim over to gain an overview, especially as a field specialist. It is well possible that the collective “swarm intelligence” of such curation yields much better and more reliable measures of scientific progress as the slow and hierarchical process of editorial and peer review - unchanged despite almost 30 years of advances in internet technology.

Publishers may offer more rigorously curated lists at later time points collecting over a larger body of the real-time feedback accumulated in the open science stream. This is a value adding service and will likely find subscribers. It may be even possible to create for-fee services that skim the open science stream and offer diligently curated lists using replication as quality assurance criterion.

Overall a large body of new metrics, most likely circulating around number of references, but most importantly the reusability of a piece of scientific work would emerge that could be a direct guidance and feedback for funders on how well their money has been spent.

Some core beneficial tools that are not immediately required, but would largely facilitate the creation of the European Open Data Stream would be:

- Adoption of standards for novel distributed web technologies (such a per-to-peer storage approaches, i.e. https://ipfs.io/).
- The creation a self-self-sovereign European Identity for Scientist, i.e. the funders may serve as the ID providers or the institutions.
- A transparent and decentralised operating (i.e. not through a centralised third party) system to notarise attribution, use and re-use of the scientific data published on the pre-print servers. To this end “git” like version control system could be implemented. A combination of both IPFS and blockchain technology would be a valuable infrastructure here.