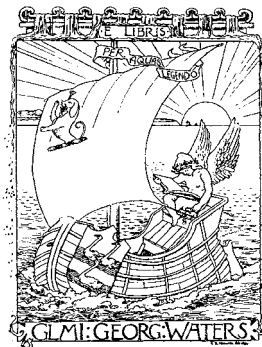


International Dateline — PEER: A European Project to Gather Evidence on the Effects of Widespread Open Access Publishing



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Introduction

PEER (Publishing and the Ecology of European Research) is an important new research project supported by the **European Union** that will investigate the effects of the large-scale, systematic depositing of authors' final peer-reviewed manuscripts (so called **Green Open Access** or stage-two research output) on reader access, author visibility, and journal viability, as well as on the broader ecology of European research. The project is a collaboration between publishers, repositories and researchers and will last from 2008 to 2011. While **PEER** has a European focus its findings will have worldwide implications for the publication of research outputs.

Peer-reviewed journals play a key role in scholarly communication and make an essential contribution to the progress of science. The publishing and research communities in Europe have agreed that access to the results of European funded research is important to maximise its use and impact. However, they hold different views on whether mandated deposit in open access repositories is necessary and the embargo periods that would be appropriate. No consensus has been reached on a way forward.

The key problem is that there is no clear evidence of what the impact of archiving research outputs in open access repositories will be if implemented on a broad and systematic scale. The solution that **PEER** brings is a collaboration involving the publishing, library and research communities that will investigate the effects of this phenomenon. The aim is to develop an "observatory" to monitor the effects of systematic archiving over time. Participating publishers will collectively contribute 300 journals to the project and supporting research studies will address issues such as:

- How large-scale archiving will affect journal viability.
- Whether it increases access.
- How it will affect the broader ecology of European research.
- Factors influencing the readiness to deposit in institutional and disciplinary repositories and the associated costs.
- Models to illustrate how traditional publishing systems can coexist with self-archiving.

The PEERage

The **International Association of Scientific, Technical and Medical Publishers**, the **European Science Foundation**, **Göttingen State and University Library**, the **Max Planck Society** and **INRIA** will collaborate on this project, supported by the **SURF Founda-**

tion and University of Bielefeld to involve the expertise of the EU-funded **DRIVER** project. This work should lead to a greater understanding of journal and repository use in the digital age, and, it is hoped, will foster trust and mutual understanding between the stakeholders in academic research and scholarly publishing.

The participating publishers in **PEER** are: the **BMJ Group**, **Elsevier**, **Institute of Physics Publishing**, **Nature Publishing Group**, **Oxford University Press**, **Portland Press**, **Sage Publishing**, **Springer**, **Taylor & Francis**, and **Wiley-Blackwell**.

The PEER Solution

PEER identifies three stages of research outputs: stage-one: the author's draft manuscript, often called a preprint, submitted for publication; stage-two: the author's final manuscript that has been accepted for publication by a journal and incorporates all the changes required by the peer review process; stage-three: the final published article, a complete, definitive peer-reviewed version with full editing, typesetting, and electronic indexing and linking to other articles.

Most publishers allow the deposit or use of stage-one outputs without any restriction; a few allow open access to stage-three outputs under very specific conditions which they impose, such as payment of publication charges or after publication-specific and publisher-imposed embargo periods. Disagreement focuses on the conditions of deposit of stage-two research outputs.

Many publishers allow archiving of stage-two outputs on a limited scale (e.g., to comply with the specific mandates of individual funding bodies). Policies vary considerably across publishers and can vary across a given publisher's journals. This situation can be confusing to authors. On the other hand, some publishers are broadly supportive of open access and are conducting their own experiments with new business models (e.g., funded open access or converting traditional journals to open access models).

It remains unclear what the impact of archiving the stage-two research outputs in repositories will be, if implemented on a broad and systematic scale, on journals and on the wider ecology of scientific research in Europe.

The proposed solution is for publishers and the research community to collaborate in developing an observatory that will enable them to monitor the impacts of the deposit of stage-two research outputs. The data provided by the observatory can then be used to provide an evidence-based foundation for discussions on future policy.

Collaboration is an important part of the solution. In principle, either publishers or the research community could independently gather its own evidence and propose policies to the other on this basis. **PEER's** philosophy is, however, that a true solution will only be achieved if both publishers and the research community collaborate to design the Observatory, gather the evidence, and reach a joint understanding on the impacts.

The **PEER Observatory** will act as a controlled experiment to compare an evolving scenario of large-scale and systematic archiving with the current situation of limited and sporadic archiving. It will, therefore, involve a group of journals participating in the project and a control group for comparison.

It has been observed in other projects that the response times of the scholarly communication system are slow. Effects observed today may be the outcome of quite temporally distant events. The observatory will therefore not be dedicated to looking at the irreversible impacts of change but rather the accumulating indicators that presage that change.

The PEER Objectives

The specific objectives of **PEER** are:

1 Determine how the large-scale deposit of stage-two research outputs in repositories will affect journal viability.

The scholarly journal supplies core functions of formal academic communication by offering readers a branded thematic focus and quality control through editorially anchored peer review. There is no desire to see it damaged, if there is a continuing user demand for these functions in an open access environment. It is essential therefore to understand the nature and scale of the impact of large-scale deposit on journal economics. In the project timescale (three years), it will be difficult to measure impact in terms of cancellations of journals subscriptions. The project will use migration of use from publisher sites to repository sites as an indicator of economic impact, supplemented by research to explain this migration and the behavioural consequences for researchers.

2 Determine whether the large-scale deposit of stage-two research outputs in repositories increases access.

Repositories can play a role in broadening access to a wide variety of digital objects; the formal peer-reviewed document landscape is unusual in having high but not universal access within the scholarly community. It is important to understand how access may

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actually be improved. The project will seek to determine whether (and how) large scale deposit impacts on access to publications. This can be done by:

- Monitoring whether repository use is truly “new” use or migration from publisher sites.
- Comparing usage of the same articles at both repositories and publisher’s sites.

To this end, the project will collect data on usage, e.g., institution type, user type, geographical area. Usage data will be supplemented by research to explain this new use.

3. Determine whether the large-scale deposit of stage-two research outputs in repositories will affect the broader ecology of European research.

The attitudes and behaviours of the research community are probably the most important aspect of the evolution of their communication systems. Researchers are increasingly obliged to enter data about their research activities into their institution’s research databases as the basis for fund allocation. The combination of this process with the deposit of publications is currently considered by single research institutions. Either the requirement to deposit or the fact that someone else (a publisher) may have deposited content into a repository on your behalf changes the boundary conditions. It will be essential to measure and monitor these attitudes and behaviours through a qualitative and quantitative baseline study that gets iterated at various points during the project.

4. Determine the factors affecting the readiness to deposit manuscripts in institutional and disciplinary repositories and measure the associated costs.

In the debates about the use of repositories, it has been suggested that researchers rarely deposit their publications in institutional and

disciplinary repositories, even when the journals in which they published their work allow this. A number of reasons have been discussed in this context: Researchers may find depositing manuscripts in repositories to be difficult and/or time consuming; the legal situation may not be entirely clear to them; they may not be aware of the relevant repositories or the value of self-archiving may not be clear to them. **PEER** will collect information on repository use and on the behaviour of the researchers (both by logfiles and quantitative as well as qualitative surveys) to help understand the factors which affect the decision to deposit published works in repositories. Furthermore the project will compare the costs associated with publisher-assisted deposit with various models of author self-archiving to determine which model is most cost-effective.

5. Develop a model to illustrate how traditional publishing systems can coexist with self-archiving.

The observatory will provide an environment for studying the effects of self-archiving. In essence the model for large-scale archiving is being monitored in a controlled fashion for a subset of European research and publishing, open for extension in the course of the project. The project will seek to describe this model, the parameters, and how they interact. This could provide insights into how to optimise the parameters, e.g., method of deposit, embargo times. It will also stimulate field studies and discussion about alternative models that could benefit all stakeholders.

Overall Approach

The 300 journals contributed by participating publishers will cover a wide range of types and subjects. Publishers will set embargo times for each journal appropriate to the discipline and individual journal economics.

During the project, stage-two research outputs for European authors will be deposited in open access repositories in the **EU** using two methods: either (a) the author will be requested

to deposit the manuscript (self-archiving), or (b) the publisher will deposit the manuscript on behalf of the author.

PEER will be managed by an Executive, chaired by **Michael Mabe** of **STM**, and will be advised by a **Research Oversight Group** of distinguished scholars. The research itself will be commissioned from appropriately qualified and independent research teams. There are three strands to the research: behavioural, focusing on researchers as authors and users; access and usage, focusing on logfiles from participating repositories and publishers; and economic, focusing on efficiency and cost-effectiveness of deposit processes.

Expected Results

It is anticipated that **PEER** will result in:

- Greater understanding by both publishers and the research community of the effects of large-scale deposit of stage-two research outputs in open access repositories, in particular on the access, use, and economics of journals, but also on the broader ecology of research in Europe.
- Clear evidence-based guidance for the evolution of policy in this area.
- A model illustrating the effects of archiving on traditional publishing systems to stimulate discussion and debate on how to maximise the benefits of both approaches.
- Trust and mutual understanding between the publisher and research communities to assist in the achievement of the ambitious development goals for science in the European research area.

Further Information

For further information on **PEER** contact **Michael Mabe**, CEO, **STM** at <mabe@stm-assoc.org>. 