

# PEER: PUBLISHING AND THE ECOLOGY OF EUROPEAN RESEARCH

*Julia M Wallace; Michael A Mabe.*

International Association of Scientific Technical and Medical Publishers  
(STM), Prama House, 267 Banbury Road, Oxford, OX2 7HT, UK  
e-mail: wallace@stm-assoc.org; mabe@stm-assoc.org

## **Abstract**

PEER (Publishing and the Ecology of European Research) is an EC supported collaboration between publishers, repositories and the research community aimed at improving understanding of the effects of the large scale deposit of stage two (accepted) manuscripts in open access repositories (Green Open Access). Through the creation of an observatory with European content from approximately 300 peer-reviewed journals from participating publishers, PEER aims to monitor the effects of systematic archiving over time. Research commissioned from qualified independent teams addressing author and reader behaviour, article usage at repository and publisher sites and the economics of publisher assisted deposit and author self archiving, will result in a number of outcomes including: evidence based guidance for the evolution of open access policy; a model of the effects of archiving on the traditional publishing systems and foster trust and mutual understanding between publishers and the research community for the overall benefit of European research.

**Keywords:** open access; embargo; mandated deposit.

## **1. Introduction**

PEER (Publishing and the Ecology of European Research) is a pioneering collaboration between the key stakeholder groups in scholarly publishing: publishers; libraries and repositories; the research community consisting of researchers as both authors and readers, and funding agencies. Launched in September 2008, PEER will run through to September 2011. Supported by the EC eContent*plus* programme [1], with matched funding from the participating partners, the total budget for the 3 year project is €4.2 million.

Although there is broad agreement between the stakeholders of the importance of accessibility to the results of European funded research, different views are held on whether mandated deposit in open access repositories is necessary as well as on appropriate embargo periods.

Over recent years and months, there has been much debate about Open Access publishing and its likely effects, with differing views ranging from those who want all information freely available, to the ultra-conservatives who want no change to the 'traditional' system. We are now at a point where mandated deposits in open access repositories are increasing – without any true understanding of the impact this will have across the research and publishing information chain. This means that changes are being made without knowing whether the effects would be positive overall or whether ultimately, the entire system could collapse.

While a number of publishers are experimenting with a variety of approaches to open access, this will not provide the broad overview of the effects within the system that is needed in order for evidence based decisions to be taken for the system as a whole.

Aimed at improving the understanding of the effects of the large scale deposit of stage-two (authors' final peer reviewed accepted manuscripts) in open access repositories (Green Open Access), PEER is developing an Observatory which 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.

## 2. The PEER Consortium

PEER is supported to 50% of overall eligible project costs by the EC *eContentplus* programme to a maximum of €2,120,000 [2] with matching funding being provided by the consortium members.

The PEER Consortium consists of seven organisations collectively representing all key stakeholder groups involved in the scholarly publishing process. Five of the Consortium members form the PEER Executive, with two additional members taking the roles of technical partners within PEER.

### 2.1. PEER Executive Members

#### **International Association of Scientific, Technical and Medical Publishers (STM)**

STM is an international association of about 100 scientific, technical, medical and scholarly publishers, collectively responsible for more than 60% of the global annual output of research articles. The mission of STM is to create a platform for ex-

changing ideas and information and to represent the interest of the STM publishing community in the fields of copyright, technology developments, and end user/library relations. It is the only international trade association equally representing all types of STM publishers – large and small companies, not-for-profit organisations, learned societies, traditional primary and secondary publishers and new entrants to global publishing.

**Role in PEER:** STM as coordinator will take a leadership role for the success of the project and the collaboration between the partners representing the publishing, library and research communities. STM will also interface with the publishers providing the journal content for the project, keeping them engaged and informed, and ensuring that they participate with other stakeholders in debates about issues and future scenarios raised by the project.

#### **Fondation Européenne de la Science Association (ESF)**

ESF is an association of 78 research organisations in 30 European countries. Its members are major research funding agencies, research performing organisations and learned societies who created ESF in 1975 to foster collaboration between researchers and between research organizations in Europe. ESF produces authoritative strategies and visions in all research fields, develops and manages funding schemes on behalf of its member organisations and facilitates consultative processes to allow its member organizations to develop common or compatible policies and operational procedures when dealing with issues of common concerns.

**Role in PEER:** ESF participates in the project on behalf of research organisations (research funding organisations and research performing organisations) and the research community. It will facilitate a dialogue between those groups with a view to finding a common position on key issues relevant to the project. ESF will consult with and act as interface for those organisations and the project.

#### **Göttingen State and University Library (UGOE)**

The **Göttingen State and University Library (SUB)** is one of the largest libraries in Germany and a leader in the development of digital libraries. It plays a key role in the EC-funded DRIVER project that is building the digital repository infrastructure for Europe. SUB is one of the leading open access institutions and is very engaged in open access discussions. Its expertise includes usage statistics, reference linking, citation analysis etc. SUB also hosts the secretary of DINI (German Initiative for Networked Information). It has collaborated with the other group members to develop the DINI guidelines, “Certificate Document and Publication Repositories” and “Electronic Publishing in Higher Education”.

**Role in PEER:** Göttingen is the strategic coordinator for the library/repository community and acts as communicator vice/versa to and from other institutions in-

to the project. Its key role would be to coordinate the work of the PEER and DRIVER projects and plan a framework for interfacing the publishers and repositories within PEER. This will have benefits for both projects, with PEER populating DRIVER repositories and DRIVER facilitating access for the user community.

#### **Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V. (MPG)**

The **Max Planck Digital Library** is a new central service unit established by **Max Planck Society** early in 2007. The MPDL coordinates the web-based management and supply of scientific information for the research of the Max Planck Society as a whole. This includes not only the operation of the electronic infrastructure, but also the development of new components necessary to tie individual Max Planck institutes into the global scientific communications network.

The **Central Information Service for the institutes of the Chemistry Physics Technology division of the Max Planck Society (IVS-CPT)** is located at the site for Solid State Research in Stuttgart but is available for all scientists within the Society. The unit provides a range of services, including complex searches that are beyond typical end users, and searches using specialist external databases not available to end users. Citation analysis and research evaluation using citation data have become important activities, supplemented by bibliometric research.

**Role in PEER:** The role of the Max Planck Society will be two-fold:

- It will provide an immediate entry point to a national group of publication archives covering the 78 institutes of the MPS, where specific disciplinary or generic observations could be realised. The Max Planck Digital Library will both provide editorial support (metadata enrichment and/or adaptation) and technical development to facilitate the easy upload of publications on the eDoc and eSciDoc archives (the two main national archives of the MPG).
- It will contribute, through its IVS group, to the definition of the research studies, providing expertise on methodology and suggesting possible metrics and bibliographical measures to be applied during the course of the project. The MPS will also see how the concept of observatory within the project can be made sustainable by involving forces within the MPDL and the IVS group.

#### **Institut National de Recherche en Informatique et en Automatique (INRIA)**

**INRIA** is a world-class research institute in computer science and control operating under the dual authority of the Ministry of Research and the Ministry of Industry. It is dedicated to fundamental and applied research in information and communication science and technology (ICST). The Institute also plays a major role in technology transfer by fostering training through research, diffusion of scientific and technical information, development, as well as providing expert advice and participating in international programs. INRIA now has more than three years experience in open access repositories through a strong partnership with CCSD-

### **CNRS (Centre pour la Communication Scientifique Directe).**

**Role in PEER:** The role of INRIA is to facilitate a connection between the PEER project and the French national archive HAL, which, following a national agreement signed in September 2006, is now the central repository infrastructure for the universities and the main research institutions in France (CNRS, INRIA, INRA, INSERM, CEA, etc). Through an agreement with CNRS, INRIA has been involved in technical developments and will contribute to the interface of the national archive and editors, thus providing a platform immediately operational from the start of the project.

## **2.2. The technical partners**

### **Stichting SURF (SURF)**

SURF is the collaborative organisation for higher education institutions and research institutes aimed at breakthrough innovations in ICT. SURF provides the foundation for the excellence of higher education and research in the Netherlands. SURF collaborates with a number of partners abroad to share knowledge and to profit from advantages of scale. The results that SURF achieves are also guiding examples in an international setting. SURF foundation is the initiator for innovation in higher education and research. SURF initiates, guides and stimulates ICT innovation through sharing knowledge and partnerships.

SURF has coordinated the DARE programme, which resulted in DAREnet, a network linking the institutional repositories set up at all Dutch universities and various related institutions. DAREnet (now part of the science portal NARCIS) offers a single access point to the local digital collections.

DAREnet's success has inspired the European network of repositories, DRIVER (Digital Repository Infrastructure Vision for European Research). SURF plays a key role in this European project.

In the new programme SURFshare, SURF intends to make accessible not only the final publications but also the underlying datasets and intermediate results, such as visualisations or algorithms.

**Role in PEER:** SURF will play a key role in the development of Guidelines for the set up of open access repositories and deposit content in the institutional repositories. The Guidelines form the basis of harvesting mechanisms in synergy between PEER and DRIVER projects. This will have benefits for both projects, with PEER populating DRIVER repositories and DRIVER facilitating access for the user community. SURF also supports the helpdesk function to establish a workflow for repository ingest.

### **Universität Bielefeld (UNIBI)**

**Bielefeld University Library** has contributed significantly to shape the German

landscape of digital research libraries and electronic information and is heavily involved in international initiatives for research infrastructures for processing digital information. According to the German university ranking CHE Bielefeld University Library performs top-notch (Rank 2) on a national scale. The physical research library with its over 2,000,000 titles is renown for its highly integrated as well as open architectural and functional design. The developments of digital libraries can be traced back to the 80s and led, among other things, to the Digital Library North-Rhine-Westphalia "**DigiBib**", today hosted by the academic library centre "hbz" in Cologne for nearly 200 libraries.

Recent projects in the domain of information infrastructures focus specifically on aggregating and networking high numbers of open document repositories that collect and expose scientific texts at the institutional level in order to provide open access to large corpora and, thus, to support novel forms of information provision in research. The search engine BASE (Bielefeld Academic Search Engine), for example, aggregates distributed Repositories, by providing access to about 12.000.000 publications from more than 820 international sources (June 2008). For open academic contents, BASE belongs not only to the most renown search engines (indicated by a high number of searches) but also shows an advanced quality in data aggregation and improved technical performance as compared to similar service providers. As another example, DRIVER is a European Initiative providing an organisational umbrella for distributed repositories but also a technical interoperability framework for connecting arbitrary services. On the one hand a joint information space is offered, which can be used by multiple service providers. On the other hand an architecture allowing the synergetic operation of parallel and distributed services is deployed and offered for reuse.

**Role in PEER:** Bielefeld University will provide the technical interfaces to DRIVER and to repository networks and aggregations. UniBi is a full technical partner in DRIVER and DRIVER-II and specializes on the aggregation aspect of distributed document repositories. Through these expertise and the 5 year experiences of operating the scientific search engine BASE that predominantly builds on repository contents, UniBi will facilitate the implementation of the required repository interfaces for the PEER project.

### 2.3. Other PEER Participants

In addition to the PEER Consortium members, many other organisations are participating in PEER. These are primarily the publishers which are providing content for the project and the repository task force which will receive content provided by the publishers plus content submitted by authors of eligible stage-two outputs. The current listing of participating publishers and repositories is provided below:

*Participating Publishers:*

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

*Repository Task Force:*

Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V. (MPG)  
HAL, Institut National de Recherche en Informatique et en Automatique (INRIA)  
Göttingen State and University Library (UGOE)  
BiPrints, Universität Bielefeld (UNIBI)  
Kaunas University of Technology, Lithuania  
University Library of Debrecin, Hungary  
E-Depot, Koninklijke Bibliotheek, The Netherlands.

### 3. Open Access and the three stages of publication

There are three key stages in the publishing process of research information:

- 1) *stage-one*: Primary research output prepared as a draft article for submission for publication (often called a pre-print).
- 2) *stage-two*: The author's final manuscript that has been accepted for publication by a journal and incorporates the changes required by the peer review process.
- 3) *stage-three*: the final published article, a complete, definitive peer reviewed version with full editing, typesetting, electronic indexing and linking to other articles

The relationship between public investment and publisher investment through the stages is indicated in Figure 1.

Open Access means that information is freely available for everyone to read without paying subscription fees for a publication such as a journal, or 'pay to view' fees on an article by article basis. Referring to the three key stages of figure 1, a variety of approaches are currently taken with regard to open access. Open access to stage-one outputs is often provided via pre-print (or e-print) servers. One of the best known e-print servers is arXiv [3], initially hosted by Los Alamos and focussing on high energy physics, but now operated by Cornell and covering physics, mathematics, computer science, quantitative biology, quantitative finance and statistics. With some exceptions (e.g. a number of publishers in the field of chemistry) many publishers allow the deposit or use of stage-one outputs without

restriction, with some publishers such as Nature Publishing Group even setting up pre-prints services for authors [4].

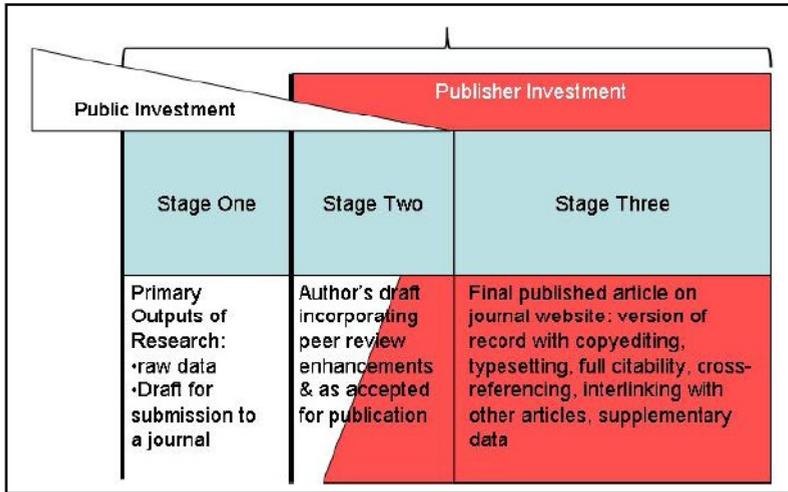


Figure 1: The three key stages of the publishing process for research articles.

Open access to stage-three articles falls under the 'Gold' open access model. In Gold open access, most commonly either the author pays for a specific published article to be made freely available, or an institution pays a fee for a larger number of published articles authored from their institution to be made freely available, or alternatively to achieve a reduction in author fees. Some publishers such as Public Library of Science (PLOS) and Hindawi follow an exclusively Gold open access business model. Many other publishers have also adopted Gold open access models, with some journals being entirely open access and others offering a hybrid service where authors can choose between their articles being provided via a subscription or paying for them to be freely available to all. The purchase of BioMed Central by Springer in 2008 signified an acceptance of the Gold open access model to many observers.

The situation regarding open access to stage-two articles is less well established. This is often referred to as 'Green' open access, where authors self-archive their articles in subject or institutional repositories which make them freely available for others to read. Many publishers allow the archiving of stage-two outputs on a limited scale e.g. to comply with the specific mandates of individual institutions and funding bodies, but policies vary both between publishers and often also within a given publisher's portfolio. The current trend indicates that mandated deposits of stage-two outputs are increasing, but the effects of their large scale systematic archiving on journals and the wider ecology of research in Europe are as

yet unknown. PEER has been established to develop an 'observatory' to monitor the effects of systematic archiving of stage-two outputs over time.

#### 4. The objectives of PEER

The objectives of PEER support the aim of the EC eContent<sup>plus</sup> programme which aspires to make digital content in Europe more accessible, usable and exploitable. The European Commission has encouraged policy development on open access at the European level through work leading up to the Communication on Scientific Information in the Digital Age: Access, Dissemination and preservation (14 February 2007) [5], the subsequent actions announced as a result of this report and the work of the High Level Expert Group on Digital Libraries.

PEER has a number of specific objectives:

##### *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 (3 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 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.

## 5. The PEER Observatory

At the heart of PEER is an 'observatory' which will monitor and measure the effects of systematic deposit of stage-two research outputs in open access repositories.

### 5.1. PEER Observatory: Content

To date, eleven participating publishers have nominated approaching 250 journals for PEER to date with a target of 300 journals by year two (plus a matching control group). These journals, all of which have at least 20% European content, will provide the source of the PEER content for the participating repositories. The journals cover a wide range of subjects including social sciences & humanities; physical sciences; life sciences and medicine. While all the selected journals publish original research content, and the vast majority of them are listed in ISI, the journals themselves vary from large established flagship titles to smaller, more recently launched titles in order to provide a wide variety of publications for the project. For the purposes of the project, publishers set embargo times for each journal appropriate to the discipline and individual journal economics. For the purposes of the research for PEER a matching control group of journals will also be identified.

From 2008 to 2011, at least 50,000 European manuscripts from the 250+ participating journals will become available for archiving (so-called Green Open Access). During the project, the stage-two research outputs for European authors will be deposited in participating 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.

The decision for publishers to deposit stage-two manuscripts was made to ensure that a critical mass of content would be available for the project, since only an estimated 15% of authors permitted to deposit their research outputs in an open access repository actually do so [6]. In addition, where available, back-files of retained stage-two articles will be transferred into the PEER Depot.

To facilitate the entry of publisher deposited content into the participating repositories, a dark-archive, entitled the PEER Depot is being created to act as a centralised point of collection. As a dark archive, the PEER Depot will not be accessible or searchable except to those allowed specific access for the purposes of PEER. Publishers will deposit full text articles for 50% of the stage-two articles participating in the project, but will provide metadata for all participating stage-two articles. The full text and associated metadata for the 50% of articles assigned to the publisher deposit aspect of the project will be distributed to all participating PEER repositories from the PEER Depot. The metadata for the other 50% of articles

highlighted for author submission will not be distributed from the PEER Depot, but will be held as a reference resource for the research teams.

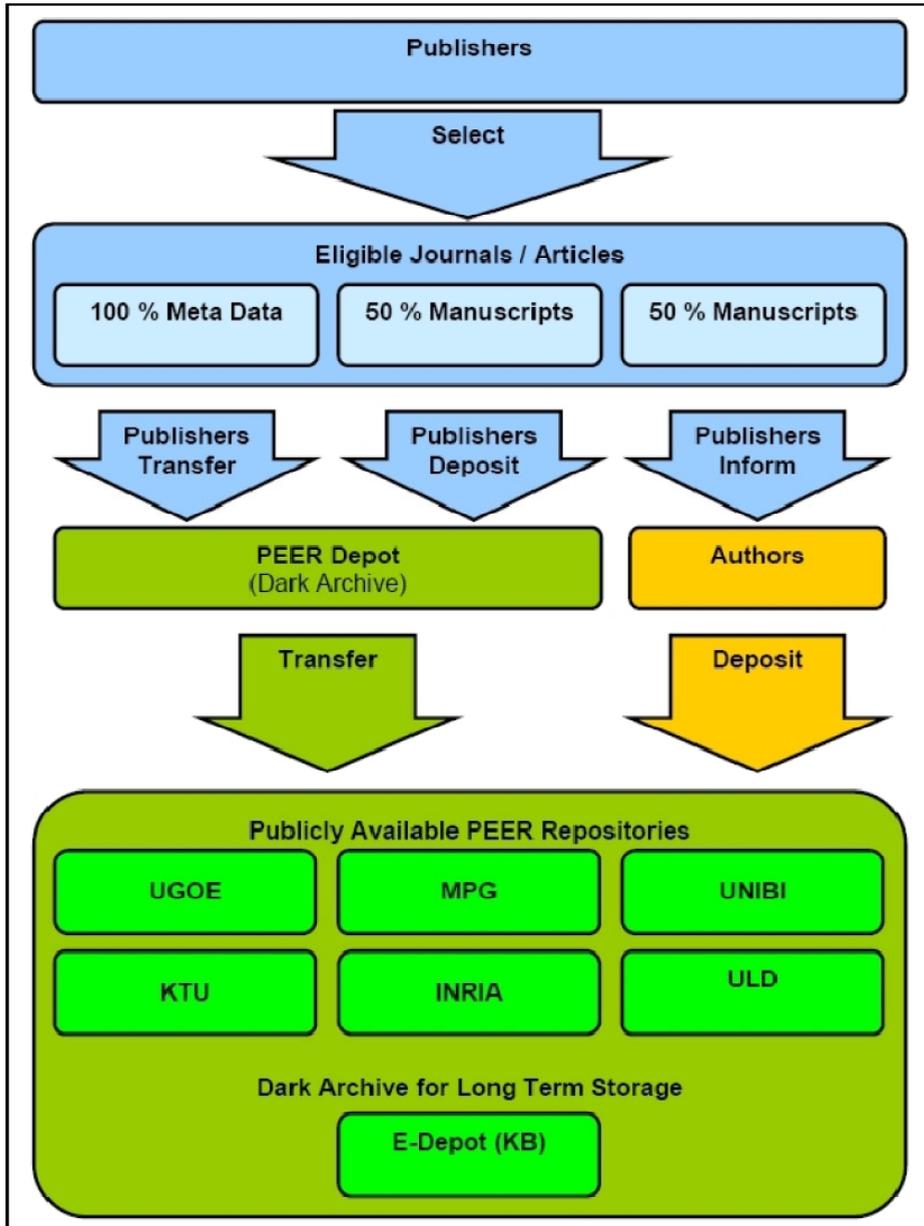


Figure 2: PEER content workflow.

A schematic showing the submission process for PEER is provided in Figure 2. As

indicated in the figure, for the 50% of stage-two articles eligible for author deposit, publishers will inform the authors that they can deposit. This communication will be in two steps: i) on receipt of an author's original submission, publishers will inform them of PEER ii) on acceptance of their manuscript, publishers will inform them that subject to embargo restrictions, they can submit their stage-two manuscript to an open access repository (institutional, subject based or a PEER repository).

Further information regarding the content workflow can be found in the first public report to come out of PEER entitled *Draft report on the provision of usage data and manuscript deposit procedures for publishers and repository managers* which is available via the PEER website [7].

In addition to content workflows, this report presents the preliminary findings of extensive consultation with the publishers in order to identify workable formats both for full text files (PDF-A 1/ or as a minimum PDF) and metadata (NLM DTD / or as a minimum XML) which can be provided by the publishers, as well as identifying mandatory metadata elements: Title, Creator, Type and Identifier. In practice, more extensive metadata will be provided in order to ensure identification of eligible manuscripts and facilitate the management of embargo periods etc. Trials of content submission from publishers to the PEER Depot will run in May and June 2009. Eligible publisher submitted content will only be distributed from the PEER depot to the participating repositories once the embargo period has passed.

The report also addresses the Deposit Procedures from the PEER Depot to the repositories and the National Library of The Netherlands (Koninklijke Bibliotheek - KB) which will provide the long term preservation function on behalf of the library and repository community in accordance with DRIVER recommendations [8].

Author deposits are also addressed within the report, outlining both the direct messages from the publishers mentioned previously and outlining the creation of a dedicated author webpage to provide support of them in submitting their manuscripts.

Greater detail on deposit procedures will be provided in the forthcoming '*Guidelines for publishers and repository managers on deposit, assisted deposit and self-archiving*' which will be publicly available on the PEER website around the end of April 2009.

### 5.1.1. Usage statistics

Usage statistics will form an important information source for the research being undertaken for PEER. Many publishers have had experience of providing raw usage data for research projects and regularly provide COUNTER compliant statistics [9] for customers, however the provision of usage data by repositories is much

less common. A proposed mechanism for the collection and provision of usage data from repositories is provided in the draft report [7], however the final processes adopted by PEER will be dependent on the requirements of the research team appointed to undertake the usage research study.

It is therefore important to note that despite the extensive work which has gone into preparing the draft report, it is very much a draft, with the final report being due in September 2009. This will also be publicly available on the PEER website once finalised, and will have built upon the practical experience from within the project, including addressing the complex issue of the provision of accurate usage statistics for repository and publisher sites.

## **5.2. PEER Observatory: Research**

To meet the PEER objectives, the research aspect of PEER is paramount. The research itself being commissioned from appropriately qualified and independent research teams selected following responses to the calls for tenders.

### *5.2.1. Behavioural Research*

The behavioural research will initially undertake a baseline study to identify the current situation regarding author and user behaviour towards self archiving and repositories. This will be followed by in-depth research to study in more detail how authors and readers use open access repositories and publisher platforms, their motivations in each case and how or whether they are influenced by legislation.

Possible questions to be addressed by the behavioural research team include:

- a. What motivates authors to submit articles to repositories and does the presence of an embargo period influence those motivations?
- b. How aware are users and authors of repositories in their institutions or subject disciplines and what benefits or problems do they attribute to repositories?
- c. What are the categories of user types (countries, institute types, regular or transitory) for both repository and publisher sites?
- d. Which advantages or disadvantages do users and authors attribute to repositories in comparison to journals on publishers' platforms?
- e. As awareness of repositories increases (or as procedures to make deposit easier are put into place or as embargoes are removed) are authors more likely to deposit their articles?

The first output from the Behavioural Research will be a baseline study which will be made publicly available on the PEER website in autumn 2009.

### 5.2.2. Usage Research

The usage research aims to determine the source and nature of stage-two research outputs in repositories, whether deposits increase access and use of research outputs and whether large scale deposits will have harmful effects on journal viability.

Possible questions to be addressed by the usage research team include:

- a. Will usage of archived articles be higher than expected for non-archived articles?
- b. Will archived articles with an embargo [or by length of embargo] receive less use than those without an embargo?
- c. What is the relationship between usage and age of article? How does that differ by subject discipline?
- d. Who are the users of repository materials vs publisher site materials? Which countries, which institution types, type of users (transitory or serious)?

The team undertaking the usage research will play an important role in defining the infrastructure and processes required to provide the level of detail on usage statistics essential for the project.

### 5.2.3. Economic Research

As part of the project, economic research will be undertaken to compare the efficiency and cost effectiveness of

- a. methods of deposit (e.g. publisher assisted versus author self archiving)
- b. access routes to information (e.g. repository sites versus publishers systems).

It is anticipated that the outcomes from PEER will provide factual information on which to base estimates of the economic impact of large scale self-archiving. An added dimension to the economic research, not anticipated at its initiation is of course the current global financial crisis and what effects this may have.

The Invitation to Tender for the economic research is expected to be announced in September 2009.

### 5.2.4. Model Development

The objectives of the model development expected from the project are to:

- evaluate the effects of systematic archiving in open access repositories on traditional publishing and vice versa
- develop one or more models to determine whether (and how) traditional publishing systems can coexist with self-archiving.

The model development itself will use the outcomes of the three PEER research studies in combination with existing models already documented in the literature

to identify the parameters related to the co-existence of archiving and publishing systems. These will be used to develop one or more models to show how the parameters interact and can be optimised, or identify reasons why coexistence may not be viable.

## **6. Ensuring a non-biased approach**

In principle, each of the stakeholder groups represented in PEER could have undertaken their own research into the effects of increased open access and used this to propose policies. It is unlikely, however, that this would have been accepted by the other stakeholders. Various steps have been taken to ensure that PEER will provide unbiased results which will be accepted by all stakeholder groups.

### **6.1. Research Oversight Group**

The first step in ensuring objectivity in the research process was the appointment of a Research Oversight Group for PEER. The members were selected collectively by the PEER Executive. The Research Oversight group consists of the following three distinguished scholars:

- Justus Haucap, Professor of Competition Policy, University of Erlangen and chair of the German Monopolies Commission
- Henk Moed, Senior researcher at the Centre for Science and Technology Studies, Leiden University, recipient of the Derek de Solla Price Award
- Carol Tenopir, Professor of Information Sciences, University of Tennessee, recipient of the International Information Industry Lifetime Achievement Award.

The Research Oversight Group provided input to the research questions included in the Invitations to Tender for Research for i) the behavioural research & ii) the usage research which were announced in December 2008 [10]. Additionally, each member of the group provided independent assessments of the research tenders received in advance of the decision by the Executive. In accordance with the PEER Conflict of Interest Policy, all individuals involved in the selection of the research teams were required to submit a Conflict of Interest Statement in respect of any connections with tendering research teams.

Following the input of the Research Oversight Group, the PEER Executive meet to discuss all the proposals received and reached collective agreement on the selected research teams. Discussions are currently underway with the selected teams and are expected to be announced publicly at the end of April 2009.

## 6.2. Advisory Board

In addition to ensuring as unbiased an approach as possible to the selection of the research teams, PEER will benefit from an Advisory Board of approximately 25 experts from the key stakeholder groups of Funding Agencies, Libraries/ Institutional Repositories, Publishers and Researchers. Candidates for the Advisory Board have been jointly agreed upon by the PEER Executive with invitations being sent in April 2009. The membership of the advisory board will be available on the PEER website once the appointments are confirmed.

The Advisory Board will play a role in validating the research outcomes of PEER and will help to disseminate the results among their respective stakeholder groups.

A schematic indicating the interaction between the various groups involved in PEER is shown in figure 3.

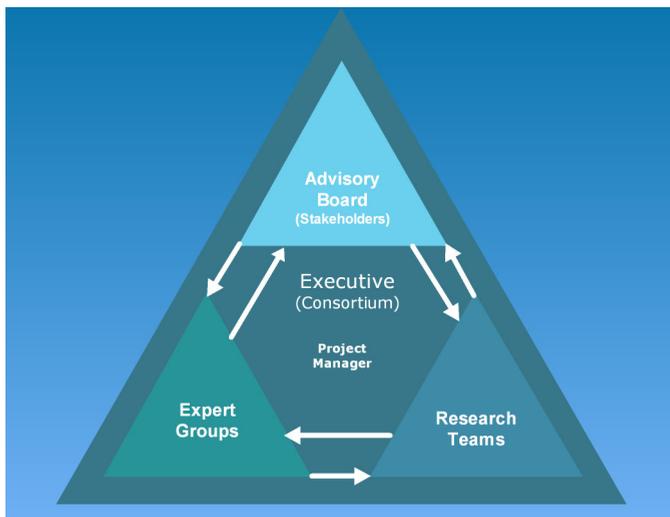


Figure 3: Project Organisation

## 7. Where are we now?

The first six months of PEER have seen great progress for the project. The research teams for the behavioural and usage research have now been identified and will start undertaking baseline studies in May, at which time the initial trials for content deposit will also be underway, following the guidelines for publishers and repositories which will be provided at the end of April. The usage research will also start soon, and will help advance the infrastructure of the project, ensuring the data required for the usage research can be provided at the level of detail essential for the project.

## 8. Expected results

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 PEER Observatory will therefore not be dedicated to looking at the irreversible impacts of change but rather the accumulating indicators that presage that change. The goal is that improved awareness and understanding at an early stage will result in a better, sustainable outcome.

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 on PEER is available from the project website [www.peerproject.eu](http://www.peerproject.eu).

## Acknowledgements

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## Notes and References

- [1] eContent*plus* website [http://ec.europa.eu/information\\_society/activities/econtentplus/index\\_en.htm](http://ec.europa.eu/information_society/activities/econtentplus/index_en.htm).
- [2] PEER funding [http://ec.europa.eu/information\\_society/activities/econtentplus/projects/dili/peer/index\\_en.htm](http://ec.europa.eu/information_society/activities/econtentplus/projects/dili/peer/index_en.htm).
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- [4] Nature precedings <http://precedings.nature.com/>.
- [5] Communication from the Commission to the European Parliament, The Council and the European Economic and Social Committee on scientific information in the digital age: access, dissemination and preservation {SEC(2007)181}

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- [6] Harnad has quoted this figure in several papers and interviews over the years, for example, Harnad, S. (2006) Self-Archiving and Journal Subscriptions: Flawed Method and No Data. Technical Report, ECS, University of Southampton
- [7] Draft report on the provision of usage data and manuscript deposit procedures for publishers and repository managers <http://www.peerproject.eu/reports/>.
- [8] DRIVER: Digital Repository Infrastructure Vision for European Research <http://www.driver-repository.eu/>.
- [9] COUNTER: Counting Online Usage of NeTworked Electronic Resources <http://www.projectcounter.org/>.
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