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PEER

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eContentplus

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a multiannual Community programme to make digital content in Europe more accessible, usable and exploitable.

¹ OJ L 79, 24.3.2005, p. 1.

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2 Project Objectives

PEER (Publishing and the Ecology of European Research), supported by the EC eContent*plus* programme, is investigating the potential 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 has recently been granted a nine month extension and will now run until May 2012.

Peer-reviewed journals play a key role in scholarly communication and are essential for scientific progress and European competitiveness. The publishing and research communities share the view that increased access to the results of EU-funded research is necessary to maximise their use and impact. However, they hold different views on whether mandated deposit in open access repositories will achieve greater use and impact. There are also differences of opinion as to the most appropriate embargo periods. No consensus has been reached on a way forward so far.

The lack of consensus on these key issues stems from a lack of clear evidence of what impact the broad and systematic archiving of research outputs in open access repositories might be, but PEER aims to change this through building a substantial body of evidence, via the development of an "observatory" to monitor the effects of systematic archiving over time.

To provide the observatory with content, participating publishers have collectively provided 241 journals which provide EU authored manuscripts for the project either by publishers directly submitting accepted manuscripts (& metadata), or by publishers inviting authors to self deposit their accepted manuscript, with the publishers providing matching metadata. By the end of year two, publishers had submitted almost 25,000 manuscripts of which ~10,000 have EU corresponding authors.

Publishers are also providing over 200 additional journals which provide a background measure of usage activity at the publishers' platforms.

The PEER Depot which has been developed and is hosted by INRIA serves multiple functions within PEER. It receives all publisher and author submitted content which it processes (including the transformation of metadata), filters for EU research content which it holds for a specified embargo period prior to distributing to participating repositories. Additionally, it acts as a dark archive for PEER.

With the exception of one social sciences 'subject repository', each of the participating PEER repositories hosts all valid PEER content, providing multiple mirror sites for the project.

The Observatory has commissioned and manages behavioural, usage and economic research which collectively are addressing such central issues as:

- How large-scale archiving will affect journal viability
- Whether it increases access
- How it will affect the broader ecology of European research
- Which factors influence the readiness to deposit in institutional and disciplinary repositories and what the associated costs might be

And will inform the development of:

- Models to illustrate how traditional publishing systems can coexist with self-archiving.

Behavioural research surveys the attitudes of authors and readers for a scenario in which stage-two manuscripts are archived in repositories. Usage research investigates actual usage of publishers' journals and repositories as evident from logfiles. Economics research examines the cost involved for publishers and repositories in making stage-two manuscripts available in open access.

The aim of the eContent*plus* programme is to make digital content in Europe more accessible, usable and exploitable. This can only happen when the publishing, library, and scientific research communities work together towards this end in a spirit of openness and mutual respect. PEER has brought together a consortium of partners representing the key stakeholder communities involved in academic research and scholarly publishing and has established a framework for these communities to collaborate on the specific issue of archiving in open access repositories.

3 Consortium

The PEER Consortium consists of seven partner organisations representing the key stakeholder communities involved in academic research and scholarly publishing: the library & repository communities, scholarly publishers and research communities including research funding bodies and researchers both as authors and readers.

3.1 International Association of Science, Technical and Medical Publishers (STM)

STM represents a membership of around 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 exchanging 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.

Role in PEER: STM as coordinator takes a leadership role for the success of the project and the collaboration between the partners representing the publishing, library and research communities. STM also interfaces 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.

3.2 European Science Foundation (ESF)

ESF is an association of 79 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 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 facilitates 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.

3.3 Göttingen State and University Library (SUB) UGOE

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 into the project. Its key role has been 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.

3.4 Max Planck Digital Library (MPDL)

MPDL is a new central service unit established by Max Planck Society (MPS) 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.

Role in PEER:

MPDL functions as an immediate entry point to the publication archives of the 78 institutes of the MPS, where specific disciplinary or generic observations could be realised. MPDL will see how the concept of observatory within the project can be made sustainable by involving forces within the MPDL and the MPS Information Retrieval Services. It provides both editorial support and technical development to facilitate the easy upload of publications on the eDoc and PubMan archives (the two

central repositories of the MPS). MPDL is to lead on the definition of the PEER research studies, providing expertise on methods and indicators to be used in the behavioural, usage and economics research.

3.5 Institut national de recherche en informatique et 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: INRIA has developed and hosts the PEER Depot, a dark archive which forms the central hub of the PEER Project. 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

3.6 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.

Role in PEER: SURF has played a key role in development of Guidelines for 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.

3.7 Bielefeld University Library:

Bielefeld University 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.

Role in PEER: Bielefeld University provides the technical interfaces to DRIVER and to repository networks and aggregations. UniBi is a full technical partner in DRIVER and DRIVER-II and specializes in the aggregation aspect of distributed document repositories. Through this expertise and 5 years of experience operating the scientific search engine BASE which predominantly builds on repository contents, UniBi is facilitating the implementation of the required repository interfaces for the PEER project.

4 Project Results/Achievements

Now at the end of its second year, PEER has created a robust infrastructure, with substantial volumes on content flowing into the project and out to repositories in support of the research. Independent research teams have been engaged to undertake the three principle areas of research: usage, behavioural and economics, with all three research aspects now underway.

4.1 Observatory infrastructure

PEER Publishers:

PEER benefits from the active support of twelve participating publishers:

BMJ Publishing Group; Cambridge University Press; EDP Sciences; Elsevier; IOP Publishing; Nature Publishing Group; Oxford University Press; Portland Press; Sage Publications; Springer; Taylor & Francis Group; Wiley-Blackwell

Collectively the participating publishers are providing content from 241 journals for active participation in the project. These journals cover the following four broad subject areas: life sciences, medicine, physical sciences and social sciences & humanities. A listing of the journals can be found in section 9 of this report.

Publishers are also providing a group of over 200 control titles, which will allow a background measure of usage at publisher platforms.

The actively participating journals have been allocated to two pathways for the project:

Publisher submission – whereby publishers deposit both accepted manuscripts and associated metadata into the project

Author submission – whereby publishers invite authors to self-deposit their accepted manuscripts into the project where they will be matched with publisher provided metadata. A special author submission interface has been created at the PEER Helpdesk to guide authors through the submission process. (<http://peer.mpdl.mpg.de/helpdesk/wiki/PEERdeposit#PEERAuthordeposit>)

PEER Depot:

All submissions are deposited in the **PEER Depot** (a dark archive) where they are processed, undergoing file integrity checks and filtering including:

- Valid journal title / ISSN – is it participating in PEER and is it submitted for the correct pathway?
- Is the corresponding author based in the EU?
- Is the article type valid? (book reviews etc. are removed at this stage since the focus is on research manuscripts)
- Does the manuscript have a publication date associated with it? (required for embargo management)

So far, the PEER Depot has processed:

- nearly **25,000** publishers submitted manuscripts (with metadata) for the publisher submission pathway
- more than **5000** publisher submitted metadata files for matching with author submissions
- **85** author self-deposited manuscripts (resulting from **>5500** invitations sent by publishers)

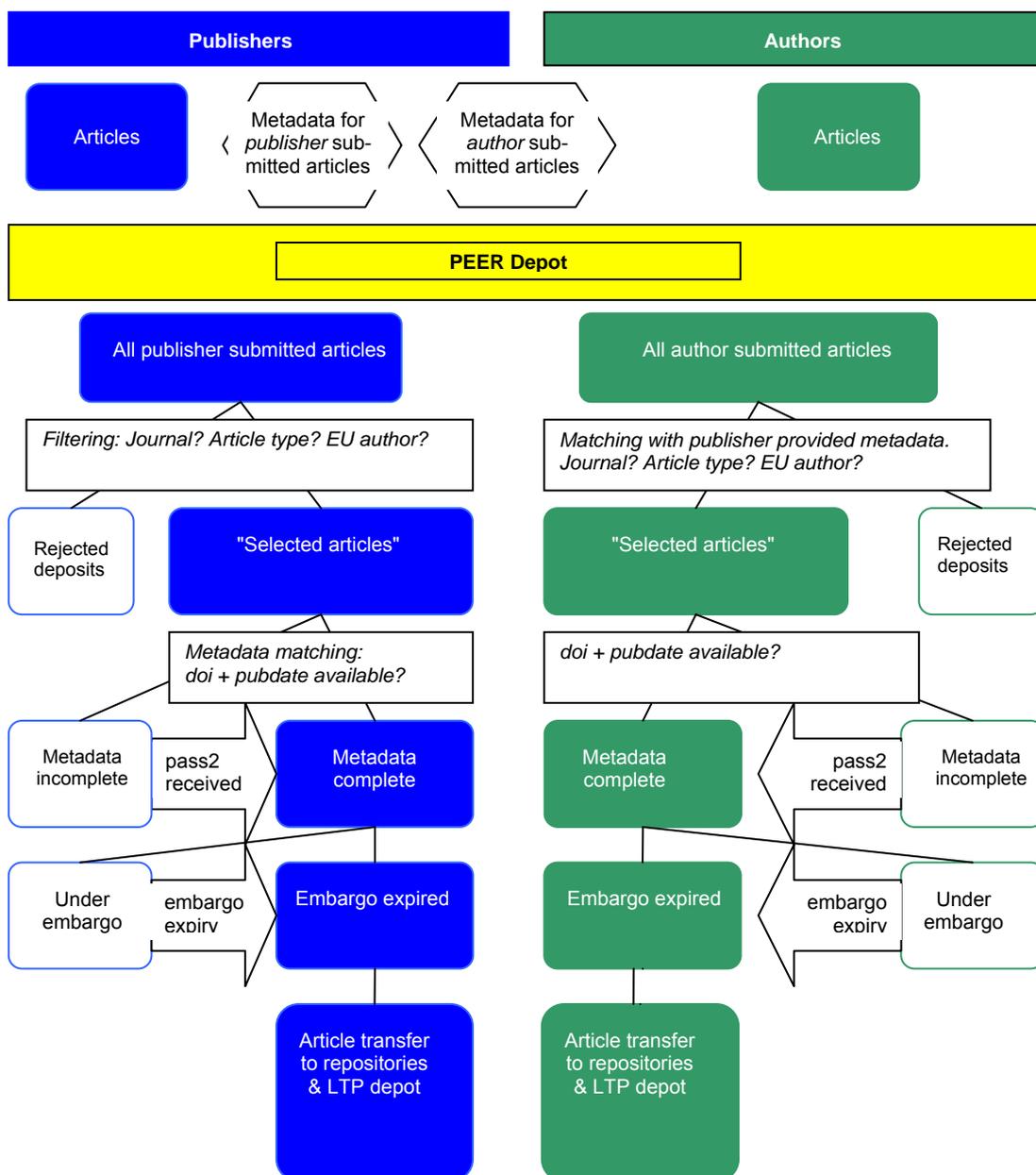
The PEER Depot has also developed tools in support of the PEER Observatory infrastructure including:

- Establishment of a unique exchange format of metadata (publishers / repositories) by means of a TEI customisation plus the mapping of different metadata schemas (e.g. NLM and proprietary schemas)
- The creation of a specific author deposit interface
- An embargo management facility to manage the different embargo periods assigned to each journal

- Implementation of the SWORD protocol to allow application-level deposit of material into repositories
- Additional filtering of social sciences content only for ingest by SSOAR, a participating subject repository
- The ability to extract metadata from manuscript PDFs
- The development of a bug tracking & reporting workflow

After successful processing, the PEER Depot retains valid manuscripts throughout their assigned embargo period, after which they are distributed to the participating repositories.

Schematic of PEER Depot Workflow



PEER Repositories:

At present, seven repositories from across the EU are participating in PEER, with four currently fully integrated into the project and three completing the necessary technical developments:

Participating repositories: eSciDoc.PubMan.PEER, Max Planck Digital Library (MPDL), Max-Planck-Gesellschaft zur Förderung der Wissenschaften e.V. (MPG); HAL, CNRS & Institut National de Recherche en Informatique et en Automatique (INRIA); Göttingen State and University Library (UGOE); Kaunas University of Technology, Lithuania; University Library of Debrecen, Hungary;

SSOAR - Social Sciences Open Access repository (GESIS – Leibniz Institute for the Social Sciences);
TARA - Trinity College Dublin (TCD), Ireland

Archival services for the repositories are being provided by Koninklijke Bibliotheek (National library of the Netherlands)

Fully integrated PEER repositories are receiving all qualifying PEER content following embargo expiry (currently >4500 unique manuscripts), with the exception of SSOAR, a subject based repository which is receiving only social sciences content. The inclusion of a subject based repository was recommended by CIBER, the usage research team and SSOAR was welcomed on board and fully receiving content within year 2. Similarly, PEER is pleased to announce the recent addition of TARA – Trinity College Dublin, following the recommendation from CIBER to have a participating repository located in an English speaking country. TARA is currently completing the final aspects of implementation and is expected to be fully operational soon.

Guidelines:

Procedures for the provision of usage data (logfiles) and manuscript deposit for repository managers and publishers were addressed in great detail during the first year of PEER, resulting in the preparation of the following reports which are available via the PEER website <http://www.peerproject.eu/reports/>.

D2.1 Draft report on the provision of usage data and manuscript procedures for publishers and repository managers

D3.1 Guidelines for publishers and repository managers on deposit, assisted deposit and self-archiving

4.2 PEER Research

In parallel with the consolidation of the PEER infrastructure, and also based on the flow of content, significant progress has been made with behavioural, usage and economics research. The Research Oversight Group has been actively involved in validating the research and advising the PEER research manager.

An open tendering process for the economics research resulted in a number of high quality tenders. The Research Oversight Group evaluated the tenders and provided recommendations to the PEER Executive, which awarded the tender to a team from Bocconi University (Milan).

The main achievements and results of the second year for the different areas of research were as follows:

- Behavioural research: Delivery and acceptance of a baseline report on authors' attitudes and behaviours, based on a series of focus groups, followed by a representative survey with more than 3000 respondents.
- Usage research: Delivery and acceptance of a (confidential) interim report, followed by a comprehensive proof of concept that demonstrates the possibility of extensive logfile analysis, by which data at the article-level may be aggregated and compared across repositories and publishers.
- Economics research: Delivery and acceptance of a (confidential) interim report based on the collection of data about the cost of making Stage 2 manuscripts available in open access, leading to the identification of major models, their value proposition and cost drivers.

The Research Oversight Group (ROG) of PEER has seen a change of membership. Henk Moed and Justus Haucap accepted new positions, which made it impossible for them to continue in the ROG. As their replacements the PEER Executive nominated Dr Cherifa Boukacem (Lille University) and Dr Tomas Baiget (Barcelona).

The second year closed with a two-day meeting of the research teams with the Research Oversight Group, which the PEER Executive also attended. The following day, all research teams presented their interim results to the PEER Advisory Board.

5 Target Users & their Needs

PEER has a number of target user groups. The table below identifies the various target user groups and describes their needs which have been identified in relation to Green Open access and which will be addressed by PEER.

Representatives of these groups are participating at various levels within PEER, from Consortium partners and Advisory Board members, to those taking part in the research studies. This may be by direct participation in market research, or via usage counts as they access information at repository sites or publisher platforms.

The following target user groups and needs were identified at the outset of PEER.

Target User Groups and Needs

Target user description	Needs
Researchers as authors	The opportunity for authors to deposit their research outputs more widely in open access repositories Methods that facilitate deposit on behalf of the author, e.g. publisher-assisted deposit
Researchers as users	Access to research outputs where their institutional library does not subscribe
Other users of research content	Access to research outputs where their institutional library does not subscribe Access to research outputs where the user does not have a library

PEER is exploring attitudes, actual behaviours and costs relating to these needs through the following research activities:

Behavioural research:

The baseline report has established authors' general attitude and behaviour vis-à-vis repositories and journals for a scenario of Green OA, and further research will seek to widen and deepen our understanding of author's attitudes as well as finding out more about users perceptions.

Usage research:

Usage research has begun collecting evidence about the actual usage of repositories and journals, thus enabling an analysis of how often, when and from where scholars and other users access content.

Economics research:

Economics research has begun collecting evidence about the actual cost for repositories and publishers in providing Green open access.

6 Underlying Content

The project centres on 'stage-two' articles: 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.

The publishers participating in PEER have nominated 241 journals to participate in the active deposit part the project covering four broad subject areas: life sciences, medicine, physical sciences and social sciences & humanities.

The specific selection process for the journals is described in Appendix 1 within Section 9 of this report, the outcome of which is as follows. Overall, the largest group of participating journals are the top 'tertile 1' level as measured by 2 year Impact Factors, followed by tertile 2, then 3, then journals currently without an Impact Factor. On average, the participating journals are expected to have >40% EU content.

Each participating journal has an embargo period set by the publisher taking into consideration factors such as subject discipline and individual journal economics.

The selection process used has gained approval from both of the independent research teams appointed for the behavioural and usage research for PEER.

As indicated in section 4, an additional, similar group of over 200 journals has also been identified by the publishers. These will not participate openly in the project, but will be providing logfile information to the usage research team. In this way, the project benefits from being able to distinguish between background effects in the real world and any specific effects seen within the PEER Observatory.

Quantity of content:

As reported in section 4, so far publishers have submitted nearly **25,000 manuscripts** for processing and filtering by the PEER Depot, which has resulted in approximately **10,000 EU manuscripts** for the project so far. Of these, nearly half have passed their allocated embargo expiry date and have been sent to the participating repositories.

Publishers have also **invited approximately 5,580 authors to deposit** into the project and have been submitting metadata for matching with any author deposits received. So far, **only 85 authors have deposited**, giving a **response rate of ~1.5%**.

In support of building the volume of content available to PEER, with a focus on meeting the needs of the usage research team, a number of actions have been taken during the past year. Following consultation with participating publishers, the following steps were implemented:

- 2 new publisher submission journals were added to the project, including back-content
- embargo periods for 25 participating publisher submission journals were reduced (in some cases by up to 12 months).
- additional back-content (manuscripts and metadata) was sourced from participating publishers

Further steps for increasing the content available within the project will be considered should this prove necessary to meet the needs of the usage research team.

Quality of content:

As outlined in section 4, PEER has paid particular attention to defining the formats and attributes of the content (full text articles and metadata) which are being used for the project. These are documented in the following reports which are available from the PEER website (<http://www.peerproject.eu/reports/>):

D2.1 Draft report on the provision of usage data and manuscript procedures for publishers and repository managers

D3.1 Guidelines for publishers and repository managers on deposit, assisted deposit and self-archiving

Based on these guidelines, full text articles are being provided as PDF, with PDF/A-1 the preferred format. The metadata requirements have been derived from the DRIVER Guidelines (<http://www.driver-repository.eu/DRIVER-Guidelines.html>). Mandatory metadata elements identified for PEER are:

- Title
- Creator
- Date
- Identifier
- Type

Additional metadata elements are recommended. Most participating publishers are providing a broad metadata set exceeding the mandatory elements listed above. In one case, however, the metadata set while adhering to the mandatory requirements, is not as extensive regarding provision of 'recommended' elements. Using this as a test case, the PEER Depot has successfully developed the capability to extract metadata elements from PDFs. Following successful trials, this is about to be implemented as part of the live feed for PEER.

As well as the filtering undertaken as described in section 4, the integrity of each file is checked at the PEER Depot as part of the standard processing along with checks to ensure all necessary metadata elements are present.

Usage logfiles:

All participating publishers and repositories are providing CIBER, the usage research team, with logfile data which adheres to certain criteria specified by CIBER.

7 Summary of Activities

The second year of PEER has seen the continued collaboration of PEER's extensive range of participants from various stakeholder groups, many of whom provide their time and expertise on a voluntary basis. On the technical side, the guidelines prepared throughout year 1 have been successfully implemented, which in tandem with the PEER Depot developments have resulted in a robust and scalable infrastructure for the PEER Observatory. Technical issues continue to arise, but all participants continue to work collectively to explore options and provide solutions which ensure the continued viability of the project.

All three strands of research continue in their efforts to gather empirical evidence. The Research Oversight Group has validated the approaches and evaluated the interim results. The PEER project is thus confident that the large-scale research on the behavioural, usage and economic aspects of green open access scenarios will yield new and significant insights.

In the summer of 2010, PEER held its first face to face meeting with representatives of its Advisory Board. This provided the opportunity to update the board on all aspects of project activities, with a particular emphasis on research developments. The event was very positive for PEER with broad support from the board for the project's objectives, activities to date and future plans and provided valuable input to the next phase of the three key areas of research.

During the second year of PEER, partners have continued to raise awareness via conference presentations and articles, a listing of which is available at <http://www.peerproject.eu/publications-presentations/>.

News releases and announcement have continued to be disseminated via STM's extensive publishing and media network, the DRIVER network and the research networking programmes of ESF plus additional direct contacts which have been made with the research community. Announcements have also been circulated to other Open Access related projects in which partners all over Europe are involved (i.e. IP-OA II, OA-Netzwerk, OAPEN, Open Access Statistics, PARSE.insight, CARPET, SHAMAN).

The PEER website (www.peerproject.eu) has been enhanced to include a Helpdesk, available to all, but aimed in particular at the key stakeholder groups, especially authors who have been invited to submit their accepted manuscripts to a PEER via the PEER author submission interface which has been established for the project. All news releases and public reports continue to be made available via the website.

With the PEER Observatory infrastructure now in place, facilitating the continuous growth of volume of content for the project, and the three key areas of research fully underway, PEER is well placed to enter its final phase.

8 Impact & Sustainability

PEER has brought together a collaboration of stakeholder groups (publishers, libraries/ repositories and the research /funder community) who collectively have successfully developed an Observatory to monitor the effects of the systematic archiving of stage-two research outputs (accepted manuscripts) in open access repositories.

With all key stakeholder groups represented within PEER, the aim is for the data gathered by the observatory to be used to provide an evidence-based foundation for discussions on future policy by stakeholder groups within the EU. Sustainability for PEER therefore focuses on disseminating and exploiting the evidence based project results with the aim of informing future open access policy decisions. PEER's role is not to recommend what these future policies should be, but to deliver credible data (observables), insights into the impact of self-archiving and models that publishers, libraries and funding agencies can use to develop consistent and workable policies that benefit researchers.

Interest in PEER has been growing, as evidenced by the extensive referencing of PEER in submissions to the US White House Office of Science & Technology Policy in the US as an evidence based approach to resolving issues in scholarly publishing. This included a specific mention of PEER in the Report and Recommendations of the 'Scholarly Publishing Roundtable', an expert panel of librarians, library scientists, publishers, and university academic leaders convened by the U.S. House Committee on Science and Technology, in collaboration with the White House Office of Science and Technology Policy (OSTP). (The Report and Recommendations are available at <http://www.aau.edu/WorkArea/DownloadAsset.aspx?id=10044>; the reference to PEER is on page 2).

In support of PEER, partners are undertaking a programme of dissemination via conference presentations and publications. This initially focussed on awareness raising, but is now evolving into a strategy of informing, engaging and ultimately encouraging take up of the evidence gained from the research results.

Participating publishers have confirmed that all research content delivered to repositories during the project can remain in these repositories after the project ends and continue to be used by the research community. Participating repositories will sustain this content as part of their normal role.

Tools & technologies:

In creating the Observatory, PEER has been developing and adopting a range of tools and technologies which have potential applications outside of the finite duration of the PEER project including:

- Implementation of the SWORD protocol to allow reliable deposits into repositories
- Automated metadata extraction from manuscript PDFs
- Metadata mapping of different metadata schemas (NLM2.0, NLM 3 and proprietary formats)
- Use of TEI customisation for an exchange format of metadata (publishers / repositories)
- The creation of viable workflow models for content submission, filtering, processing and repository ingest
- Author submission interface
- The ability to match author manuscripts with publisher provided metadata

The helpdesk set up for PEER is also likely to be adopted for use by the repository community following the end of the project.

The volume of logfile data for usage research being provided from so many publisher and repositories within PEER is unprecedented. Because of this, and the unique research opportunity provided by PEER it is anticipated that some of the techniques being created and implemented by CIBER for the usage research within PEER will also have applications beyond PEER.

9 Appendices

Appendix 1: Participating journals selection process

Appendix 2: PEER Author submission journals by publisher

Appendix 3: PEER Publisher submission journals by publisher

Appendix 1: Participating journals selection process

The publishers participating in PEER have nominated 241 journals to participate in the active deposit part the project. This core group of the journals participating in PEER were selected from a starting list of journals with a Thomson Reuters *JCR* Impact Factor and >20% EU content ('EU content' is defined as having at least one author from an EU country). In each of the four broad subject disciplines (*life sciences*, *medicine*, *physical sciences* and *social sciences & humanities*), the listing was divided into tertiles^{2*} based on 2 year Impact Factors. Publishers then selected a spread of tier 1, 2 & 3 journals, where tier 1 journals have the highest Impact Factors. For one publisher, this selection process was random, while others had to make more pragmatic selections.

Additional or substituted titles arose from a number of factors including:

- Technical issues (production systems not compatible with PEER submission requirements)
- Decision to include or exclude certain society titles
- Non-Impact Factor journal but anticipated high % EU content
- Non-Impact Factor journal, but adding an interesting subject field
- Non-Impact Factor journal, but providing non-English content
- Matching with non-participating 'compare and contrast' titles for the project

The outcome:

Overall, the largest group of participating journals are the top 'tertile 1' level as measured by 2 year Impact Factors, followed by tertile 2, then 3, then journals currently without an Impact Factor. On average, the participating journals are expected to have >40% EU content.

Each participating journal has an embargo period set by the publisher taking into consideration factors such as subject discipline and individual journal economics.

The selection process used has gained approval from both of the independent research teams appointed for the behavioural and usage research for PEER.

² tertile = one third of the overall group

Appendix 2: PEER Author submission journals by publisher

Publisher/ Journal	ISSN	Broad Classification	Embargo* (months)	Language (if not Eng)
BMJ Publishing Group				
Journal of Neurology, Neurosurgery and Psychiatry	0022-3050	Medicine	6	
Journal of Medical Genetics	0022-2593	Medicine	5	
Sexually Transmitted Infections	1368-4973	Medicine	5	
Cambridge University Press				
The Journal of Agricultural Science	0021-8596	Life Sciences	12	
Bilingualism: Language and Cognition	1366-7289	Social Sciences & Humanities	12	
Journal of Biosocial Science	0021-9320	Life Sciences	12	
Journal of Helminthology	0022-149X	Life Sciences	12	
Science in Context	0269-8897	Social Sciences & Humanities	12	
Urban History	0963-9268	Social Sciences & Humanities	12	
Elsevier				
Annales d'Endocrinologie	0003-4266	Life Sciences	18	French
Annales de Dermatologie et de Venerologie	0151-9638	Medicine	18	French
Annals of Pure and Applied Logic	0168-0072	Physical Sciences	18	
Applied Acoustics	0003-682X	Physical Sciences	24	
Biomass and Bioenergy	0961-9534	Physical Sciences	24	
Blood Cells Molecules and Diseases	1079-9796	Medicine	18	
Brain and Language	0093-934X	Life Sciences	18	
Cell Calcium	0143-4160	Life Sciences	12	
Computers and Geotechnics	0266-352X	Physical Sciences	24	
Energy	0360-5442	Physical Sciences	18	
Enfermedades infecciosas y Microbiologia Clinica	0213-005X	Medicine	18	Spanish
European Journal of Radiology	0720-048X	Medicine	18	
European Journal of Soil Biology	1164-5563	Life Sciences	18	
European Journal of Surgical Oncology (EJSO)	0748-7983	Medicine	12	
Fire Safety Journal	0379-7112	Physical Sciences	24	
Immunology Letters	0165-2478	Life Sciences	12	
International Journal of Antimicrobial Agents	0924-8579	Medicine	12	
Journal of Pragmatics	0378-2166	Social Sciences & Humanities	24	
Journal of Theoretical Biology	0022-5193	Life Sciences	12	
Materials Science in Semiconductor Processing	1369-8001	Physical Sciences	24	
Nuclear Engineering and Design	0029-5493	Physical Sciences	24	
Radiotherapy and Oncology	0167-8140	Medicine	18	
Solar Energy	0038-092X	Physical Sciences	24	
Telecommunications Policy	0308-5961	Physical Sciences	18	
IOP Publishing				
Classical and Quantum Gravity	0264-9381	Physical Sciences	12	
Journal of Physics A: Mathematical and Theoretical	1751-8113	Physical Sciences	24	
Journal of Physics: Condensed Matter	0953-8984	Physical Sciences	12	
Nature Publishing Group				
Bone Marrow Transplantation	0268-3369	Medicine	6	
Embo Journal, The	0261-4189	Life Sciences	6	
Gene Therapy	0969-7128	Life Sciences	6	
Genes and Immunity	1466-4879	Life Sciences	6	
Leukemia	0887-6924	Medicine	6	
Nature Genetics	1061-4036	Life Sciences	6	
Nature Structural & Molecular Biology	1545-9993	Life Sciences	6	
Oncogene	0950-9232	Life Sciences	6	
Oxford University Press				
Family Practice	0263-2136	Medicine	12	
Molecular Biology and Evolution	0737-4038	Life Sciences	12	
Systematic Biology	1063-5157	Life Sciences	12	
Annals of Occupational Hygiene	0003-4878	Medicine	12	
Sage Publications				
Active Learning in Higher Education	1469-7874	Social Sciences & Humanities	6	
Concurrent Engineering	1063-293X	Physical Sciences	12	
Cultural Geographies	1474-4740	Social Sciences & Humanities	12	
Ethnicities	1468-7968	Social Sciences & Humanities	24	
European Journal of Cultural Studies	1367-5494	Social Sciences & Humanities	18	
European Journal of Industrial Relations	0959-6801	Social Sciences & Humanities	12	
European Journal of Women's Studies	1350-5068	Social Sciences & Humanities	18	
European Union Politics	1465-1165	Social Sciences & Humanities	24	
Global Social Policy	1468-0181	Social Sciences & Humanities	6	
Group Processes and Intergroup Relations	1368-4302	Social Sciences & Humanities	18	
Health	1363-4593	Social Sciences & Humanities	12	
History of Psychiatry	0957-154X	Social Sciences & Humanities	12	
International Journal of Damage Mechanics	1056-7895	Physical Sciences	12	

Journal of Biomaterials Applications	0885-3282	Physical Sciences	12	
Journal of Plastic Film and Sheeting	8756-0879	Physical Sciences	12	
Journal of Thermoplastic Composite Materials	0892-7057	Physical Sciences	12	
Public Understanding of Science	0963-6625	Social Sciences & Humanities	18	
Second Language Research	0267-6583	Social Sciences & Humanities	24	
Time & Society	0961-463X	Social Sciences & Humanities	12	
Vascular Medicine	1358-863X	Medicine	12	
Springer				
Biotechnology Letters	0141-5492	Life Sciences	12	
Cancer Chemotherapy and Pharmacology	0344-5704	Medicine	12	
Celestial Mechanics and Dynamical Astronomy	0923-2958	Physical Sciences	6	
European Journal of Clinical Microbiology & Infectious Diseases	0934-9723	Life Sciences	12	
European Journal of Epidemiology	0393-2990	Medicine	12	
European Journal of Wood and Wood Products - Holz Als Roh und Werkstoff	0018-3768	Physical Sciences	12	German
Journal of Ornithology	0021-8375	Life Sciences	12	
Journal of Molecular Modeling	1610-2940	Physical Sciences	12	
Neophilologus	0028-2677	Social Sciences & Humanities	6	
Nonlinear Dynamics	0924-090X	Physical Sciences	12	
Queueing Systems	0257-0130	Social Sciences & Humanities	24	
Rheumatology International	0172-8172	Medicine	12	
Taylor & Francis Group				
Applied Economics Letters	1350-4851	Social Sciences & Humanities	18	
British Journal of Guidance and Counselling	0306-9885	Social Sciences & Humanities	12	
Civil Engineering and Environmental Systems	1028-6608	Physical Sciences	12	
Communications in Statistics – Theory and Methods	0361-0926	Physical Sciences	12	
Ergonomics	0014-0139	Physical Sciences	12	
International Journal of Environmental Analytical Chemistry	0306-7319	Physical Sciences	12	
International Journal of Psychology	0020-7594	Life Sciences	12	
International Journal of Remote Sensing	0143-1161	Physical Sciences	12	
International Journal of Systems Science	0020-7721	Physical Sciences	12	
Journal of Engineering Design	0954-4828	Physical Sciences	12	
Journal of Modern Optics	0950-0340	Physical Sciences	12	
Journal of Natural History	0022-2933	Life Sciences	12	
Journal of Sports Sciences	0264-0414	Social Sciences & Humanities	18	
Optimization Methods and Software	1055-6788	Physical Sciences	12	
Phase Transitions	0141-1594	Physical Sciences	12	
Philosophical Magazine Letters	0950-0839	Physical Sciences	12	
Psychotherapy Research	1050-3307	Social Sciences & Humanities	12	
Wiley-Blackwell				
Applied Cognitive Psychology	0888-4080	Social Sciences & Humanities	24	
Applied Organometallic Chemistry	0268-2605	Physical Sciences	24	
Biomedical Chromatography	0269-3879	Physical Sciences	24	
Biopharmaceutics and Drug Disposition	0142-2782	Life Sciences	12	
Computer Animation and Virtual Worlds	1546-4261	Physical Sciences	24	
Concurrency and Computation: Practice & Experience	1532-0626	Physical Sciences	24	
Contrast Media and Molecular Imaging	1555-4309	Physical Sciences	24	
European Law Journal	1351-5993	Social Sciences & Humanities	24	
European Transactions on Electrical Power	1430-144X	Physical Sciences	24	
Forest Pathology	1437-4781	Life Sciences	12	
Higher Education Quarterly	0951-5224	Social Sciences & Humanities	24	
Hippocampus	1050-9631	Life Sciences	12	
Infant and Child Development	1522-7227	Social Sciences & Humanities	24	
International Journal for Numerical Methods in Engineering	0029-5981	Physical Sciences	24	
International Journal of Adaptive Control and Signal Processing	0890-6327	Physical Sciences	24	
International Journal of Applied Linguistics	0802-6106	Social Sciences & Humanities	24	
International Journal of Osteoarchaeology	1047-482X	Life Sciences	12	
International Journal of Systematic Theology	1463-1652	Social Sciences & Humanities	24	
Journal of Advanced Nursing	0309-2402	Medicine	12	
Journal of Clinical Periodontology	0303-6979	Medicine	12	
Journal of Molecular Recognition	0952-3499	Physical Sciences	24	
Journal of Sociolinguistics	1360-6441	Social Sciences & Humanities	24	
Luminescence	1522-7235	Physical Sciences	24	
Marine Ecology	0173-9565	Life Sciences	24	
Modern Theology	0266-7177	Social Sciences & Humanities	24	
Particle and Particle Systems Characterization	0934-0866	Physical Sciences	24	
Polymers for Advanced Technologies	1042-7147	Physical Sciences	24	
River Research and Applications	1535-1459	Life Sciences	12	
Zoo Biology	0733-3188	Life Sciences	12	

Appendix 3: PEER Publisher submission journals by publisher

Publisher/ Journal	ISSN	Broad Classification	Language (if not Eng)
BMJ Publishing Group			
British Journal of Ophthalmology	0007-1161	Medicine	
Journal of Epidemiology and Community Health	0143-005X	Medicine	
Tobacco Control	0964-4563	Medicine	
EDP Sciences			
ESAIM: Probability and Statistics	1292-8100	Physical Sciences	French/ Eng
The European Physical Journal - Applied Physics	1286-0042	Physical Sciences	
Elsevier			
Annales Medico-Psychologiques	0003-4487	Medicine	French
Applied Thermal Engineering	1359-4311	Physical Sciences	
Astroparticle Physics	0927-6505	Physical Sciences	
Biochemical Pharmacology	0006-2952	Life Sciences	
Biochimica et Biophysica Acta (BBA) – Molecular Basis of Disease	0925-4439	Life Sciences	
Biophysical Chemistry	0301-4622	Physical Sciences	
Composites Science and Technology	0266-3538	Physical Sciences	
Computer Speech & Language	0885-2308	Physical Sciences	
European Journal of Mechanics - A/Solids	0997-7538	Physical Sciences	
Experimental and Toxicologic Pathology	0940-2993	Life Sciences	
Experimental Gerontology	0531-5565	Medicine	
Human Movement Science	0167-9457	Life Sciences	
Icarus	0019-1035	Physical Sciences	
International Journal of Impact Engineering	0734-743X	Physical Sciences	
International Journal of Non-Linear Mechanics	0020-7462	Physical Sciences	
Journal of Econometrics	0304-4076	Social Sciences & Humanities	
Journal of Economic Behavior & Organization	0167-2681	Social Sciences & Humanities	
Journal of Economic Dynamics & Control	0165-1889	Social Sciences & Humanities	
Journal of Experimental Social Psychology	0022-1031	Social Sciences & Humanities	
Journal of Geodynamics	0264-3707	Physical Sciences	
Journal of Physics and Chemistry of Solids	0022-3697	Physical Sciences	
Marine Environmental Research	0141-1136	Life Sciences	
Molecular and Cellular Endocrinology	0303-7207	Life Sciences	
Physics of the Earth and Planetary Interiors	0031-9201	Physical Sciences	
Pulmonary Pharmacology & Therapeutics	1094-5539	Medicine	
Speech Communication	0167-6393	Physical Sciences	
Statistics & Probability Letters	0167-7152	Physical Sciences	
Veterinary Microbiology	0378-1135	Medicine	
IOP Publishing			
Journal of Physics B: Atomic, Molecular and Optical Physics	0953-4075	Physical Sciences	
Journal of Physics D: Applied Physics	0022-3727	Physical Sciences	
Journal of Physics G: Nuclear and Particle Physics	0954-3899	Physical Sciences	
Nature Publishing Group			
Cell Death and Differentiation	1350-9047	Life Sciences	
European Journal of Clinical Nutrition	0954-3007	Medicine	
European Journal of Human Genetics	1018-4813	Life Sciences	
Molecular Psychiatry	1359-4184	Medicine	
Nature Immunology	1529-2908	Life Sciences	
Nature Neuroscience	1097-6256	Life Sciences	
Neuropsychopharmacology	0893-133X	Life Sciences	
Prostate Cancer and Prostatic Diseases	1365-7852	Medicine	
Oxford University Press			
International Journal of Epidemiology	0300-5771	Medicine	
Journal of Plankton Research	0142-7873	Life Sciences	
Portland Press			
Clinical Science	0143-5221	Medicine	
Biochemical Journal	0264-6021	Life Sciences	
Bioscience Reports	0144-8463	Life Sciences	
Springer			
Agriculture and Human Values	0889-048X	Social Sciences & Humanities	
Annals of Hematology	0939-5555	Medicine	
Breast Cancer Research and Treatment	0167-6806	Medicine	
Crime Law and Social Change	0925-4994	Social Sciences & Humanities	
European Child & Adolescent Psychiatry	1018-8827	Social Sciences & Humanities	
European Journal of Clinical Pharmacology	0031-6970	Life Sciences	
European Journal of Population	0168-6577	Social Sciences & Humanities	
European Journal of Wildlife Research	1612-4642	Life Sciences	
Formal Aspects of Computing	0934-5043	Physical Sciences	
Helgoland Marine Research	1438-387X	Physical Sciences	
Journal of Public Health	0943-1853	Social Sciences & Humanities	
Journal of Seismology	1383-4649	Physical Sciences	

Linguistics and Philosophy	0165-0157	Social Sciences & Humanities	
Review of World Economics	1610-2878	Social Sciences & Humanities	
Revue de Synthese	0035-1776	Social Sciences & Humanities	French
Taylor & Francis Group			
Aids Care	0954-0121	Life Sciences	
Applied Economics	0003-6846	Social Sciences & Humanities	
Avian Pathology	0307-9457	Life Sciences	
British Poultry Science	0007-1668	Life Sciences	
Communications in Statistics – Simulation and Computation	0361-0918	Physical Sciences	
Engineering Optimization	0305-215X	Physical Sciences	
Ethnic and Racial Studies	0141-9870	Social Sciences & Humanities	
Europe-Asia Studies	0966-8136	Social Sciences & Humanities	
Food Additives & Contaminants (Part A)	0265-203X	Life Sciences	
International Journal of Computer Integrated Manufacturing	0951-192X	Physical Sciences	
International Journal of Computer Mathematics	0020-7160	Physical Sciences	
International Journal of Production Research	0020-7543	Physical Sciences	
International Journal of Science Education	0950-0693	Social Sciences & Humanities	
Journal of Development Studies	0022-0388	Social Sciences & Humanities	
Molecular Physics	0026-8976	Physical Sciences	
Molecular Simulation	0892-7022	Physical Sciences	
Philosophical Magazine	1478-6435	Physical Sciences	
Psychology and Health	0887-0446	Social Sciences & Humanities	
Quantitative Finance	1469-7688	Social Sciences & Humanities	
Regional Studies	0034-3404	Social Sciences & Humanities	
Supramolecular Chemistry	1061-0278	Physical Sciences	
Technology Analysis & Strategic Management	0953-7325	Social Sciences & Humanities	
Wiley-Blackwell			
Alimentary Pharmacology & Therapeutics	0269-2813	Medicine	
Allergy	0105-4538	Medicine	
American Journal of Hematology	0361-8609	Medicine	
Bioethics	0269-9702	Social Sciences & Humanities	
Biotechnology Journal	1860-6768	Life Sciences	
British Journal of Haematology	0007-1048	Medicine	
Cell Biochemistry and Function	0263-6484	Life Sciences	
Clinical Endocrinology	0300-0664	Medicine	
Corporate Governance	0964-8410	Social Sciences & Humanities	
Developing World Bioethics	1471-8731	Social Sciences & Humanities	
Developmental Science	1363-755X	Social Sciences & Humanities	
Electrophoresis	0173-0835	Life Sciences	
Fuel Cells	1615-6846	Physical Sciences	
Global Change Biology	1354-1013	Life Sciences	
Haemophilia	1351-8216	Medicine	
Histopathology	0309-0167	Medicine	
Human Brain Mapping	1065-9471	Life Sciences	
Human Mutation	1059-7794	Life Sciences	
International Journal of Clinical Practice	1368-5031	Medicine	
Journal of Clinical Ultrasound	0091-2751	Medicine	
Journal of Medical Virology	0146-6615	Medicine	
Journal of Physical Organic Chemistry	0894-3230	Physical Sciences	
Molecular Microbiology	0950-382X	Life Sciences	
Oral Diseases	1354-523X	Medicine	
Pediatric Anesthesia	1155-5645	Medicine	
Pediatric Pulmonology	8755-6863	Medicine	
Phytotherapy Research	0951-418X	Life Sciences	
Social Development	0961-205X	Social Sciences & Humanities	
ZAAC - Zeitschrift für anorganische und allgemeine Chemie / Journal of Inorganic and General Chemistry	0044-2313	Physical Sciences	German / English

Note: Embargo periods ranging from 0 months to 36 months are being applied