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ELPUB 2009. Rethinking electronic publishing: innovation in communication paradigms and technologies

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The 13th ELPUB conference took place in Milan, from 10 to 12 June 2009 [1]. In the three-day event, 40 speakers coming from each of the five continents – a sign of the worldwide dimension of innovation and a bridge over information divide – presented papers on a broad range of technical, conceptual, and financial aspects of scholarly communication, trying to outline the complex scenario of changing paradigms and technologies, as underlined by Susanna Mornati and Turid Hedlund, who organized the meeting. The aim of this report is to describe the main conference themes that emerged from the 10 conference sessions of intense debate.

One of the transversal paradigms, cited by most of the presenters and approached from different perspectives, is Open Access, actually one of the most interesting, debated and pioneering facets of scholarly communication. The last afternoon of ELPUB featured an «unconference» on openness in the academic environment. Leslie Chan, along with co-chairman Gale Moore, presented OASIS – Open Access Scholarly Information Sourcebook (http://www.openoasis.org/). It is a website aimed at creating a community of users – researchers, librarians, publishers, administrators, public and students: in a word, all the stakeholders involved in the potential benefits of Open Access itself – and at collecting resources dealing with the principles, advantages, approaches and means for achieving Open Access. Users are encouraged to share and modify materials according to their environment and needs. Gathering information about several aspects of Open Access – data on the impact advantage, practical tools such as addenda, best practices, training and tutorial objects – in a one-stop shopping portal would also ensure easier updating, in a collaborative way.

«Collaboration» was the keyword of Simon Tanner's opening keynote speech dealing with strategies for the Information Age. The real value in our information age does not lie exclusively in the information itself: information has to be managed - but, first, it has to be accessible. The main effort for the near future is to deliver better information resources through e-publishing.

When considered from an access perspective, digital preservation is a critical aspect of managing digital information, and therefore deep reflection about digital containers and content, their context and behaviour is needed. Assuming that there is no accidental preservation of digital information – as was the case in archaeology – a strong call to action has been issued to deal with digital information preservation. Digital preservation is also related to the concept of sustainability: Tanner pointed to the impact that unfunded mandates could have in the future, both on publishers and libraries. Here the need arises for collaboration. Sharing costs and expertise would benefit both publishers and libraries, ensuring the creation of a public repository where, at the same time, people could connect with the past and invent the future.

«Integration» has been the common theme of many ELPUB presentations, such as:

- the CUFTS project, presented by Heather Morrison, a collaborative library work that is focused on creating a collection of quality free and open access journals;

- the Manuscriptorium project of the National Library of the Czech Republic, which is aimed at seamless access to data from different storage locations, within the context of the digitization of historical library materials;

- DBClear software, developed under a grant of the German Research Foundation, which allows an innovative system for adding in-context comments and annotation features, bringing the academic discussion back to its origin.

«Evaluation» was discussed both *ex ante*, in revising the canon of peer review, and *ex post*, in combining new metrics and bibliometric factors. Research on scholarly communication processes and quality control has been conducted by Charles Oppenheim and Fytton Rowland, whose presentation covered traditional peer review – which they recognize is not to be set aside – and the new Web 2.0 environment, which is blurring boundaries between traditional types of scholarly publication. The logic of Web 2.0 is the basis for «Il Flipper e la Nuvola», a web project used in a Biochemistry course: the underpinning concept is that there are Rules (falsifiable, according to Karl Popper), and information can be selected on the basis of its congruence with the internal rules of a particular system, rather than to the current scientific paradigm as stated by the "experts". Relying on the indicators available in the current network context, Peter Binfield outlined the new article-level metrics provided in each PLoS journal. Transformational as usual, PLoS ONE separated the functions that are most effectively performed before publication, such as peer review, and those that can most effectively be performed after publication, such as impact assessment. In measuring impact, other sources besides citations are taken into account, including: posts on blogs, comments, and social bookmarking, providing a multi-sided list of impact indicators. In this process, Binfield recognized that metadata are crucial, and he envisions a future in which texts will be enriched by structural, semantic and rhetorical metadata to foster new services to researchers.

One ELPUB session was dedicated to mark-up and metadata creation, whilst another session focussed on semantics and ontologies, confirming their central position in advancing digital scholarly communication. On this point, Alfio Ferrara and Massimo Parodi provided a fascinating comparison between content creation in the Middle Ages versus its creation on the Web. In analyzing content transformation from paper to electronic formats, as well as transforming the medium of dissemination, they focussed on the area of rhetoric as the intermediate connection between content and its final distribution. They described the three traditional parts of rhetoric (*elocutio, dispositio, memoria*) and the web architecture, to show how the web could be used to publish content in a new way rather than simply reproducing the paper in online form. Looking forward to Web 3.0, in which the web becomes the medium for data, information and knowledge exchange through the use of shared semantics, the Harvard Stem cell Institute developed SCF –(Science Collaboration Framework), a software framework that scientific communities can use to create open-access, scientific publications online. Based on Web 3.0 technologies (social web, semantic web, text-mining), SCF allows communities of users to publish complex scientific articles, annotate them with controlled vocabularies or ontologies, register the research interests of members and conduct discussion forums: in effect, creating new communities. Because SCF is

interoperable, it fosters a significant reduction in artificial barriers between research disciplines, and a much more dynamic and agile approach to information exchange.

As to new suggestions and features of scholarly communication, Nicola Cavalli gave a functional overview of the concept of "overlay publication," focusing on a particular case study of what can be defined as an overlay book that combines free access online and print on demand, and Peter Linde offered a survey of the new practice of self-archiving from the internal point of view of authors, calling attention to some critical points and recommending ways to overcome challenges the authors face. Michael Mabe presented PEER (Publishing and the Ecology of European Research), a project funded within the 7th European Framework Program. PEER deals with the collaboration between publishers, repositories and the research community and is aimed at improving understanding of the effects of the large-scale deposit of preprint (accepted manuscripts) in open access repositories, addressing the so-called "Green road" to Open Access [2]. The creation of an observatory with European content from approximately 300 peer-reviewed journals from participating publishers is expected to allow PEER to monitor the effects of systematic archiving over time. Independent teams will be involved in research that tackles author and reader behaviour, article usage at repository and publisher sites, and the economics of publisher-assisted deposit and author self-archiving. Expected outcomes include: evidence based guidance for the evolution of open access policy; a model of the effects of archiving on the traditional publishing systems; and, it is hoped, deeper mutual understanding between publishers and researchers.

In a publishing market where new players continually enter and upset established dynamics, economic models play a central role, as emerged in the ELPUB session dedicated to this topic and chaired by Turid Hedlund.

In the knowledge economy, the generation and exploitation of knowledge has become a main source of wealth; therefore, the capacity of a system to disseminate the latest scientific information plays a key role.

Traditional models for the distribution, reproduction, control and publishing information are in deep crisis, and a key question is whether or not new economic models for publishing research results will better serve (as to efficiency and effectiveness) researchers and their institutions. Another important issue concerns the sustainability of the new models. John Houghton described the results of a JISC-funded project aimed at identifying the most cost-effective system by examining the costs and benefits of three different scholarly publishing models: subscription publishing, open access publishing and self-archiving (only certified publications such as those in the Green road model and overlay journals). The costs and benefits of the three different models were quantified, in an attempt to explore the potential cost savings resulting from the alternative publishing models. Houghton's study demonstrated that Open Access (both via self-archiving and open access publishing) would bring substantial benefits over the longer run while benefits in the short term may be lower. In any event, a move towards open access publishing could be profitable for researchers and their institutions.

The presentation of Paola Dubini and Elena Giglia focused on economic models too, from a different perspective. In their (preliminary) study they compared the economic models of 12 peer

reviewed journals from different academic disciplines, taking into consideration both the existence of information asymmetries and the problem of reaching critical mass in readership and authors' markets. Visibility, accessibility and benefits were compared. The results of the survey have shown a pre-eminence of Open Access models (as was also shown in Houghton's study) – even if traditional journals have very quickly implemented the innovative services offered by Open Access journals. The presence of new players and new business models has fostered the development of new services and improved the competition, to the benefit of the research community; in this scenario, universities and faculties play a key role in orienting researchers' choice of one of the two publishing models.

Henk Moed's closing keynote speech focused on three main issues. First, he outlined the role and significance of bibliometric indicators in the assessment of research performance. They must be accurate, sophisticated, up-to-date, combined with expert knowledge and used with care, taking into consideration their pros and cons. According to Moed, future research assessment must be performed through an intelligent combination of metrics and peer review, which may enhance their validity and cost-effectiveness.

The second issue discussed by Moed was the effect of Open Access upon citation impact and the statistical relationships between usage (downloads) and citations. He attempted to verify the hypothesis that wider access leads to more downloads, more readings, and more citations, and therefore to more funding. While he found that papers deposited in ArXiv are more cited than those that are not deposited in ArXiv (though published in the same journal), the two main reasons seem to be that the papers benefit from the effect of early view and that it is primarily the top researchers who deposit their papers in ArXiv (resulting in selection *ex ante*). In short, Moed identifies no significant citation advantage in Open Access, even if we are to believe that high energy physics is not representative of the present general situation in scholarly communication. His conclusions show that the current citation advantage of Open Access papers will be leveled when all publications become available via Open Access.

The third issue discussed in Moed's keynote speech was assessment in the area of the humanities where there is a lack of reference indexes such as Scopus or Web of Science, due to the different types of research, outcomes and habits between the humanities and science communities. Moed explored five different options for the creation of a comprehensive database for the humanities and social sciences, including combining a number of existing European special SSH bibliographies, creating a new database from publishers' archives, stimulating further enhancement of WoS and Scopus, exploring the potentialities and limitations of Google Scholar and Google Book Search, and creating a citation index from institutional repositories. Much work must be done in these fields, but the availability of full text seems to be a key issue.

After Heather Morrison's reminder of the 2009 Public Knowledge Project conference [3] to be held this month, ELPUB ended with the final «unconference» led by Gail Moore and Leslie Chan discussed at the beginning of this report. The "unconference" was an informal, rich sharing of experiences and opinions – similar to the kind of chats you enjoy during a coffee break – extended to all participants. It served as a general brainstorming on the key issues of the ELPUB conference: with the major topic the "institutionalization" of the institutional repository, providing it with a definite role in this era of transition.

[1] Conference presentations, abstracts and full texts of the contributions are available at http://conferences.aepic.it/index.php/elpub/elpub2009/schedConf/presentations.

[2] Information about the Green road to Open Access is available at http://www.eprints.org/openaccess/.

[2] The PKP 2009 programme is available at http://pkp.sfu.ca/node/1663.