Open access journal publication: methods of implementation and copyright issues

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Open access journal publication is becoming an increasingly important model for the dissemination of research articles. In the UK this is currently being driven by government requirements for access to research funded by the research councils. Within the context of cartography, the Journal of Maps publishes maps using an open access methodology. This article describes the context for open access publishing and how this model has been adopted by the Journal of Maps. Particular focus is given to the licensing model adopted for open access distribution and the implications to the higher education community in the UK in the use of third party data within maps.

Keywords: *open, access, copyright, map, publication*

Introduction

Open access (OA) journals are rapidly becoming an important channel for publishing academic articles (Rightscom, 2005) and, although they represent a small proportion of the total number of journals published annually, it is significant that organisations such as British Medical Journals (BMJ) operate in this manner. This article explores the broad implementation of OA journals, their significance within the UK and, more specifically, the use of this model by the Journal of Maps (JoM). Much of the material elicited in the preparation of this article were derived from experiences during the first year of operation of the Journal of Maps and therefore the discussion should be understood within this context. The latter part of the article focus' on the issues of copyright associated with the publication of material in JoM. In particular the copyright licensing model that JoM uses for the material it publishes, as well as issues relating to the publication of third party data within the journal. It is this final point that cartographers are perhaps most familiar with and, given the importance of the Ordnance Survey (OS) in supplying geospatial data to the higher education (HE) community in the UK, much of the discussion revolves around their licensing models. The article concludes with a synopsis of the inclusion of third party copyright data and offers pointers for future developments.

Open Access

Open access can be defined as journal material that is *free at the point of consumption*. Although simple in concept (i.e. you "give" content away), it has a variety of implementation permutations that are designed to play upon this theme. There are some publication models that are hybrid, being part OA and part "paid-for". Rightscom (2005) summarised the main publishing models currently used for academic publications in the UK, highlighting the growing importance of OA, as well as listing the main methods that are currently implemented. They recommended a full investigation and trial of different journal funding models, including OA. In particular, they stated that a deeper understanding of OA costs and operations are needed. However, before describing the main OA implementations that are currently in use, it is important to understand the drivers that are pushing forward the uptake and implementation of OA journals.

Research Councils UK (2005) state that over 60% of university research in the UK is funded directly by the government. The dissemination of research results is traditionally performed through academic journals, after peer review has taken place. Indeed, editorial boards that traditionally make up the academic component of journals are normally non-stipendary positions, indirectly funded by the institution that they are employed at. This work is deemed to be "scholarly activity" and part of the duties of a university academic. The journal publishers, however, are interested in making a "reasonable profit" from the publication of a journal title, whilst the "consumers" of journals are typically research institutions (universities). The position that the funding body (in this instance the government) finds itself in, is *paying* to access the results (through a subscription based publishing model) of research it has already funded. This position is considered untenable by the government (HMSO, 2004) and it recommends greater access to research findings, possibly through the lodgement of results in institutional repositories. This position was subsequently backed by the Research Councils UK (RCUK, 2005) who now require

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the deposition of the results of all funded projects. Such moves have been partially mirrored in the USA where the National Institutes of Health (NIH) have announced a similar move, requiring the deposition of results from funded work in PubMedCentral (**http://www.pubmedcentral.nih.gov**).

The government initiatives outlined above will clearly be driving the agenda for the establishment of OA journals over the next few years. Other effects of the subscription-based journal publishing model are the restriction of access to current research for developing nations, as well as the increased financial burden placed upon libraries. However it is important to note that journals will never be **free** to publish (Morris and Powell, 2005). There will always be costs incurred in the review and publication of material (for example, Rowland (2002) estimates $200–400 per article), the concern is whether journals can be *appropriately* funded.

OA does **not** mean a "no cost" publishing model. To re-iterate, it is free at the point of consumption. *Users* (or consumers) of the material donot have to pay to access the material. Funding sources for OA journals are required from elsewhere. Two broad categories of funding can be identified:

Author Pays

The author pays model is the most common funding model for OA journals and has been adopted by large volume OA publishers such as BioMed Central (BioMed Central, 2004) and the Public Library of Science (**http://www.plos.org**). The financial result of this model is that it *shifts* the cost of article publication from the consumer to the grant body, which may be a research council or the host institution, however it produces barriers to those with little funding. To a certain extent, this can be mitigated against with free submission to low income groups.

Those that can afford

The "those that can afford model" has been implemented by the BMJ (Delamothe and Smith, 2003). The BMJ have operated an OA publication methodology, funded through other activities by the group, since 1994, however this not proved sustainable and it will charge "some users some of the time." The principal method will be to freely distribute material immediately an article is published (1 week), followed by a period (1 year) where charges will be levied against users from wealthy nations. Developing nations will not be charged. The importance of this methodology is that it charges those nations that can afford to subscribe, whilst still freely distributing material.

Journal of Maps

The Journal of Maps was established in 2003 against the backdrop of a perceived decline in the publication of research based maps (Smith, 2005). In particular the movement of print published journals towards a standardised A4 copy format (helping to reduce costs) means that large (over size) maps are not easily publishable. The inclusion of "inserts" (folded or stitched) into journals appears to have declined over the last century (Smith, 2005) and, with the high cost of colour printing, there is an apparent decline in research map publication. In addition to the physical difficulties in publishing a map, maps are rarely seen as a research goal in their own right. Rather, the focus of journal publication is upon the communication of research results. JoM was launched in 2004 with the specific remit of publishing research maps. Articles are short (~1,500 words), with the focus upon the map, enabling the support of the publication of research findings elsewhere. With the first issue published in 2005, JoM is aiming for a bi-annual publication cycle and will accept for submission "quality, bespoke, maps."

Given the constraints of map publication within "traditional" journals, the only economic publication route open to JoM was electronic. The decision was therefore taken to self-publish and JoM was subsequently formed as a charitable organisation. The publication and free distribution of material (and therefore OA) forms the central objective of the charity. It was realised that efficient publication would enable low overheads and therefore an author pays publication model was adopted with low cost of entry (currently £30 per submission). In order to efficiently manage the journal, a web site was developed that handles the user management, map submission, peer-review and publication of material. Typesetting is the only stage of publication handled outside of the website. It is important to note that the submission fee guarantees peer-review of an article/map; it does **not** guarantee publication.

Copyright

This section discusses copyright, within the context of JoM, and is based around two issues. The first relates to the copyright that JoM claims based upon the material it publishes. The second relates to third party material within maps that are published by JoM.

When submitting a research article to a journal, the author retains full copyright to that material up to the point where it is accepted for publication. Many journals, after acceptance, will require the submission of a copyright transfer form that assigns full, irrevocable, copyright for the material to the publisher. JoM allows the author to retain full copyright, whilst granting JoM an irrevocable license to publish the material. In essence the author and publisher *share* the copyright. This in itself provides equity, however JoM allows believes that the material should be freely distributable. To that end, it has adopted the Creative Commons licensing model (**http://www.creativecommons.org**) that allows detailed specification in the use of published material, whilst still retaining copyright (Creative Commons, 2005). Specifically, our license allows the freedom to copy, distribute and display all published material for non-

commercial purposes, whilst requiring full attribution in its use and non-alteration.

Third Party Copyright

The only restriction to the publication of material outlined above includes the incorporation of third party data. Within the context of JoM, this principally means the incorporation of data from other organisations within maps. The copyright restrictions are dependent upon the data supplier and will vary from organisation to organisation. For example, the US federal government has a mandate to make available data that has been acquired through the use of public funding, at the cost of distribution. This includes data sets such as the Shuttle Radar Topography Mission digital elevation models and Landsat ETM satellite imagery. These products can then be freely incorporated in to other materials. Within the UK the predominant supplier of geospatial data is the OS and, within HE institutions this is supplied (and licensed) through Digimap at EDINA (**http://www.edina.ac.uk/digimap**). Detailed licensing restrictions cover the use and reproduction of data in print and electronically for local and international distribution (**http://www.edina.ac.uk/digimap/terms.shtml**). In particular, the license is flexible (and generous) with respect to use of data in posters, presentations, teaching and internal use. However severe restrictions are imposed upon electronic, internet facing, publications; these are based upon the maximum (print) size of an individual image and the maximum ground area it represents. This varies with product, but generally means that any map **larger** than A5 (200 cm^2) is not publishable. It is important to understand the implications of this restriction. As most peer-reviewed journals are now distributed over the internet, either solely electronically or in tandem with a traditional print process, it means that **any OS data is *effectively* unpublishable in any journal**. However the implications of this policy are more far reaching in that the license also covers all data *derived* from the original OS data source. Smith (2005) has outlined an example where JoM could not publish a map that had been accepted for publication due to these restrictions; as a result JoM does not accept submissions of maps containing OS data.

The Future of Map Publication

It is not the intention of this article to suggest copyright legislation is inappropriate for geospatial data. In fact the OS probably provide one of the most advanced mapping programmes (in terms of survey technology, digital products and temporal/spatial resolution) in the world today. It is clear that such a service should be paid for and, whether it is appropriate or not, the OS has to operate within the freedoms and restrictions imposed as a result its' status as a Trading Fund (Ordnance Survey, 2005). It is particularly important for the OS to target licensing models at specific user groups and, within this remit, perfectly appropriate for the OS to charge for the commercial use of its' data. However there is currently no license that is able to adequately support the non-profit use, and publication, of its' data. Although this includes academic research, there are a large number of other non-profit activities which also form part of this user group. Creative Commons offers a flexible licensing model that may be appropriate. The spirit of this license has been endorsed and accepted by the Creative Archive Group (**http://www.creativearchive.org.uk**) for non-profit use of their material. It would therefore seem appropriate for the OS to consider such licensing.

A secondary driver in this debate is Research Councils UK requirement for the deposition of research results. The Natural Environment Research Council (NERC) already require the deposition of data from grant holders. Clearly geospatial repositories, derived datasets and copyright are key issues. Indeed the JISC Repositories Programme (JISC, 2005a) is providing a framework for data lodgement from all disciplines, whilst the GRADE Project (JISC, 2005b) is investigating issues relating to geospatial data. The first part of the GRADE Project has involved the collation of use-case examples in order to understand the interaction of stakeholders in the use of geospatial data (Smith, 2005).

The above discussion outlines what are fundamental issues defining the use and re-use of research outputs and geospatial data. It should be noted that the OS are not the only provider of geospatial data in the UK. This is a large and active market and suppliers have a variety of differing licensing models. For example, Intermap, with the sale of the NEXTMap Britain product, **do not** claim intellectual property rights for thematically derived data (Intermap, 2005). However the OS are the pre-eminent supplier of geospatial data in the UK and have a special relationship with UK universities. It is therefore imperative that they take the lead in this debate.

Summary

Academic publication is one of the key research activities that can be used to define the quality of research. As a result there is a strong culture of publishing research results in peer-reviewed journals. Grant bodies are increasingly unhappy with a system where they fund research and subsequently are required to purchase published material in order to access results they have sponsored. A government level drive towards free access to research results has increased the interest in open access journals and they are now seen as a viable and sustainable publication model. Within the cartographic domain, the Journal of Maps publishes bespoke, quality, maps using an open access model, sharing copyright with the author and licensing material under a Creative Commons License.

Map makers need to particularly careful when preparing maps that, where third party data are incorporated, it is done so within any licensing restrictions. This article has drawn particular attention to OS data licensed through EDINA to the HE community in the UK. The OS operates a particularly restrictive licensing model

with respect to (electronic) journal publication, such that any maps based upon OS data are virtually unpublishable under this license. This policy is particularly restrictive in that it extends to data *derived* from an OS data set. It is suggested that a license specifically targeted at non-commercial uses of OS data would be beneficial.

References

Biomed Central 2004. What is Biomed Central? [online]. Available from: http://www.biomedcentral.com/info/ [Accessed: 25th February 2004].

Creative Commons 2005. Learn More about Creative Commons [online]. Available from: http://creativecommons.org/learnmore [Accessed: 5th July 2005].

Delamothe, T. and Smith, R. 2003. Editorial. British Medical Journal, 327 (7409), 241–242.

HMSO 2004. Scientific Publications: Free for all? Science and Technology Committee, tenth report of Session 2003-04. Stationery Office, London.

Intermap 2005. Product Handbook [online]. Available from: http://www.intermap.com/images/handbook/productha ndbook.pdf [Accessed: 21st October 2005].

JISC 2005a. Scoping a Geospatial Repository for Academic Deposit and Extraction [online]. Available from: http://www.jisc.ac.uk/index.cfm?name=project_grade [Accessed: 5th July 2005].

JISC 2005b. Digital Repositories Programme [online]. Available from: http://www.jisc.ac.uk/index.cfm?name=programme_di gital_repositories [Accessed: 5th July 2005].

Morris, S. and Powell, A. 2005. Dissemination of and access to UK research outputs: response from the Association of Learned and Professional Society Publishers (ALPSP) to the RCUK position paper [online]. Available from: http://www.alpsp.org/RCUKResponse.pdf [Accessed: 5th July 2005].

Ordnance Survey (2005) Trading on geographic intelligence: How Ordnance Survey benefits the nation [online]. Available from: http://www.ordnancesurvey.co.uk/oswebsite/media/feat ures/tradingfund.html [Accessed 8th March 2005].

Research Councils UK 2005. RCUK Position Statement on Access to Research Outputs. Research Councils UK Report.

Rightscom 2005. Business models for journal content. Final report to JISC.

Rowland, F. (002. The peer-review process. Learned Publishing, 15, 247–258.

Smith, M. J. 2005. The Journal of Maps: an electronic journal for the presentation and dissemination of map based data. Journal of Maps, v2005, 1–6.

Smith, M. J. 2005. Provision of end-use cases of geospatial data as part of the GRADE Project in scoping digital repositories. Final report to the GRADE Project, pp79.