THE DEVELOPMENT OF DIRECTORY OF OPEN ACCESS JOURNALS
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Introduction

Directory of Open Access Journals (abbreviated DOAJ) is a service that collects and lists scholarly OA journals from all disciplines and in all languages. At the time of writing the directory contains more than 6200 scholarly Open Access journals. Nearly half of these journals are searchable on article-level and the directory consists of more than 500 000 scholarly articles accessible without cost barriers to readers.

Anna-Lena Johansson, the DOAJ coordinator and Ingela Wahlgren, previous co-worker in the DOAJ team 2008 published a description of the project and service's development. This article will however focus on the achievements during the period 2008 to 2011. It will also before the project turns eight years discuss its future.

History of the project

The DOAJ service was initiated at the First Nordic Conference on Scholarly Communication (http://www.lub.lu.se/ncsc2002) due to the idea that the creation of a comprehensible service that listed quality controlled OA journals would be beneficial for the whole scholarly community. The project was carried out the oncoming year and in May 2003 the directory consisted of a list of 300 journals applying immediate OA to their full texts (Johansson & Wahlgren 2008, s. 1). A year later, in June 2004 the project went into the second phase and a complement to the list was realized; a searchable article index. It now became possible for publishers to upload metadata on article-level in the directory, which was naturally followed by a possibility for readers to search for full texts directly through the DOAJ service. By making the uploaded metadata an OAI compliant libraries and aggregators using OAI protocol could from 2004 on harvest the metadata and add both journal titles and article data into their own services (http://www.doaj.org/doaj?func=loadTempl&templ=031007).

In 2006 the directory consisted of more than 2000 titles and the service was expanded with a special interface for authors consisting of functions designed to help authors finding journals to publish in. A field with information about fees was added to the record due to that charging publication fees had become a more and more common financial model for OA journals. A link to the site on the journal's home page where this information and/or other submission related information are stated was also added – both visible in this target group designed interface (http://www.doaj.org/doaj?func=forAuthors).

Further on in 2007 a membership program was launched to help the service to survive the transformation from project into an established service. Libraries, universities, research centers, aggregators, library consortia's and associations as well as individuals were and are through the membership program able to support the work to maintain and develop the DOAJ service. At the moment we have got more than a hundred members from all over the world: http://www.doaj.org/doaj?func=loadTempl&templ=members.

In April 2008 the directory consisted of more than 3000 titles and the organization SPARC Europe and DOAJ mutually decided to establish a so called "seal" to high-light what we believe are the best practice for OA journals. Along with the increased number of both DOAJ listed and existing OA journals a confusion regarding the rights of use and reuse of their published material existed, why SPARC Europe and DOAJ have chosen to support the use of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/3.0/). The license lets others "distribute, remix, tweak, and build upon your work, even commercially, as long as they credit you for the original creation". The license is "recommended for maximum dissemination and use of licensed materials" (http://creativecommons.org/licenses/). This license has been chosen since it is the most unrestricted of the different alterations of the Creative Commons licenses and since it also is the license that best corresponds with the BOAI definition of OA: "By 'open access' […], we mean […] free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers

other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited"

(http://www.earlham.edu/~peters/fos/boaifaq.htm#openaccess). Even though DOAJ allows publishers to use any of the Creative Commons licenses the "pure" CC-BY is highly recommended and to receive the SPARC Europe seal a journal must not only use this clear and comprehensible license, but also work to spread their published material to users through uploading articles from the start year in DOAJ and continuously as the publication runs.

Achievements between 2008 and 2011

At the same time as the DOAJ service has grown to become both an authoritative source for OA journals and one of the most important projects promoting "gold" OA publishing the interest of DOAJ itself as a research project has increased. Since one of the main interests to the public seemed to be the country statistics for DOAJ listed journals a table called "DOAJ by country" was implemented on the web site in July 2008: http://www.doaj.org/doaj?func=byCountry. The table allows users to follow the development of added titles on a country basis.

This table makes it possible to measure and compare the states of DOAJ per continent throughout different years.
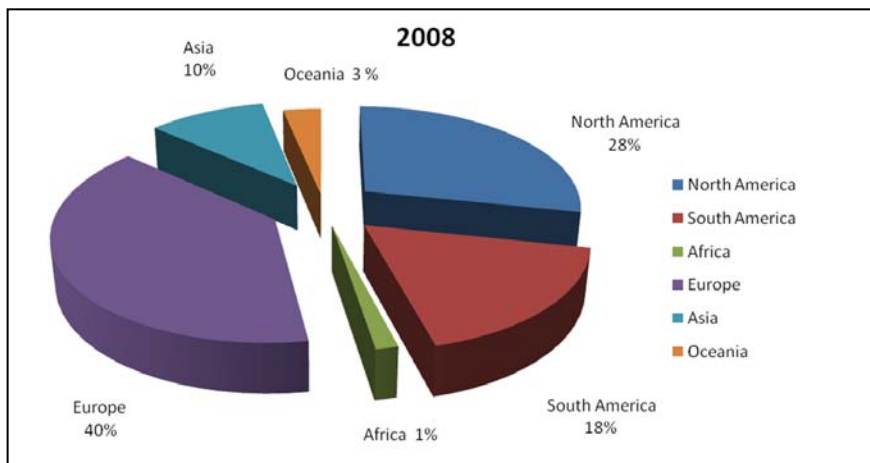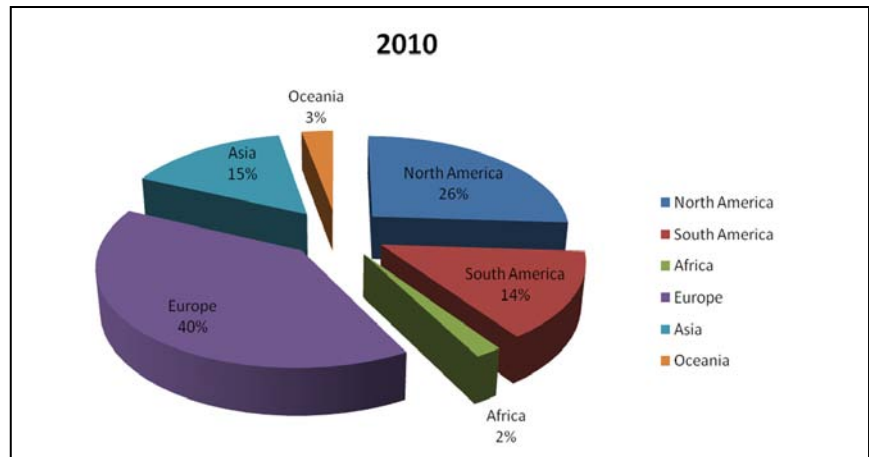

Figure 2. DOAJ per continent in 2010

As can be viewed in these diagrams Europe is still on top when it comes to DOAJ listed journals (even though the United States is the country that without a doubt tops the journals by country list), while the development of OA in Oceania and Africa is moving more slowly.

Concerning Africa it is however important to point out that the electronic journals publishing has in general just begun (Ezema 2010).

Interesting is however that the number of DOAJ listed titles from Asia has grown from ten to fifteen percent in two years, while the South American titles has decreased from eighteen to fourteen percent (even though Brazil still is the second country on the journals by country list). Are there any particular reasons for these changes that can be ascertained?

As Alma Swan points out the help from the SciELO umbrella has helped the relatively fast development of Open Access in South America (Swan 2008, s. 162). The existence of an established infrastructure for OA journals as SciELO, but also the initiative Redalyc did certainly affect the earlier statistics and explains the relatively high percentage of South American titles in DOAJ. The shift in percentage that has lead to Asia passing South America and now is the third biggest continent in DOAJ, can however be explained by the fact that the activities for promoting OA in Asia has caught up. Through activities ran by the International Network for Availability of Scientific Publications (INASP) a number of Asian countries as Bangladesh, Nepal, Sri Lanka, Vietnam and the Philippines have gained a possibility to

Figure 1. DOAJ per continent in 2008

publish their journals in the Journals OnLine project (JOL) where INASP gathers OA journals from these countries in different lists (http://www.inasp.info/file/4fd988568504d4bcfa2f4cd855a07d45/jols.html).

The statistical changes can thereby show that establishing an infrastructure for OA publishing in different countries or regions is of importance for both the growth of titles in DOAJ and the growth of OA journals in general. These initiatives are of great importance in the developing world where low global readership is a shared problem and can't be enough applauded (Swan 2008, s. 161).

If jumping back to the DOAJ achievements during the last years DOAJ and the e-depot of the National Library of the Netherlands in April 2009 started a cooperation to secure long-term preservation of OA articles. Along with the digital revolution the question of digital archiving becomes a hot potato for e-journals in general. For OA publishers that tend to be smaller, have tighter budgets and less technical resources than established publishers that are using the traditional subscription model the question about securing access to the published content is of special importance. Through cooperating with the e-depot, which ensures long-term access to digital objects which would otherwise be threatened by rapidly evolving software and hardware platforms as well as media decay, the DOAJ service takes the responsibility to save the published material for future generations (http://www.doaj.org/doaj?func=loadTempl&templ=090401). The criteria to qualify for this process are that a journal has uploaded metadata on article-level in the directory and that the uploaded full texts are in PDF format.

At the moment there are about 200 journals in DOAJ that are archived, but there are more to come.

In July 2009 it was announced that DOAJ had received the SPARC Europe Award. The award which was initiated in 2006, aims to high-light the work of an individual or group within Europe that has made significant advances in our understanding of the issues surrounding scholarly communications and/or in developing practical means to address problems within the current systems. In giving the Award to DOAJ the judging panel noted "their ground-breaking promotion of open access journals, their work on setting copyright, metadata, and preservation standards, and their development of a sustainable model of support". They also pointed out that since its launch in 2003 the DOAJ has become a vital part of the OA infrastructure (http://www.doaj.org/doaj?func=loadTempl&templ=090702).

During 2010 the work with spreading knowledge about good practice to publishers has been intensified. Lund University Libraries Head Office has together with Co-Action Publishing written an Online Guide to Open Access Publishing (http://www.doaj.org/bpguide/) which can be found in the DOAJ link collection (http://www.doaj.org/doaj?func=loadTempl&templ=links). A more practical oriented guide was launched in the FAQ on the DOAJ web site to help editors and publishers to gain knowledge about what information that can be expected when presenting a journal's editorial board, how they can ease the work for potential authors through detailed style-guides and how to avoid contradictions between their OA policy and copyright: http://www.doaj.org/doaj?func=loadTempl&templ=faq#guidelines.

The importance of DOAJ can also be viewed from the perspective that other services are adjusting their products to make them fit DOAJ. A good and important example of this is that the Public Knowledge Project in its Open Source solution Open Journal Systems (http://pkp.sfu.ca/?q=ojs) – which is highly used by OA publishers – in the end of 2010 integrated a function to ease the transfer of metadata to DOAJ. Through a function called the DOAJ export plugin publishers can export their uploaded files automatically and thereby the work with uploading metadata is solved and secured for many OA publishers: http://pkp.sfu.ca/ojs/docs/userguide/2.3.3/journalManagementImportExport.html

Future and further development

When the number of published OA journals increases dramatically the requirements on DOAJ to select only the high quality OA titles is increasing. The selection of journals for the service is at the moment based on criteria that is established to assure serious aims from the publishers and the use of recognized academic practices as the peer-reviewing system prior to publication (for more information please refer to: http://www.doaj.org/doaj?func=loadTempl&templ=about#criteria). As Johansson & Wahlgren pointed out already in 2008 the evaluation process has also become more and more strict as the staff have learned from previous experiences (Johansson & Wahlgren 2008, s. 2)

It is though often suggested that the fast growth of the service emerges a need for both readers and potential authors to be able to further judge the credibility and quality of the listed journals. This raises the question of including values from already established measurement tools into DOAJ, for example their

impact factor. Such a development of the directory is considered as a way of guiding users to the most prestigious of the listed OA journals.

However there are also a number of arguments against such a development of the service.

First of all; at the point when a new journal is added to the directory it's often too "young" to have had the possibility to receive an impact factor. To be indexed in Journal Citation Reports (JCR) can take several years for a new title and to even be calculated with any meaningful result, the journal must have published a fair number of articles throughout a couple of years. We must also be aware that this measurement tool is discipline dependent and that it isn't a very successful tool when it comes to for example the humanities.

We shall finally remember that DOAJ is a resource that aims to spread to knowledge about OA journals. The core of the idea is providing anyone interested in contemporary research with the possibility to access such for free and with as few restrictions as possible. Thomson Reuters, that provides the scholarly community with these impact values, is however a commercial company and JCR is a commercial product. To be able to use the values generated from the calculations measured in the product would require closing a deal with the company in order to spread these values, which can be considered as a conflict between the aims and the scope of the DOAJ service itself.

An alternative way of measuring the impact of a journal or an article is also often suggested to be solved by downloading statistics. This might not be considered as ethically problematic as an implementation of JCR values, but has other complications. As previously mentioned the DOAJ metadata is an OAI compliant and the harvesting activities on our servers are steadily growing, so when a journal gets listed in DOAJ it of this reason has the possibility to get listed in a number of library catalogues, aggregator services and search engines all over the world and the control over downloading is lost. Measuring of statistics from DOAJ solely would therefore be misleading, since the spread of a journal title or a single article could be larger and further on nothing indicates that the journals or articles most accessed through the web site is a statistic average.

These factors make the currently most common way of measuring journals and articles usage in actual fact complicated and in some aspects not meaningful to implement, why the DOAJ service will work to find alternative ways of including values that indicate the credibility, impact and importance of certain OA journals.

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