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The indexing of scholarly open access business journals

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Introduction

There is a small, but rapidly growing, number of scholarly, open access (OA) business journals that are now available on the internet. In May 2004, the Directory of Open Access Journals (DOAJ) listed 8 business titles. By May 2006, the number had jumped to 26 and as of May 2009, the DOAJ lists 83 business and management titles. An additional 84 economics titles are also available. Looking at other databases: in May, 2009, Ulrich's Periodical Directory includes 113 scholarly OA business and economics journals, 59 of which are refereed. Open J-Gate has 536 OA titles under "Business, economy, and management", of which 191 are peer-reviewed.

In order for the increasing number of open access business journals to achieve credibility and flourish in the academic and professional environments it is not enough for them to simply be published and freely available on the Internet. Researchers need a means to be able to systematically search across the broad spectrum of business journals, and retrieve the articles in their particular areas of research and study.

This task has traditionally been accomplished by commercial journal indexing databases, e.g. ABI/Inform or Business Source Complete. If a journal is indexed, it tends to mean increased awareness and usage of the title. This, in turn, leads to potentially higher citation levels, impact, and prestige for the journal title, which then attracts more and better research. If open access journals are not included in these commercial indexing databases, researchers must make a special effort to find them, which discourages use. Therefore, the integration with subscription-based journals into standard library databases is important and desirable. This was recognized in a 2005 survey of OA publishers (Kaufman-Wills Group, LLC, 2005, p.24).

Recent years have also seen the emergence of an increasing number of open access indexing services and OA journal repositories with article level indexing, e.g. DOAJ, Open J-Gate, Google Scholar. It is vital that open access journals be indexed in open access databases because in North America they are often the only databases available to business professionals working alone or for smaller organizations, and even for many policy makers in government. Furthermore, in developing countries, OA journals and OA indexes may be all that universities can afford (Ghosh & Das, 2007, p. 230). In 2003, for example, it was estimated that 90% of Indian universities were running their libraries without serial indexes (Willinsky, 2006, p. 174). OA indexing opens up a wide range of research to a much broader audience and facilitates

equality of access to scholarly knowledge. Furthermore, because of the global scope of the OA movement, OA journal repositories and indexing services generally provide researchers with a more diverse, global perspective than previously afforded by the established North American and European commercial business information providers.

Purpose and Scope of Study

The purpose of this study is to focus on the business and management field and assess the extent to which scholarly open access journals in this discipline are currently being indexed by both commercial and non-commercial indexing services. Editorial policy factors that may affect indexing uptake, e.g. country of publication, language of publication, number of years published, are discussed, if they are relevant. This study is limited to open access journals and does not look at individual articles that may be "open access" because of self-archiving or deposit in repositories, in conjunction with commercial publishing.

Literature Review

There have not been many studies that focus specifically on the indexing of open access journals. One of the earliest was a 2004 paper by Nowick, Jenda, and Azzam that looked at the indexing of OA journals in agriculture. They found that the level of indexing varied considerably among commercial academic indexing services, from a high of 50% of the sample in the case of CAB Direct to a low of 5% in Agricola. They also rated 3 internet search engines, Google, Yahoo, and HotBot. Searching by journal title and keywords from randomly selected articles, they found the highest level of article level indexing was in Google at 83%. Google Scholar was not functional at the time of their study.

Since the introduction of Google Scholar in 2004, there have been a plethora of papers examining almost every aspect of its content, functionality and search capabilities. Much of the early research was quite critical (Jacso, 2005; Tennant, 2005); however, with the cooperation of many academic publishers and database providers, Google Scholar has continued to develop. Newer research indicates that although many of the criticisms of Google Scholar's search engine and interface are still valid, the content has been greatly enhanced (Jacso, 2008). In fact, most studies now conclude that Google Scholar is a very useful service for locating scholarly materials and "deserves to be brought within the academic librarian's repertoire of effective search tools, not as a one-stop-shop but as an essential alternative to existing methods" (White, 2006, p. 23). A 2009 paper by Howland, Wright, Boughan & Roberts even found that "Google Scholar is, on average, 17.6% more scholarly than materials found only in library databases" (p. 227).

In 2006, Walters evaluated the content of Google Scholar and 7 other commercial databases for the multi-disciplinary topic "later-life migration". He found that "Google Scholar indexes the greatest number of core articles (93%) and provides the most uniform publisher and date coverage" (p. 1121). In terms of methodology, Walters used individual articles to make his comparisons and did not distinguish among the sources of open access.

Another 2006 paper by Neuhaus, Neuhaus, Asher, and Wrede compared the contents of commercial databases with that of Google Scholar. Of a random sample of 50 articles from

ABI/Inform, 52% were found in Google Scholar. Across all commercial databases, they found that 95% of open access articles and 57% of non-open access articles were found in Google Scholar. Although they did not focus on open access journals, per se, they concluded that Google Scholar's "coverage of open access journals, freely accessible databases, and single publisher databases is very strong" (p. 138).

By contrast, another study by Mayr and Walter (2007) found that "only 67.9% of the freely accessible, open access journals can be definitively identified" (p. 825) in Google Scholar and that with the DOAJ titles only 22.11% were linking back to the full-text of the articles (p. 826).

Norris, in his Ph.D. thesis (2008) concluded that "Google Scholar far outstripped the other search tools" (p. 238), e.g. OpenDOAR or OAIster, for those wanting to find open access articles in ecology, economics, and sociology. He looked at OA articles that were self-archived or deposited in institutional repositories. He excluded articles published in OA journals.

Unlike Google Scholar, many other metadata harvesters and journal indexing services have received very little attention in the literature. Open J-Gate, for example, was launched in February 2006 by Informatics India and uses OAI-PMH standards to harvest metadata from nearly 6,000 open access journals. It has only received very brief, but generally positive, reviews and assessments (Jasco, 2007). The same is true for DOAJ's article-level indexing service.

To reiterate, the following study will assess the extent to which scholarly open access journals in business and management are currently being indexed and will look to see if OA journals in this discipline follow or diverge from the patterns and findings of the previous research outlined above.

Journal Title Sample

For this study, the sample of scholarly open access journals selected are those 83 business and management journals listed in DOAJ in May, 2009. The DOAJ is a reputable, well established database that is open to all journal publishers that meet their basic selection criteria and quality standards. As might be expected, the majority of these titles are published by academic institutions and professional associations. 59 of the 83 journals have a peer-review process in place. The journals are published in 26 different countries, with the United States, Brazil, Spain, Germany, Romania, and the United Kingdom being the most common countries of origin. Despite this diversity, the majority of titles, 52 in total, are published entirely or partially in the English language. The Spanish and Portuguese languages are also well represented. Most of the journals still maintain the traditional print volume/issue organization with a given publication frequency. The most popular frequencies are semi-annual and quarterly. 29 of the titles began publishing from 2004-2008; of these, 69% appear to have been born as open source, electronic journals. Of the 19 titles with publication start dates in the previous 5 years (1999-2003), only 47% seem to have begun life as open source, electronic journals. Many began as print subscription publications and later became OA titles when they went online. Often, older print volumes were also digitized. These details were gathered partly from DOAJ and the journals' websites and partly from other sources such as Ulrich's Periodicals Directory, OCLC's WorldCat, and the WayBack Machine Internet Archive.

Methodology

The DOAJ sample of 83 open access business titles was checked against the journals indexed by:

1. Mainstream, commercial business and social science databases: Ebsco's Business Source Complete, ProQuest ABI/Inform, Wilson Business Periodicals Index, Scopus, and the International Bibliography of the Social Sciences (IBSS). IBSS is produced by the London School of Economics and Political Science and is free of charge to most U.K. academic institutions. However, for others, it is available commercially through Ebsco, ProQuest and Ovid. Journals were looked up either directly through the databases or checked against online lists. All lists were dated May or June 2009, with the exception of the IBSS list which was from January 2009.

2. Smaller commercial niche databases: ProQuest Canadian Business and Current Affairs (CBCA), Ebsco's Fuente Academica, and Gale's Informe! Online journal lists from 2009 were used.

3. Open access indexing services: Google Scholar,Open J-Gate, and DOAJ. For Open J-Gate and DOAJ, the journal search functions within the databases were used. In the case of Google Scholar, there is no list of journal titles indexed. Google Scholar relies on its Googlebot web crawler and proprietory algorithms to identify and harvest scholarly articles. The publication search, which is very incomplete, and a keyword ISSN approach were used. The comprehensiveness of the indexing was assessed based on the journal's publishing record, e.g. frequency and volume of publishing, from its website. The currency of indexing for all services was checked only in so far as determining that the indexing for each journal title was updated within the past 12 months.

Results

1. With the larger, mainstream commercial databases, Ebsco's Business Source Complete is the only one that indexes a significant number of the DOAJ sample. It indexes 27 of the journals (33%), most of which have been added in the last few years. There is usually no retrospective indexing – either to the publication start date or to the beginning of the free online coverage. In terms of why these particular OA titles were selected, there is no discernible pattern. They originate from 14 different countries; most are published entirely or partially in English; however, 3 are in Portuguese and 2 are in Spanish. Some titles started publication recently, some have been around longer; 63% are peer-reviewed. Although asked, Ebsco did not provide a clear editorial policy with detailed journal selection criteria.

ABI/Inform and IBSS index 11% of the DOAJ open access business titles, Scopus 10%, and Wilson Business Periodicals Index only 2%. IBSS has quite a detailed editorial policy online (http://www.lse.ac.uk/collections/IBSS/about/editorial.htm). In addition, to indexing the core U.K. and U.S. social science titles, it strives to provide an interdisciplinary and international perspective. It "favourably considers open access journals, subject to academic quality and subject relevance". Business and management have not traditionally been a main IBSS focus, so this may partially explain the low number of OA titles selected. Journals must also be scholarly

to be included, but there are not stringent language requirements. Scopus also provides detailed information on its journal selection criteria (http://info.scopus.com/detail/what) and has a Content coverage guide (http://info.scopus.com/docs/content_coverage.pdf). Scopus' goal is to offer the "broadest, most integrated coverage" of science and social science scholarly literature with a "comprehensive geographical spread" of content and publishers. Unlike IBSS, their inclusion criteria require a journal to have an English-language title and English-language abstracts, although the text of the articles can be in any language. This, in itself, points to why 35-40% of the sample OA titles would not be accepted by Scopus. Although an official editorial policy was not available, ABI/Inform seems to include only English language OA titles, all of which have been publishing for a number of years. Apart from the language restrictions, it is not entirely clear why more of the open access titles are not included in these indexing services.

2. With the smaller niche databases, it is not surprising that they would not index large numbers of the DOAJ business titles. However, ProQuest's Canadian Business and Current Affairs (CBCA) might be expected to include Canadian open access business journals. In the DOAJ sample, there are 3 English language, peer-reviewed journals published in Canada. All have been publishing for over 10 years. However, none of them is indexed in CBCA. Ebsco's Fuente Academica and Gale's Informe! both cover scholarly journals from Latin America, Spain, and Portugal. Most articles are in Spanish or Portuguese, but some English language articles are also indexed. Of the 31 journals in the DOAJ sample that meet these databases' language/country of publication requirements for inclusion, only 8 titles or 26% (with some overlap) are indexed in each. From the available information, e.g. years of publication, refereeing process, etc. there is no discernible pattern in terms of which journals are included.

3. The Directory of Open Access Journals (DOAJ) has article level indexing of 36 of the 83 journals listed under Business and Management. The DOAJ coverage does not always go back to the start of the title's available online coverage. The publisher of any OA journal accepted by DOAJ is encouraged to submit article level metadata. The metadata must be OAI compliant and in xml file format. Given that inclusion in the article level database is basically the publisher's decision, it is hard to tell why some do not participate. A few possible reasons, might be time, technical expertise, lack of awareness of the benefits, or the perception that the journal is already well-served by other indexing providers.

Google Scholar is the best-known, free database for finding journal articles. It is also the most comprehensive source for retrieving articles from open source journals. Of the DOAJ sample, only 6% were not included, an estimated 16% were indexed selectively, and an estimated 78% were indexed comprehensively.

Open J-Gate (Informatics India) is the largest directory of open access journal titles and has extensive article-level indexing. It currently indexes 51 (61%) of the sample business OA titles from DOAJ. One reason that the number is not higher is that Open J-Gate is mostly limited to English language journals. It does now index a few non-English language journals that have English language abstracts and article titles.

Discussion and Conclusions

Of the commercial indexing services, Ebsco's Business Source Complete covers by far the largest number of open access journals. For business researchers working in an academic environment, Business Source Complete, with its more sophisticated searching and browsing capabilities and deeper historical coverage, is probably the best one-stop option for retrieving scholarly materials from both the subscription-based and OA literature.

However, from a simple quantity perspective, OA business journals are being most extensively indexed by OA indexing services, in particular, Google Scholar and Open J-Gate.

The findings for Google Scholar are consistent with previous papers that have determined that it is the most comprehensive discovery tool for open access materials. In addition, universities and colleges have the option of using linking software to help integrate many of their subscription databases with Google Scholar. This functionality, combined with its full-text indexing and broad-based coverage of research in many fields, from many countries, and from many origins, both commercial and open access, make it an excellent supplementary option for finding a wide variety of scholarly business information. For business researchers working in organizations without access to commercial indexing databases, Google Scholar is likely the best starting point for research. However, unless they have a healthy document delivery budget, they may find Google Scholar rather frustrating because quite a large number of the journal article citations are not from OA journals or other free online resources. Also, the search engine and search interface are major points of frustration for more sophisticated users.

Although the coverage of the open access journal sample was lower in Open J-Gate than in Google Scholar, it is still an excellent option for finding OA English language scholarly business information. In contrast to Google Scholar, it focuses exclusively on OA journals and has a much more transparent database structure, superior search capabilities, as well as direct links to the full-text.

In order to increase the visibility and reputation of open access journals, OA publishers can use OAI-PMH so that OA indexing services such as Open J-Gate and DOAJ can include their articles. They can also work with Google Scholar to ensure that its web crawler can identify and harvest their articles. On the commercial indexing front, they need to more actively promote their journal titles to database providers and their journal selection committees. For non-English language journals, publishers might want to consider having parallel English language titles and English language abstracts.

The number of scholarly open access journals in business and other disciplines continues to increase quite rapidly. The commercial and OA indexing options are also in a constant state of change and development. Although the long-term role of open access journals in the research and scholarly publishing cycle is still unclear, both OA journals and OA indexing are already opening up a wide range of research to a much broader audience and helping to facilitate equality of access to scholarly knowledge.

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