Putting African Scholarly Journals Online: The AJOL Perspective

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Abstract

“Academic publications from the developed global North do not adequately reflect the research needs and priorities of African countries and are not always relevant or appropriate for higher education in Africa. At the same time as online academic resources from overseas are made available in Africa (through initiatives like HINARI, AGORA and OARE), there needs to be corresponding online worldwide access to information from Africa. Africa needs access to its own scholarly publications, and must also contribute to the international online academic community. Primarily due to difficulties accessing them in the past, African-published research papers have been under-utilised, under-valued and under-cited in the international and African research arenas. Many hundreds of worthy peer-reviewed scholarly journals publishing from Africa lack the means to disseminate their research widely, not least as a result of resource limitations and the digital divide. AJOL is a non-profit organisation whose mandate is to promote and increase online access to African research output and to support African scholarly publishing. This is done primarily via the provision of a central and globally available online platform, using amended open-source software, through which African journals and full-text articles can be accessed. AJOL hosts over 300 journals covering a wide range of academic disciplines and published from 24 African countries. AJOL allows for free access to more than 30 000 article abstracts. AJOL supports both open access and subscription-based journals and is growing continuously. The AJOL service is used by over 50,000 researchers each month from all over the world (a quarter of these are African). This paper details the achievements, challenges, current model and lessons learned by AJOL in a decade of striving to serve the African research, academic, library and scholarly publishing communities.”
**Introduction**

is telling that in trying to determine how many journals are published from African countries, an organisation devoted specifically to increasing visibility of and access to African-published research – African Journals OnLine (AJOL) – has not managed to find a convincing total in the literature. Estimates vary from a few hundred to a few thousand African-published journals in existence. This uncertainty is indicative of the struggle journals face in Africa; their difficulties in sustainably, regularly, visibly and widely publishing the research output of the continent. The African systems of research and knowledge generation are themselves subject to major challenges on the macro level, which further impacts on journals successfully disseminating the outputs of African research – ‘African academic systems produce little research, and there are only a few Africa-based journals’ (Altbach, 2003: 144).

Africa is often seen as a single entity but it is made up of 54 countries and many hundreds of language and cultural groups. While acknowledging the substantial diversity within Africa, it is still necessary to make some valid generalizations about the continent. Despite the wide range of capacity and resources within and between African countries, a legitimate generalization is that strengthening research and research-publishing are crucial priorities for improving higher education in Africa (Teferra and Altbach, 2004). Since knowledge, access to information and higher education have recently (Bloom et al, 2005) been shown to be critical in economic development and significant, long-term poverty alleviation, it is imperative for the continent that contains two thirds of the 50 Least Developed Countries in the world to collectively overcome Africa’s ‘multiple peripherality’ (Altbach, 2003: 143) to the international knowledge system.

‘Digital libraries are a critical part of Africa’s development, not a luxury’ (Mbambo, 2003: 191). Digital libraries will also play an important role in the distance education using the internet, distance education being Africa’s great chance to meet the demand for quality tertiary education (Saint, 2003: 108). Online digital library organisations like AJOL are assisting with making use of the internet in terms of increasing the international visibility of African-published, peer-reviewed journals, but no single organisation can achieve what is necessary in isolation and without support from and collaboration with similar initiatives, African policy-makers and Governments, universities, research organisations, donors and the people actually directly involved in the production of the journals themselves. In analysing how to improve the number and visibility of African journals on the internet, it is important to recognize the complexity and multiplicity of factors that need to be impacted for Africa to move closer to the centre of the international knowledge system. A selection of what AJOL considers the most significant macro and micro level challenges to getting African journals online are covered in this paper, along with some suggested approaches to improving these based on AJOL’s learning and experience from a decade of work in the field.
Background to African Journals Online (AJOL)

African Journals OnLine (AJOL) was initiated in May 1998 as a pilot project managed by the International Network for the Availability of Scientific Publications (INASP). At that time, the aim was to promote the awareness and use of African published journals in the sciences by providing access to tables of contents (TOCs) on the Internet. The project was evaluated at the end of 1999, and it was recommended that AJOL be continued and expanded to include more journals in more subject areas, as well as abstracts of articles.

At its re-launch as an ongoing INASP programme in August 2000, AJOL featured 50 English-language African-published journals in agricultural sciences, science and technology, health and social sciences. It also provided abstracts where available, and introduced a key word search service and a document delivery service for all titles. In March 2004, AJOL adopted a more sophisticated database system to increase the functionality of the site, and to ensure that AJOL is compatible with other research services offered on the web. AJOL uses amended open source software called Open Journal Systems (OJS), compiled by the Public Knowledge Project (PKP).

In 2005, AJOL moved to African management and is now a not-for-profit company in its own right, based in South Africa. Three years later, in 2008, AJOL has grown to host over 330 African-published, peer-reviewed journals from 25 countries. The AJOL website is visited each month by over 50,000 researchers from all over the world. In its founding document as a South African Section 21 Not for Profit Company, AJOL exists in order to ‘promote, establish, protect, preserve and maintain an online library and archive of academic journals published throughout the continent of Africa, to provide online access to the journals for educational, research and cultural purposes and to provide a publishing service for African journals.’

Journals are selected for inclusion on AJOL using the following criteria:

- They are scholarly in content, and contain original research (in addition to other content)
- Their content is peer reviewed and quality controlled
- They are able to provide all content for inclusion on AJOL (tables of contents and abstracts) in electronic format (e.g. Word files)
- They guarantee permission from the authors to allow AJOL to operate a document delivery service
- They are published within the African continent. Management of publishing strategy, business development and production operation are all run from an African country.

AJOL is not a publisher per se: AJOL provides a free service to the journals by hosting their content online, and actively promoting the website to encourage discovery of these titles and their articles. AJOL is a non-profit organisation whose mandate is to promote and increase online access to African research output and to support African scholarly
publishing. This is done primarily via the provision of a central and globally available online platform, using open-source software, through which African journals and full-text articles can be accessed.

AJOL’s system is based on the following open source (free) software programmes and technologies:

**OJS** – The Open Journals System (OJS) software is developed by the Public Knowledge Project (PKP) at the University of British Colombia in Canada.
**PHP** – Scripting Language
**MySQL** – Database Management System
**Apache** – Web Server
**Linux** – Operating System

AJOL’s system consists of a bibliographic database as well as digitized full text, with a user front-end (where users can browse and search the contents of the database online) and an administration front-end (where publishers can log in and manage their journals on the database by performing tasks such as adding new abstracts).

AJOL’s own programmers have amended the OJS software and included additional front-end functionality, but there are hundreds of journals and several other INASP-supported “journals online” projects in developing countries around the world using the core OJS 2.2.1. AJOL’s amendments will be made available to PKP as open source plug-ins to OJS – an additional AJOL contribution to the international scholarly community.

**Pivotal Macro-Level Factors in Getting African Journals Online**

**Policy Adjustments and Financial Resources for Research and Research Communication**

Global agencies like the World Bank mistakenly under-estimated the critical causal link between higher education and improved economic growth in developing countries’ economies for 55 years, to enormous and ongoing detrimental effect on the African continent. While the pervasive effects of this harmful policy continue, it has been reversed on paper at least – the World Bank and UNESCO jointly concluded in 2000 that Higher Education is actually critical for economic growth and development (TFHE, 2000), and this finding has been reinforced by subsequent research (Bloom et al, 2005). However, many African Governments have not acted on this information at the policy and legislative level, or the practical national and regional enabling programme and budgetary levels regarding support for research, Higher Education and effective scholarly communication infrastructure. For example, a practical and pervasive problem throughout the continent, that AJOL participants struggle with continually, is the unreliability of electricity supply. Reliable electricity is a basic and ubiquitous requirement for the effective use of Information and Communications Technology (ICT). African governments should be urged to invest in improving sustainable electricity generation and supply.
‘By establishing mutually beneficial co-operative partnerships especially within Africa, but also with countries abroad, the challenges to both higher education and internationalisation can be met’ (Neale-Shutte and Fourie, 2007: 139). Although it is promising that regional initiatives like the New Partnership for African Development (NEPAD) and the African Union (AU) have recognized these aspects as important to focus on, they do not yet appear to be sufficiently engaging with existing initiatives to build on strengths that already exist on the continent, for example, AJOL’s attempts to make contact with and begin a collaboration with NEPAD and the AU have been fruitless to date. This is unfortunate, given that AJOL is an initiative that has the potential to be deepened and broadened into a more comprehensive African scholarly resource if it was actively supported by and working with the regional organisations on the continent. As it stands, AJOL has very limited funding (entirely from the developed global north, via INASP), and few African partners aside from the journals themselves, so it therefore is still a very small organisation striving to do very big, much-needed work. The new AJOL Director has only recently learned of the World Bank’s African Publishing Initiative (API), which was launched in 1997. One of the API’s 3 objectives is to ‘Use and strengthen available distribution networks’ but although AJOL is the largest online collection of African-published journals in the world, there is, again, not any collaboration in place between the two organizations. AJOL will attempt to form an active collaboration with the API in the near future.

Additionally, many influential donor organisations’ funding criteria and policies also have not yet taken on board the absolutely vital need to support high quality Higher Education, original research and research dissemination in Africa. Even where donors do recognize the importance of education, it is AJOL’s experience that support to ongoing and regional initiatives like AJOL is very limited. Rather, funding tends to go to fixed term (and usually short term) country-specific projects, often in basic and primary education. Where funding does get devoted to tertiary education and research, the research output dissemination is often neglected. At least one journal donor reportedly insists on the journal participating in AJOL as a condition of the funding, which is a sound approach to ensuring visibility, and this should be encouraged amongst other donors in the field as an additional measure to make journals aware of the benefits of AJOL to their dissemination goals.

Although ‘most African universities emphasize research and publication as a requirement for academic advancement’ (Altbach, 2003: 145), there is a need for African university administrators to match this emphasis with the provision of an enabling policy and practical environment to actively support African scholarly publishing. This is, apparently, currently not the case in many of the 300 or so African universities, so university leaders need to institute actionable policies in this regard.

Despite completely understandable resentment by many, the languages of the colonialist countries continue to be the primary mode of instruction in African and international academe. The preferred use of vernacular languages to the exclusion of English, French and Arabic could isolate African academia from the rest of the world. The widespread adoption by journals, research organisations and universities of actionable policies to
support both the relevant Western language and the vernacular language in their research dissemination would be advisable (Teferra, 2003: 116).

An attempt involving AJOL’s founding organization, INASP, was made in 2005 to set up an African journal community organization (the Society of African Journal Editors) but so far this has had limited success. However, those involved have indicated that they are interested in resuscitating the effort, so hopefully this can be built on to become a forum for regional co-operative work on the African system of scholarly research and research dissemination and improving quality of African-published journals.

Since African academia is widely characterized by an extreme insufficiency of financial resources, there is a great need for co-operative, cohesive and pro-active advocacy work by role-players in the African system of knowledge generation and dissemination to enlighten their Governments, university leaders and donor partners in increasing budgetary allocations and improving supportive policies to research publishing. AJOL intends to be more active in this type of advocacy work in future, and extends an open invitation to relevant parties to contact the organisation about this work.

**The Market Failure in African Scholarly Publishing**

One of the neglected and major weaknesses of Africa’s scholarly publishing is that there are not enough academic publishers on the continent. Although this is a real and important need, commercial publishers in Africa struggle to make a profit, and therefore a significant proportion of African journals are published by societies, university faculties or departments rather than professional publishers.

‘More often than not, running the business of a journal is the work of one person who acts as editor-in-chief, editor, messenger, copy editor, managing editor, technical editor, referee, designer, and negotiator (with printers, distributors, and university officials), often with little or no recognition, sympathy, and/or assistance from the university administration.’ (Teferra 2003: 135)

AJOL has also observed that many of the companies representing themselves as publishers in Africa, are, in fact merely hard-copy printers, and are not involved in the peer-review process, language editing, layout, or any of the other value-added processes that academic publishers typically undertake to ensure quality. Even relying primarily on volunteerism, free services and software that spread or reduce the workload of journal work-flow administration and dissemination, it is difficult for these small journals to attain the quality standards required to become regarded as a world-class academic publication.

Rather than providing limited support for small, under-resourced journals being published out of university departments, it would be a valuable correction of the market failure were African governments and overseas donors to undertake long term support for professional non-profit scholarly journal publishers in Africa. In the reaction to the serials crisis, all scholarly publishers run the risk of being tarred with the same brush as the large
profit-taking conglomerates. However, it is still important to note that professional publishers do add significant value to the information chain and are part of the scholarly information community (Anderson, 2007).

‘It seems obvious to the point of truism that an intellectual and creative community grounded in publication should complete the circuit by supporting those who work to provide venues for publication’ (Luey, 2008: 93). This could substantially improve the quality and volume of scholarly publishing in Africa. The trend of some of the best quality African journals moving to overseas publishers could be curtailed by this systemic intervention to support local professional publishers, and also allow for open access publishing in Least Developed Countries. As far as AJOL has been able to ascertain, all the sustainable business models for Open Access journal publishing, notably the most common “author or author’s institution pays” model, only work well in Middle or High Income Countries. It is a myth that Open Access publishing is without cost. Until the strengthening of the entire system of research and research dissemination in Africa begins to bear economic fruit, AJOL asserts that there is a strong need for State and donor support for non-profit academic publishers on the continent.

In a recent study testing the prevailing assumption that South African authors avoid African scholarly publishers in favour of those from the developed global north for reasons of prestige and credibility, Le Roux and Galloway found this not to be the case (Le Roux and Galloway, 2008). Although this study focused on scholarly books, rather than journals, a similar study on African serial publishing would be of great value. It is highly likely, in AJOL’s opinion, that there is a similar incorrect perception and over-emphasis of author’s desires to publish journal articles overseas. If sufficient high quality, highly visible, subject-appropriate journals existed in greater numbers on the African continent, it is likely that many African authors would prefer to publish on the continent instead of overseas.

**African Internet Connectivity, Bandwidth, Computer Availability and associated Skills**

As a result of poor connectivity, limited bandwidth, and weak domestic backbone infrastructure, African institutions’ locally-hosted websites (even those from countries with comparatively strong ICT) are frustratingly slow. This proves a real and practical barrier to their degree of accessibility from both developed and developing countries. AJOL hosts its site in the United States of America to offset this problem. Africa’s internet connectivity is also the most expensive in the world, for example, ‘the average retail price for basic broadband in Sub-Saharan Africa in 2006 was US$366 per month, compared with US$6 -US$44 per month in India’ (World Bank, 2008: i). However, much of the problem is likely to change radically in the next year; partly due to the undersea fibre-optic cables currently being laid in the region, and partly due to intervention by the internet giant, Google. Google has recently announced that it ‘has signed up with Liberty Global and HSBC in a bid to launch 16 satellites, which will bring high-speed internet access to Africa and parts of Asia, Latin America, Australia and the Middle East’ (Gedye, 2008). This new project, named O3b, is likely to massively reduce the cost of bandwidth in Africa. Once fast, affordable connectivity is ubiquitous, this leaves local backbone
infrastructure, and institutional and personal hardware and software to be dealt with as bottlenecks.

The installation and maintenance of free open source software is still frequently the domain of highly skilled computer personnel. In resource-poor countries and institutions, this still poses a major challenge to information access. The corollary of AJOL’s use of a combination of open source software to reduce costs and the concomitant need to tailor this software and website functionality to suit the purposes of the service, is that AJOL requires the frequent services of skilled PHP computer programmers. In the face of a global shortage of these skills, and the brain drain phenomenon in Africa, this is a challenging requirement for a small non-profit organisation to fulfil, but a near impossible task for an under-funded society journal in a Least Developed Country, for example. Online hosting by a journal aggregator, such as AJOL, reduces the onus on journal to procure this expensive human resource themselves.

Although it is expected that the technical barriers and difficulties faced by pioneers in electronic publishing will decrease as the field matures (Willis, 1995), aggregated online journal digital libraries are likely to continue needing in-house software development to manage changing technology, maintain software platforms, new hardware and new developments that arise. The promotion of ICT and computer programming qualifications is important by both African universities and African Governments. That said, it is AJOL’s belief that the users of the software (as opposed to the IT experts and support staff) should be more pro-active in teaching themselves how to use these tools through “learning-by-doing”, rather than passively awaiting training by some expert. As access to hardware and the internet increases, this self-taught application expertise is likely to improve.

The Open Access Movement

Any paper on getting journals online would be incomplete without at least the mention of Open Access publishing, as it is for the most part positively having a huge impact on journal publishing globally. Advances in technology, participation in support programmes, the use of volunteerism, open source software (such as the Open Journal Systems software AJOL uses), and moving to entirely digital online publishing (saving on hard copy printing and postage) can reduce costs considerably, making it far more feasible to provide content to readers for free. However, the publishing process is still not without cost altogether. Most Open Access business models rely on alternative income streams (other than subscription income), such as author fees and advertising income, to be able to cover these costs. In Least Developed Countries, when the author or the author’s institution simply does not have the finances to pay author fees, or the right field to attract advertising income, it is difficult to see how Open Access journal publishing can be sustainable without outside financial support. However, for journals that do have alternative income streams and strong institutional or donor support, Open Access publishing can greatly assist in increasing the visibility and readership of journals. It must just be noted that before moving over to an Open Access business model, journal editors and managers should be very sure, after adopting the cost-saving measures that new
technology provides, that their remaining costs can still be covered sustai
ably. AJOL plans to begin hosting more information on Open Access journal publishing as a free resource to assist this process.

The primary goal of AJOL is to facilitate worldwide access to the full text of African Journals – both by hosting the full text online and redirecting users seamlessly to existing websites. With full text hosting going live on AJOL by the end of 2008, AJOL will provides a range of online full text access models for journals, from complete open access to only subscribed access, with hybrid models of restricted access. In this way, AJOL will provide a valuable tool for those journals wanting to adopt an open access model, as they will not have to have their own website to host their full text open access online. At the same time, though, AJOL respects each journal’s right to its autonomy and full choice of business and publishing model, so functionality for all degrees of journal-decided full text access has been built into the “new AJOL” functionality.

The provision of free full text content of scholarly journals from the developed North to developing countries is a wonderful resource that is probably not yet sufficiently being taken advantage of by African universities and other research institutions. Along with purely open access journals (that can be found through the Directory of Open Access Journals, DOAJ), there are several sources of free access to journals that are not open access. INASP’s PERI programme, HINARI, AGORA, TEEAL, JSTOR’s African Access Initiative, OARE, Project Muse, and so on, all host high quality academic content that can be accessed for free or at low cost by qualifying African institutions and in some cases, individuals. The existence of these programmes needs to be more widely promoted in Africa, so that researchers and authors may take advantage of these resources to move closer to the centre of the global knowledge system.

However, it is absolutely critical to note that although these resources are provided for free in Africa, the majority of the journals involved in the initiatives listed above are not open access in the developed global North. For the most part, Africa does not represent a significant market for the large and well resourced European and American publishers, so agreeing to make their content available for free in Africa through the above-mentioned initiatives does not cost them anything. By comparison, competing African journals that publish significant, relevant and appropriate local research do often rely primarily on local subscription income to cover the costs of publishing and are forced to compete with their subscription-based material against the locally free offerings from the developed world. These initiatives have the potential to force local libraries to cancel local subscriptions in favour of free content, which has the potential to impede the local use of more relevant, locally conducted and published research. This, if anything, adds greater impetus to the argument for African journals to move to an Open Access publishing model. Without this move, or in the lack of sufficient support from all levels to support and nurture the local scholarly publishing industry, these overseas-provided free resources could cause the loss of indigenous journals and have a serious effect on local research advancement and publishing.
Pivotal Macro-Level Factors in Getting African Journals Online – AJOL’s Successes and Failures

Scholarly journals remain a vital and entrenched means of academic communication. In the information age, providing electronic access to journals is becoming the norm if that research is to reach the international audience who need to be aware of it. In the information age, making African scholarly meta-data and full text comprehensively digitally accessible requires:

1) availability on the internet (through online hosting and active journal commitment) AND
2) visibility (through aggregation, search-engine-optimized and high profile websites and marketing, promotion and awareness-raising)
AND
3) usability (through sensible and pragmatic software design, hosting that allows fast download for those with good connectivity, and logically organised information).

Evaluations of the AJOL programme show that research produced in African journals has been made more visible and accessible by the AJOL website. The data collected from the registrations, document deliveries and user questionnaires strongly indicates that AJOL has become established as a source of information not easily obtained from other sources.

Availability on the Internet

AJOL attempts to bridge the gap between the enormous higher education (and development) potential inherent in digital online technology, and the economic and other resource limitations that constrain African journals from using it to disseminate their content widely. AJOL’s various free services to journal publishers and researchers help to decrease their costs in a way that has a net reduction in the cost of online journal hosting and access. The sum of the costs of each African journal outsourcing the online hosting of their content in isolation would far outweigh the cost of AJOL doing so for multiple journals. In many cases, it would not be possible for journals to be available online without AJOL’s assistance.

One of the recommendations of evaluations of the AJOL initiative was that the availability of full text online and not just access to bibliographic information was important. As a result, AJOL’s entire hard copy collection was digitized during late 2007 and 2008, and additional functionality added to the site to include full text. The “new AJOL” is currently in the final beta-testing stage, and full text of participating journals will be online on AJOL by the end of 2008. This is expected to markedly increase the use of AJOL and its value to African and international researchers.

Participating subscription-based journals should not fall prey to concerns about their full text being available online. It is not possible to download the full text of articles of subscription-based journals from AJOL without complying with the same progressively charged payment as AJOL’s current document delivery system (with a portion of the
income being repatriated annually to the originating journals). Some of the journals have received a substantial income from the document deliveries, but for most, the income is small. Instant download (after payment) is expected to improve this small income channel for AJOL subscription-based journals.

Despite the overall increase in the number of document deliveries by AJOL over the years, the number of paid deliveries has not increased very much so perhaps more work needs to be done in publicizing the service in the more developed countries so as to increase the revenue earnings. The bibliographic database and journal information on the AJOL site is and will continue to be open access and the journals do not pay anything toward the running of the service. AJOL also intends to explore other alternatives to increase self-generated income to add to its sustainability, but currently, as with the provision of most “public goods” where market failure obtains, the availability of African journals online through AJOL will likely continue to remain primarily dependent on donor or government funding.

AJOL is also working on adding Digital Object Identifiers (DOI’s) to full text articles of all participating journals. DOI’s are increasingly used in references and bibliographies, as they are permanent links to items on the internet, even when the journal is moved to be hosted elsewhere, for example. This will add to the permanence of the availability as well as usability of African journal articles online.

AJOL has achieved a growth of around 35 additional journal participants to be available online per annum. This is slow, but steady growth, which AJOL intends to improve on each year going forward.

AJOL has succeeded in maintaining online availability of almost all the journals that have joined the partnership over the past decade. However, of the unknown total of African journals published on the continent, it is likely that the 331 journals online with AJOL is only a fraction of the full total possible. Nigeria and South Africa have tended to
dominate the service because of their size and the large academic community producing many journals. AJOL does host journals from 25 African countries, but in future aims to increase the numbers of journals from countries other than Nigeria and South Africa.

Updating and verifying contact details for editors, journals and publishers is a difficult and time-consuming task, but an activity that appears essential for lines of communication to be maintained in order to keep journals available and up to date. AJOL has learned to request multiple email addresses for each contact, so that if one email address is abandoned or changed or its inbox is full and not accepting incoming mail, we can still stay in touch. URLs and email addresses do change frequently, as many institutions move from various host servers to their own new domains, for example. It would be exceedingly useful for journal staff to notify AJOL of any changes of this kind as they occur.

296 journals were online with AJOL at the end of 2007, and as of 31 August, 2008, there were 331 journals online with AJOL. Of the latter total, 175 journals have content published during 2007 on AJOL, and 94 from 2008 (noting that there is still the last quarter of the year to go at the time of writing, so this figure is expected to markedly increase). 15 of the 94 titles from 2008 are new additions to AJOL, or did not publish in 2007 but did during 2008. This means that 190 (57.4 percent) of the 331 of participating journals have recently published issues online with AJOL.

AJOL is actively in communication with 221 of the 331 participants (66.7 percent). So, there are 31 active journals that have not contributed content to AJOL since the beginning of 2007, although we know they remain extant. These journals have either not yet provided AJOL with their recently published issues, or have temporarily ceased publishing, but are expected to resume.

110 of the AJOL participants do not respond to AJOL’s attempts to contact them, nor have they added or sent content to AJOL since the beginning of 2007. Of these 110, AJOL has stopped hosting recent content of 3 journals due to their moving to foreign publishers (although the African-published content of these journal remains on AJOL). So, 107 of the 331 journals participating in AJOL (32.3 percent) can be considered inactive. Of these, it has been established that 10 journals have closed down and ceased publishing altogether. Of the remaining 97, it is not known whether they have closed down, temporarily ceased publishing, or are continuing to publish but have neglected to stay up to date on AJOL, despite having signed contracts to do so.
The fact that one third of the journals that have joined AJOL since its inception in 1998 have not actively participated in AJOL since the beginning of 2007 or earlier, for whatever reason, is a disappointing but predictable statistic. To some extent, this could be attributed to shortcomings in the AJOL service, being a very small organization with limited resources. An important weakness to note is that AJOL has not been sufficiently active in terms of regular newsletters to journal participants, indicating progress and user statistics proving the worth and impact of the partnership – a weakness that will be addressed from 2009 onwards. That said, AJOL’s individual and direct communication with active participants is excellent (in fact an important strength), so it is likely that shortcomings in AJOL itself are not a very significant factor in journals becoming inactive. It is safe to assert that the primary reason for the sporadic or discontinued publishing on the part of many African journals is the enormous systemic difficulties facing the system of scholarly research and research dissemination in Africa.

For the past few years, most journals joining AJOL have initiated contact, rather than the other way around. AJOL considers this both an achievement, as word of mouth about the service indicates value for the beneficiaries, and a weakness. Marketing, promotions, publicity and awareness-raising are frequently neglected by individual journals and have not been paid sufficient attention by AJOL over the past few years either. This will be addressed over the next 2 years, as AJOL staff increasingly strive to pro-actively identify and recruit African-published journals.

Visibility on the Internet

While it is possible to use the free OJS software to host a journal online in isolation with relatively basic computer and internet skills, it is not possible for individual journal websites to attain the same high degree of visibility on the internet as aggregation through a search-engine optimized service like AJOL. Aggregation is key to greater visibility of
African-published journals on the internet. The more journals that participate in the AJOL service, the higher the visibility of each of them.

Skilled and knowledgeable website designers are an important component of another essential element to increasing visibility online, namely ensuring that your coding is search engine optimized. If the major search engines cannot locate a website easily, it will not be visited very often! The success of the Internet in making African research more visible is illustrated not only in the increased use of AJOL, but also by the fact that the majority of the users found the website by using an Internet search engine. The expectation that research information will be available on the Internet has spread to researchers and students in less developed countries and it is important that AJOL has become a recognised source of African research and for most of the journals on the service it is the top of any search results.

Even though one third of the participating journals are no longer actively contributing recent content to AJOL, the AJOL service has very successfully managed to raise the visibility of all of the participating journals. Google’s PageRank is a numeric value that represents how important a website is on the internet from 0 to 10, with 10 being extremely important. This value is used by Google as part of determining the order in which search results are displayed by Google. African Journals OnLine (AJOL) has a Google PageRank of 7, and AJOL is usually in the top ten results of search strings relevant to the participating journals. As a result of AJOL’s compliance with the Open Archives Initiative Protocol for Meta-data Harvesting, journal content listed with AJOL is now being indexed through Open Archives Initiative search engines dedicated to research, which collect the metadata for each journal article, making this readily available to a global audience, and giving the journals much greater visibility among the worldwide research community even beyond AJOL itself. For example, AJOL is indexed by Google Scholar and many other databases. The AJOL website address is also included in the resource section of many hundreds of reputable universities’ libraries and that of research organisations worldwide. AJOL is also a founding member of the WorldWideScience Alliance (www.worldwidescience.org), which provides a federated deep-web search tool to access research data, meta-data, and full text resources from all over the world.

The majority of journals joining the service during 2004 - 8 approached the service directly because they wanted to be included. The advantages of being showcased with other African journals are appreciated and the information about the benefits of the service seems to be spreading by word of mouth among journal publishers. Many journals have informally reported that the number of submissions to their journals has increased, thus raising the standard of the content.

Now that it is possible to identify the number of hits on individual journals, it can be demonstrated that all the journals are being visited on the website and it is not just the more well-known journals that receive the most hits. The rise of academic interest in health, agricultural and environmental issues is clearly demonstrated by the large number of users visiting these journals in the last two years.
Articles supplied by the document delivery service have increased dramatically. While most of the articles were supplied to African researchers, there was a significant increase in the number being delivered to Asian countries which is very encouraging because it illustrates the development of a South-South exchange of research information.

Usability on the Internet

To some extent, the use of the AJOL service is an indicator of how usable the site is, as well as the need for the service and its visibility on the internet. For a small organisation of 3 full-time staff members, and a couple of people who contribute outsourced services on a part-time basis, the users of the AJOL site are quite impressive in terms of their volume and spread.

**Top 10 Countries of Origin of the +/- 500,000 Researchers who Used AJOL in 2007**
AJOL has attained improvements in usability of its website over the years, but there are still elements of it that are cumbersome or insufficient for readers. One important current lack is that the journals that are Open Access are not yet clearly marked as such on AJOL. Another is that journals that have stopped publishing are not easy to identify either. These improvements, along with adding links to other reference sites and resources, and a rationalisation of the subject categories that journals are grouped by on AJOL have already been incorporated on the new “full text” AJOL site to be launched by the end of 2008.
AJOL hopes to be in a position to offer participating journals the benefit of the full capacity of Open Journal Systems in terms of free hosting of the entire publishing workflow process by 2010. This will be a considerable boost for participating journals.

Another important usability element for journal staff, as opposed to readers and researchers using AJOL, is that of increasing the ease for journals to load content and manage their AJOL homepages themselves. This will involve the development of an “off-line loading tool” in AJOL’s open source software arsenal, and is planned to take place by the end of 2009.

Journal Quality

Before concluding, it is very important to emphasize the issue of journal quality. While there is, to an extent, a reciprocal relationship between the publication and distribution of African research and the quality of African research (Rosenberg: 2002), putting African journals onto the internet visibly and usefully is only part of what is needed. At the same time as African research outputs are made more accessible online, it is equally imperative to improve their quality to the level that they can compete with and be recognized by the rest of the global academic and research community. Primarily due to the plethora of challenges facing journals in Africa, there are some AJOL participant journals that have not been able to maintain the standards that AJOL requires on joining. However, there remains some merit to keeping these journals exposed online, as their content is still of relevance to indigenous research. In order to make clear that there is a huge range in the quality of African-published journals, and to stimulate improvements in quality through comparison, it is likely that AJOL journal participants will be split into 4 different categories of scholarly publications within the next 2 years, namely:

1) Premium, peer-reviewed, African-published journals (based on their compliance with AJOL quality criteria and their use through AJOL – the latter being an indicator of how important users find the journals)
2) Emerging, peer-reviewed, African-published journals (those that are new and untested or struggle with quality issues, regular publishing, etc but that still need to have online exposure as they are useful to various African and international users, and can improve their quality through participation)
3) Non-peer-reviewed African-published scholarly serials
4) Journals published elsewhere in the world on or for Africa.

The last two categories will be entirely new to AJOL, and increase its value as a tool for research in and on Africa.

Conclusion

The advent of the internet in the 1990’s appeared to be a wonderful opportunity to help overcome challenges involved in increasing access to African-published journals, however, a couple of decades on, there is still much room for improvement in getting African journals online. The internet, open source software and imminent radical
advances in ICT infrastructure and connectivity in Africa do and will assist in this vital work, but it should be remembered that these are merely the tools of the information age. The pro-active, systemic, organized and strategic use of these tools will determine the future of African scholarly publishing. To be accessible in the information age, African journals must ensure they are available, visible and usable on the internet. In addition, role-players in the continent’s system of knowledge generation and dissemination hold the ultimate responsibility and moral burden to build on existing capacity through co-operation and collaboration. It is only by addressing the complex and multiple requirements on all levels that optimal use of opportunities will be attained and the African continent will be brought to prominence in the global knowledge system.
References


