The Rise of Open Access Journals: Their Viability and Prospects for the African Scholarly Community

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Abstract

Electronic publishing has enabled the publisher of scholarly journals to offer an enhanced high quality product, but one that comes bundled with unsatisfactory conditions: high prices, inflexible terms and copyright obstacles that severely restrict the optimal flow and use of information. Dissatisfied with the terms and limitations of traditional journals, individuals, groups and organisations have opted to advance a different model of journal. The open access movement may be seen as part of a critical trend that seeks to break the stranglehold of commercial expropriation of information. Open access journals are freely available for reading, copying, and disseminating. With growing support from many different quarters, the challenger to the $3.5 billion publishing industry packs a potentially destabilising punch. This paper will cover the rise of open access journals and examine the economics of the 'author pays' business model. Notwithstanding the appreciable benefits to readers, the impetus to overturn deeply entrenched traditions must also overcome significant barriers. These include the practice of the academic reward system, funding issues, perceptions about quality and integrity, as well as the fundamental problem of the digital divide. While the open access model also presents a serious threat to scholarly society publications, all initiatives to promote visibility of African journals should be explored.

Résumé

L'édition électronique a permis à l'éditeur de revues savantes d'offrir un produit de haute qualité, mais dans des conditions peu satisfaisantes: les prix élevés, les conditions rigides et les obstacles liés au droit d'auteur qui restreignent fortement le flux et l'utilisation optimaux de l'information. Insatisfaits des termes et des limites des revues traditionnelles, les individus, les groupes et les organisations

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ont choisi d'adopter un autre modèle de revue. Le mouvement du libre accès peut être considéré comme faisant partie d'une tendance qui vise à briser l'étau de l'expropriation commerciale de l'information. Les revues de libre accès sont disponibles gratuitement pour la lecture, la copie et de la diffusion. Avec l'appui croissant de plusieurs milieux différents, le défi lancé à l'industrie d'édition qui est de 3,5 milliards de dollars a eu un effet potentiellement déstabilisateur. Cette étude portera sur l'essor des revues de libre accès et examinera les aspects économiques d'un modèle fonctionnel « auteur-payeur ». Nonobstant les avantages appréciables pour les lecteurs, le projet de renversement des traditions profondément ancrées doit également surmonter d'importants obstacles. Il s'agit notamment de la pratique du système de récompense académique, les questions de financement, les perceptions de la qualité et de l'intégrité, ainsi que le problème fondamental de la fracture numérique. Bien que le modèle du libre accès présente également une sérieuse menace pour les publications des chercheurs, toutes les initiatives visant à promouvoir la visibilité des revues africaines doivent être explorées.

Introduction

Right from the arrival of the first graphical browser in 1993,[1] we have been aware of the Internet's great potential to optimise the flow of scholarly ideas. This potential has become more valued and urgent as knowledge is now widely acknowledged to be the premium resource that drives economic and social development. To what extent have the efficiencies and distributive power of the Internet been realised within the realm of scholarly journal publishing?

ICT for increasing efficiency and advancing cooperative learning

A mark of the Electronic Age is that ICTs tend to be viewed as a solution, if not the cure-all, for almost any problem. There is a sense that performing any task electronically inherently advances that activity or process, or at very least boosts productivity. We are encouraged or obliged to automate our work processes, communicate electronically, store digital resources, create an online presence for our organisations, mostly in a drive for greater efficiency to save time, money and space.

In addition to the efficiency factor, another rationale for employing electronic media is that we would like to share or distribute information between colleagues, partners, clients and stakeholders. This desire or need to share information or work collaboratively in partnerships with others reflects another trend in the information age where networks are the unit of production. Working collaboratively helps us to keep up with the rapid pace of change and new knowledge. With the help of networking tech-

nologies, we have formed consortia, regional and international associations and other cooperative networks in order to pool resources and to learn from one another. One of the benefits of enhanced communication technology is that there is a more pervasive communitarian sense of a global fellowship -- that we can derive progress from collective effort. ICT has thus paved the way for greater efficiency and collaborative learning

In academic publishing, we have only evolved halfway towards achieving the benefits of the electronic age. The publication processes have been automated and the products are digital, certainly in a drive towards greater efficiency. Publishers have exploited Internet technology to link articles and citations in databases that span wide areas of knowledge. These facilities offer great convenience and those that have desktop access to them certainly save time. But we are not yet saving money. The widely anticipated financial savings that was forecast for the electronic medium has not come about; instead, we are finding scholarly journals to be more expensive. Publishers who have invested millions in developing electronic platforms have undoubtedly passed on the cost to subscribers. Academic libraries across the world have been forced to cut journals even as they spend more on them. So, electronic publishing has achieved some time efficiency but at a greater financial cost.

Open access publishing aims to achieve not only the efficiency factors of time and money, but also to advance the progressive dimension of sharing and collaboration towards a collective public good. While no one would contest this worthy aim, there is a flurry of debate and growing tension around the notion of open access publishing at the moment. The reason for this free for all is that open access presents a real possibility of destabilising a publishing tradition that has been with academe for over two hundred years. On one side, a group of advocates steadfastly claims that open access can overcome the ills of the serials crisis and liberate scholarly information; on the other side, we find the representatives of a $3.5 billion industry whose interest is in maintaining the profitable status quo, flanked by non-profit publishers who play the quality and integrity card, but whose survival is threatened. In between are the policy makers and government agencies that have the power to regulate the industry by weighing in their considerable support where they see the greater efficiency and public good.

The Development of open access publishing

There is no doubt that the Internet has been the catalyst for open access. Alongside the transition to electronic subscription journals, we have seen a growing diversification of electronic publications, each of them parallel

developments to the traditional journal, and all of them made possible by the Internet. Scholarly authors now frequently make use of a wider range of channels to disseminate their work. These include pre- and post-print servers, open access journals, discipline-based and institutional repositories, portals and subject gateways, newsletters and bulletins, and personal web pages. In some cases, these web-based products may have arisen as part of a fashionable trend, or as the 'latest thing' to implement. But, increasingly, within the last five to eight years, many initiatives have been ideologically driven, and have collectively become representations of, and aligned themselves with, the open access movement. With the failure of electronic journals to deliver relief from spiralling costs, individuals and organisations have sought an entirely new vision for scientific publication. Briefly, the aim of open access is the free and unrestricted access to all peer-reviewed scholarly literature for the benefit of improved scientific communication across the world. In particular, it stresses that economic disadvantage should not prevent access to information

The history of this movement is charted in the *Timeline of the Open Access Movement* (Suber 2004).[2] The pattern of chronological entries reveals how early open access ventures were initially only occasional footprints in the mainstream of academic publishing. By the mid 1990s, the entries on the timeline become denser as use of the World Wide Web gained wide currency. Since 2000, the open access timeline has become a busy road with multiple entries. Some of these entries document critical actions. For example, over ten entries document the protest resignations of entire editorial boards over publishers' exorbitant subscription hikes. These panels of editors subsequently launched their own cheaper or open access journals. From the universities' perspective, the chronology also documents a wave of protest actions, beginning in September 2003, that have been taken by universities against inflexible publishers. These include large-scale cancellations, new institutional policies, Senate resolutions, public statements and recommendations to faculty, librarians and administrators. These actions are indicative of the ongoing serials crisis that has been exacerbated by the monopolisation of the publishing industry by a few corporate giants.

The critical dimension of open access movements

In highlighting the critical dimension of the open access movement, it may be possible to discern some similarities to several other separate, yet related, open access trends that are currently emerging and gaining strength. The free open source software movement has arisen in opposition to the

worldwide dependence upon expensive proprietary software systems that lock organisations into inflexible computer programmes that cannot be customised for optimal use. Open source programmers distribute their software's source code freely, and in this way contribute to the greater societal good of creating responsive programmes that others can learn from, or adapt, to make them more effective for different operating environments.

The Creative Commons movement, launched by Lawrence Lessig from Stanford University in 2002, is an initiative that seeks to break the copyright stranglehold of commercial publishers. The Creative Commons philosophy promotes the free dissemination of creative or artistic works over the Internet and provides a variety of legal licences that enables authors or artists to allow others to use their creative works without paying royalties, particularly where the use is non-profit. Cited examples include   footage of the New York skyline for use by other film-makers, or making the scores of orchestral works available for free use by small-town orchestras.

Open courseware is another growing trend which sees distinguished universities such as Cornell, MIT and Berklee providing free access to all teaching and learning materials over the web. The term Open Content may also be used to refer to repositories of learning objects that enable compilers of online courseware to collaborate and share resources for teaching and learning.

A common thread drives these movements and connects them to open access. They each embody the more enlightened vision of sharing for greater public good. The fact that they are all emerging at the same time suggests a common rejection of the commodification and commercialisation of information, and the over-strenuous application of ever-restrictive copyright and intellectual property provisions which favour corporate interests while stifling the kind of sharing that leads to innovation and creativity. These open access initiatives represent a counterbalance to the competitive force of globalisation, which is antithetical to the collaborative ideal. In each of these phenomena, there is a use of the World Wide Web to democratise the use of information. In each case, one has a sense of the subversion of traditional publication.

Organisational support for the open access movement

The open access movement has received a massive publicity boost courtesy of a spate of well-publicised public statements that endorse and promote open access[3]. These declarations are based upon principled stands by a wide range of stakeholders, including funding agencies, public interest

groups, library organisations, academies and not-for-profit publishers – and more recently, government agencies.[4] Each statement commits the signatories to promoting the unrestricted free distribution of scientific information on an equitable basis to all countries. They also call upon the academic community to take up the two available avenues of open access publication. These are open access journals and author self-archiving within electronic repositories, which may be discipline or institution based. These two options are seen as complementary, rather than exclusive channels.

The importance of repositories at this point in the evolution of open access scientific communication is the result of intensive efforts of the Open Archives Initiative,[5] an organisation funded by the US National Science Foundation, the Digital Library Federation and the Coalition for Networked Information. It is coordinating in-depth collaborative projects to develop internationally recognised standards and powerful archiving tools that enable interoperability and cross-searching of online archives or repositories, as well as software that enables the discovery of resources and sharing of metadata. The increasing adoption of open access repositories over the last year alone is testimony to the proven stability and success of these tools and standards.

Over the period from February to July 2004, the Science and Technology committee of the UK House of Commons conducted an official inquiry into scientific publication. One of the focus points of the enquiry was the question of open access journals. The committee requested written submissions from commercial publishers, not-for-profit and open access publishers, research councils, leading academics and librarians. Thereafter, representatives from these sectors faced critical questioning in public hearings as the committee attempted to gather evidence to determine what measures should be taken by the British government to ensure that researchers, teachers and students have access to the publications they need. The verbatim transcripts of these proceedings provide useful insight into the social and professional dynamics of the scholarly publication industry and its intersection with academe and government bodies in Britain (Science and Technology committee 2004a). What emerged from the hearings was a solid vote of confidence for open access archives or repositories.

The final House of Commons report, delivered on 20 July, recommends that 'Research councils and other Government funders mandate their funded researchers to deposit a copy of all their articles in their institution's repository within one month of publication.'[6] The repercussions of this recommendation are bound to unsettle commercial publishers. Their

chief concern is likely to be that the free availability of articles starts to break down the copyright monopoly they have enjoyed.

Notwithstanding the centrality of open archives to the open access movement, the focus of this paper is on open access journals, their economics, and some of the barriers that hinder their uptake. It will also look at their potential for the academic community in Africa.

Directory of open access journals (DOAJ)

Open access journals may be found clustered at the site of the Directory of Open Access journals.[7] The Directory is a service that provides free access to 1149 full text quality-controlled scientific and scholarly open access journals across a wide range of disciplines. The goal of the DOAJ is to increase the visibility of open access journals, thereby promoting their increased usage and impact. From the homepage, one may browse journals alphabetically or topically. Contributing journals emanate from all continents and appear in several different languages. With assistance from the Open Society Initiative and SPARC (Scholarly Publications and Academic Resources Coalition), the DOAJ is gradually implementing functionality for article-level searching across the full range of journals. Using the protocol for metadata harvesting introduced by the Open Archives Initiative, it is also possible to download records for library catalogues.

Criteria for journal selection are that journals are peer reviewed, that the content presents primary research results and is aimed at researchers, and that no subscription fees are charged. The majority of the contributing journals are non-profit, low-key departmentally based initiatives that rely upon the volunteer efforts of a small dedicated group of academics or graduate students.

Although the majority of open access journals are currently non-profit concerns, these are by no means the most visible open access journals. Commercially based, profit-bearing open access journals are also freely available from DOAJ. It is these journals, produced by BioMed Central and the Public Library of Science, that have been attracting the most media attention. Although these are commercial publishers, they are nonetheless committed to making research freely available to all readers. They rely upon author charges to meet publication costs and produce sophisticated open access products in the science and biomedicine fields that have been shown to compete with the citation ratings of prestigious high-quality subscription journals (BioMed Central 2004).

Who pays?

The radically different business model of these publishers turns that of the traditional journal upon its head: the publisher covers its costs and creates sufficient surplus by charging authors in order to make journals free for all readers. While any individual may submit a manuscript and pay a standard article processing fee, BioMed Central also offers universities and other organisations the possibility of paying an institutional annual membership fee. This upfront payment means that any affiliated member of that institution is relieved of author charges for publishing in any of over 100 biology and medicine journals produced by BioMed Central. Authors in countries with a GNP of less than $1,000 per capita are exempt from publishing charges. Other developing countries are charged a highly discounted fee.

The vision of the open access movement is that in time all journals will transfer to the author pays model. For this reason, it is important to examine the system of payment in detail. Information available from the BioMed Central website[8] advises that, in a few years, the flat institutional membership fee will be phased out. In its place, an institution-specific annual fee will be calculated based on the number of BioMed Central articles the institution published in the previous 12 months. For example, if an institution's scholars published a total of 50 papers in BioMed Central's journals within a given year, the following year's membership fee would be calculated at 50 times the standard article fee ($550 per article), resulting in an annual membership fee of $27,500 per annum. It is generally accepted that this article fee is actually well below the actual per article production cost. BioMed Central's article fee is subsidised by sponsorships from research councils and philanthropic foundations that seek to boost uptake of open access. Studies (King & Tenopir 2004; Wellcome Trust 2004) show that the costs of publishing online range widely from several hundred to several thousand dollars per article, depending on variable costs arising out of differing value added services. As a further example, The Public Library of Science has costed its article charges at $1500.

It would appear that, in its pursuit of eliminating subscription fees, the open access movement is not about to abandon hard-headed realism and is seeking realistic mechanisms to recover costs and generate revenue. Because it is anticipating a future in which all journals are toll-free, open access needs to find a sustainable business model that can support the complex variety of journal offerings.

The economic viability of open access

Independent financial analysts have pronounced the Author Pays business model to be viable.[9] In determining the economics and sustainability of the open access vision, it is important to keep one's eyes fixed on the overall system benefits rather than focus narrowly on article costs. The chief benefit is naturally the free availability of published research for advancing knowledge, but there are other vital gains for a variety of stakeholders. A consultant for JISC, the centrally funded IT support group for UK universities, has identified these as follows (Friend 2004):

- Authors gain from higher numbers of citations (arising out of greater exposure), receiving greater acknowledgement of their work, in turn promoting their professional advancement;

- Funding agencies achieve greater effectiveness for the research they fund, in terms of greater opportunities for technology transfer and innovation, which in turn benefits the business community and society more generally;

- Publishers benefit by enjoying a more secure income stream, as the costs of producing each issue would be covered through upfront author charges.

However, for the first time, publishers will have lost their pricing power. Under open access, they will need to compete with one another to attract author manuscripts in order to bring in revenue. This is completely contrary to the current situation where authors compete for journal space. The BNP Paribas study (2003) anticipates that authors will "shop around" for open access journals that offer the most impact, faster publication speed and competitive article charges. In this way, authors regain control over the cycle of production.

Author charges will also serve to expose authors to the costs of publishing from which they are currently shielded by virtue of library subscriptions. The Wellcome Trust study points to the market failure within the current structure of the publishing market, which actually operates as two mismatched or non-aligned sub-markets. The *academic sub-market* comprises the scholars that read and write articles. Researchers give away their copyright in order that their work can be disseminated. The most important criteria for the academic market is the impact of research and the value accorded to it in terms of citation rates. The *commercial sub-market* comprises the publishers and libraries and operates on price structures and profit margins. The normal market forces of supply and demand that serve to control price structure in other commercial industries do not come into play. This is because publishers hold absolute monopoly over

the copyright that authors assign them and there is no other route to access the published article except to pay licence fees or subscriptions. The pursuits of these two sub-markets are incompatible. Essentially, the dictum for academics is "publish or perish" while for publishers it is 'profit or perish'.

How do authors charge work?

Under the open access system of author charges, it is likely that all prospective authors will pay an initial nominal *submission fee* that will cover the costs of peer review. Submission fees would also serve to raise the general quality of submissions. Successful authors will then pay a larger *publication fee* to cover production costs. Traditionally, a higher rejection rate (e.g., the 80 per cent rejection rate of *Nature*) signifies a high quality or prestigious title, which comes with an expensive price tag as subscribers bear the cost for the editorial exclusivity of the journal. Under the open access system, this cost is spread amongst the submitting authors. Ironically, publication fees would be lower where there is a high level of rejection – as they would be cross-subsidised by the increased number of submission fees. This is demonstrated in Figure 1.

Figure 1: Increased number of submission fees lowers the overall publication fee per article

Article Fee
= $ 1500

Publication Fee
= $ 625

Submission Fees
$ 175 x 5
= $ 875
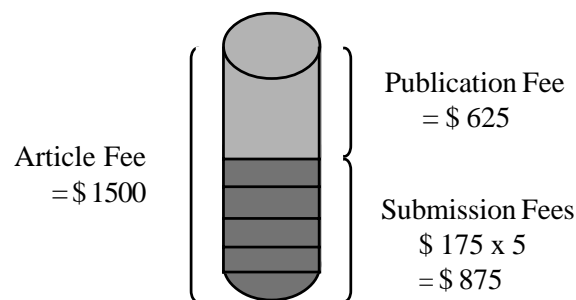
While authors may have previously been exposed to page fees charged by traditional journals, figures of this order start to appear as a disincentive to publish. How will author charges be funded? A recent JISC survey targeted two groups of authors – those that had either published, or not published, in an open access journal. The aim was to explore and compare the publication experiences of the two respective groups. One of the questions

asked the respondents was who should be liable for the article charges under the open access system. The chart at Figure 2 is reproduced from the survey. Regardless of whether they support or do not support open access journals, the authors concurred in their ranking of agencies that should subsidise publishing charges. It might be that well-funded disciplines use research grants, while the less-supported disciplines rely on institutions to pay the fees. This table shows there are a number of potential sources for article fees. By spreading the cost of the publication fees, no single entity has to bear the full load. This refutes the sceptics' charge that article fees merely shift costs from reader to author and that institutions will accordingly not realise any savings.

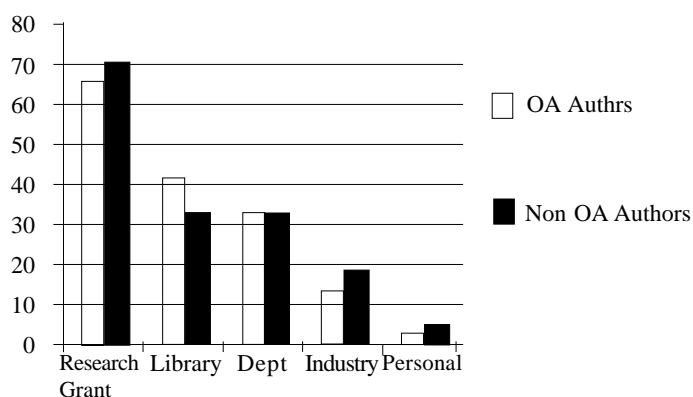**Figure 2:** Where authors think open access publication fees should come from (JISC/OSI 2004:47)

Figure 3 provides a rough overview of the overall costs of scholarly communication under the 'reader pays' and 'author pays' models and the associated liabilities or savings that these afford.

Under the reader pays system, there is no differentiation between richer and poorer countries. All institutions in all countries must pay subscription charges or licence fees with highly restrictive terms for usage. The net result is many excluded readers. Under the author pays model, there is recognition for the varying resource levels available within the research systems of different countries. Authors in developed countries are liable for article charges that are sponsored by a range of sectors. The result is open access for all readers.

Figure 3: Comparison of costs under Reader Pays and Author Pays models

* *Wellcome Trust: 30% overall saving*
* *BNP Paribas: 40% overall saving*
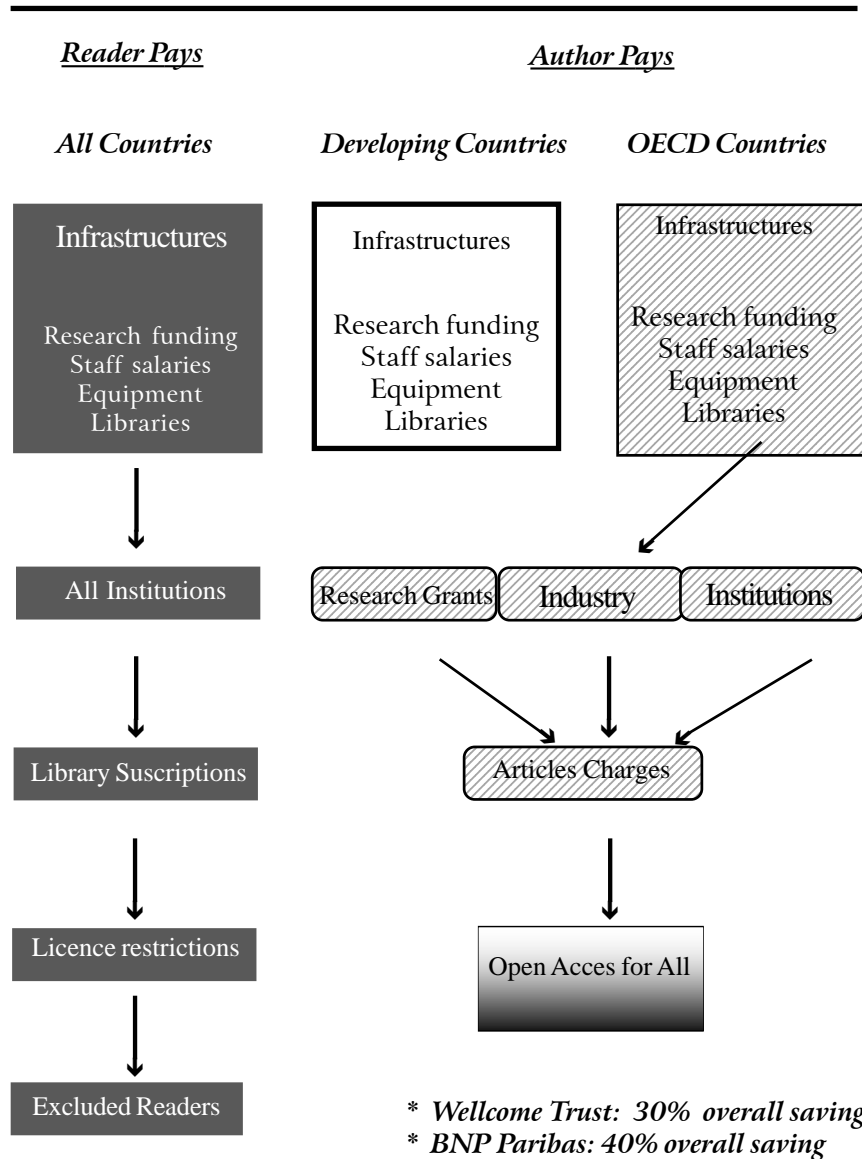
In an article in the *Times Higher Education Supplement*, the Director of the Wellcome Trust, a major patron of biomedical research, has announced that the open access system could bring overall savings of as much as 30 per cent (Walport 2004). This is also borne out by the BNP Paribas study which compared the current annual cost of scientific journal subscriptions of three Ivy League universities against the calculations of author charges for the annual number of published articles produced by each of these institutions. While the overall savings depends on the number of articles published by an institution (and the system would appear to weigh against institutions that produce more articles), the BNP Paribas study concludes that 'the global scientific research community could save more than 40 per cent in cost by switching entirely to an open access model.' (Suber 2003). The same study concludes that, while open access journals currently account for less than [3] per cent of published scholarly output, there is a 50 per cent probability of a shift to open access within 10 years.

Moving towards open access

We are facing a transitional period that presents a hybrid environment in which both reader pays and author pays options are available. Within this kind of environment, institutions will be liable for both traditional subscriptions and author charges. The longer this condition persists, the longer it takes to realise the predicted overall savings. Prolonging this situation might lead to a paralysis of the drive towards universal open access. At the same time, it should be recognised that the strong presence of a competitive agency has already won some concessions from major publishing corporates like Reed Elsevier and Oxford University Press. The former has just announced that its published authors may deposit copies of their articles in their institutional repositories, while the latter has converted one of its prestigious journals to open access. Publishers of traditional journals are beginning to examine routes to converting subscription journals to open access. One transition model is for existing branded journals to offer authors the option of paying article charges to make their articles open access within the regular issue. Readers that receive table of contents alerts would be able to access those articles immediately, even if they were not licensed to read other articles within the same issue.

It appears that authors and librarians are prime change agents, hence the importance of advocacy and educating these groups. A promotional brochure of the open access movement (*Create Change*)[10] urges scholars and librarians to actively pursue and promote open access channels within their institutions and lists concrete measures they may take to pro-

mote the rapid and efficient transition to open access publishing. The website provides tools and an advocacy kit similar to those encountered on social movements' websites. For example, sample letters that may be used to resign from editorial boards or as a referee of journal articles, press releases, advertisements for campus newsletters, as well as a PowerPoint presentation. Because the Association of Research Libraries sponsors the *Create Change* site, there is a heavy emphasis on educating librarians on how to run an advocacy campaign. The objectives of such a campaign are to make faculty and administrators fully aware of the developing crisis in the scholarly communication system, to provide information on journal costs, journal use and cost-effectiveness, and foster understanding of library decision processes and to engage their support in those processes (e.g., large-scale journal cancellations), and to stimulate informed discussion on issues such as copyright. The library sector should be teaching users about the benefits of open access publishing and listing and highlighting open access journals in catalogues and databases.

Barriers to the uptake of open access

Several fundamental obstacles need to be addressed before any significant transition towards the author pays model will be seen.

Academic reward system

The behaviour of authors is conditioned to a very high degree by the academic reward system. Publication is a central feature of academe and plays a vital role in the reward structure of academic rating of individuals as well as institutional ranking. An important condition for the widespread acceptance of open access journals would be their recognition and accreditation by institutional, national and international councils and bodies that have the power to influence decisions about faculty tenure and promotion (Bjork 2004).

Without explicit recognition and validation of open access journals, academics have little incentive to publish their work in relatively unknown journals. What is required, therefore, is a systematic evaluation of the quality and impact factors of open access journals.

Quality

An enduring perception about open access journals is that they are less rigorous, lack stringent peer review, and that the whole notion of author payments presents a conflict of interests that undermines the integrity of selection (JISC 2004). Any journal's success depends upon authors choosing to submit their research to it for publication. If a journal has a

reputation for publishing poor work, it will not receive submissions. For this reason, open access journals have every incentive for accepting only high quality research.

Quality is largely measured by impact factors such as citation analysis. Although most open access journals are relatively new, some have begun registering impact in the citation analysis provided by the Institute for Scientific Information (ISI), which is currently the main metric for assessing impact. Dissatisfied with the limited selection of just 2 per cent of open access journals in ISI's latest release, Harnad and Brody (2004) have undertaken a large statistical study that compares citation counts over a decade for journal articles that are concurrently freely available over the Internet with the citation counts for articles appearing in the same journals, but that are not open access. This kind of empirical study will be vital for establishing the reputation of open access journals.

Author charges

Scholars now have to make ideological and economic choices about where to place their articles. Authors may wish to support the principles of open access and be attracted by such benefits as faster publication speed and wider visibility, but, without financial support, would be inclined to submit articles without charge to subscription journals. On the other hand, a decision by funding institutions to support author fees would speed the transition to open access. Furthermore, if these bodies were to mandate open access publishing channels (journals or repositories) as a precondition of research funding, this would begin to institutionalise open access and author charges as a practice. It appears that this level of commitment is still some way off. The House of Commons Scientific Publications final report pronounced that, based on the evidence provided to them, the author pays model appeared to be viable, but the committee would not endorse the model without a comprehensive independent study into the costs associated with author pays publishing.

Digital divide

A critical barrier to the uptake of open access could be the prospect of the limited impact that it would have on the very region that might potentially benefit the most. The promise of unrestricted access to all scholarly research is muted by the fundamental connectivity problems that face most campuses in Africa. These are the lack of reliable electricity supply, limited access to networked computers, slow response caused by inadequate bandwidth, and the lack of sufficient IT professionals to respond to system level problems.

Part of the strategy of the open access proponents must include campaigning for ICT development in developing countries. Growing worldwide consensus over the importance of ICTs in addressing development issues suggests that considerable resources will be directed towards supporting access to the Internet in Africa, especially to research and teaching organisations (Jensen 2003). Self-directed efforts, including the development of national ICT policies, deregulation of the telecommunications sector, decreasing costs of hardware and bandwidth, growth of regional networks and institutional-level prioritisation have already begun to make a difference.

In his article on the evolution of the Internet in Africa, Jensen draws attention to major infrastructural projects that should help reduce international bandwidth costs. These include fibre optic and submarine cable links and satellite capacity to deliver faster two-way electronic transmission. He also points to the use of VSAT as a cheaper and efficient means of providing telecom based services that are independent of terrestrial infrastructure.

Impact of open access journals in developing countries

Strengthening national science systems

Can open access journals plug the gaps in the local research culture? Desirable as it is, mere physical access to global scientific information is not sufficient on its own to advance local knowledge production. Besides IT connectivity, consolidation of human networks and partnerships is also necessary for the development of a strong research culture. The internal dynamics of a national science system needs active nurturing for this culture to take hold. This nurturing requires government policies that favour the creation of research communities. Briefly, such policies might include the linking of doctoral programmes with the productive sectors, networking of local scientific groups with their international peers, encouraging «brain gain» practices that attract foreign scholars and reverse the migration of nationals, or enhancing the incentives for industry and agriculture to work collaboratively with scientists in the universities (Forero-Pinedo & Jaramillo-Salazar 2002: 138).

South-North information flows

That said, the realities of the present structural imbalance between the South and the North means that local scholars experience considerable difficulty when they attempt to intersect with international scholarly networks. The open access movement explicitly pronounces that its goal

is to promote wider sharing of scientific knowledge. Whether open access would be able to shift the inequalities of the relations between South and North in terms of bi-directional scholarly communication flows is moot. Access by local scholars to the newest ideas would start to eliminate the previous pattern where manuscripts from Africa were routinely rejected because they presented outdated concepts and arguments. While concessions for author charges for developing countries have been built in to the business model as a fundamental principle, sceptics might view this concession as a new artificial barrier that inclines publishers against selecting manuscripts emanating from the south because they do not generate revenue.

Scholarly society journals
From the perspective of the African publisher, author charges are immediately not feasible as they are not in a position to waive these for local authors or to offset these losses through charges to international authors, as these account for a very minimal input.

The mission of the scholarly or professional society is to advance knowledge within the academic field it represents and to promote the work of society members by disseminating their articles to a wide readership. Teferra (2003) has recently reported on the difficulties associated with scientific communication in Africa. His study of the research environment reveals a shrinking community of researchers bled by brain drain, shrinking state funding and inadequate research facilities and salaries that lead many to abandon research. Those that remain are over-burdened with teaching and administrative loads that do not allow for reading and writing. The net result is that local journals experience a scarcity of high quality input. Teferra's survey of African scholars affirmed that 70 per cent value the contextual relevance and applied knowledge of local journals. But the survey respondents also acknowledged the weaknesses of these same journals: limited breadth and coverage, lack of visibility, and irregularity.

Such summations are repeated in other reports on African journals (Zeleza; Zell; Altbach in Altbach & Teferra 1998). The platform of open access cannot roll back fundamental deficiencies in regional infrastructure and research systems or of itself generate quality. The benefits it offers are greater visibility, readership and consequently greater impact. Lor (2004) has pointed out that the World Wide Web browsers are bias-free and will find relevant articles regardless of their origin or source, especially when articles are gathered in archives that use the Open Archives Initiative tools and metadata systems.

Visibility of local knowledge

Publishers of local journals could obtain greater international exposure of their good quality work by participating in the DOAJ. Virtually all the African bioscience journals currently contributing to the Directory are produced via BioLine International. This non-profit agency is committed to providing open access to quality research journals published in developing countries. The website aggregates journals from Brazil, India, Indonesia, Kenya, South Africa, Uganda and Zimbabwe. An explicit objective is to fill part of the gap of South to North knowledge flows. [11]

The website of one of the contributing African publishers declares that it 'provides free access to research information to the international community without financial, legal or technical barriers. All the journals from this organisation will be freely distributed and available from multiple websites.' [12] Another participating society journal advises that '(t)he journal is published on a page sponsorship basis', [13] suggesting they have incorporated author charges as a mechanism for sustainability.

Contributing a journal to DOAJ presumes that each journal already has a website. Local journals that are still working towards that platform could avail themselves of the free open source software designed for this purpose by a project called Open Journal Systems. [14]

Open journal systems

This initiative is based in Canada and aims to assist journals to become online (and open access) by providing a journal management system that requires little or no technical expertise but produces a professional online product. Some of the features of Open Journal Systems are designed to ease the burden of the publication process. There are facilities for online submission of articles or reviews, online management for each stage of publishing that allows editors to track the editorial and review process, and automatic e-mails for notification and acknowledgement. The system also has an automated system for creating metadata records that conform to the Open Archives Initiative protocol. In this way, all published articles are retrievable via Google or other meta-searchers. Open Journal Systems also supports the kind of value-added features of electronic journals, such as the facility for readers to sign up to receive e-mail notification of the table of contents for each issue. Readers may also post comments to articles and join in discussions.

If a society were to convert to an open access policy, would this mean the end of subscription fees? What kind of cost recovery mechanism could societies hope for? Since many individuals and organisations prefer to

keep a hard copy of a journal, societies might continue to provide print copies to paying members. The low cost of membership generally charged by most societies is not prohibitive, and while individuals enjoy the economic benefits of membership, they are also motivated to join societies to further the other aims of the body, which often include mentorship, professional development, workshops and conferences.

Conclusion

Whatever the final outcome of the present debate, open access is succeeding in disturbing the power relations that have shaped the traditional practices of the cycle of scholarly communication. It seems that several eventual scenarios are possible, though the continued availability of both subscription and author-pays models does not provide the savings so desperately needed. An interesting philosophy that supports the hybrid model has been outlined by a mathematician (Burdzy 2002), but could be generalised for all disciplines.

Burdzy declares that publicly funded research articles should be available to the public as freely as 'tap water'. This works on the assumption that public money is used to provide safe and cheap drinking water to most people. In the same way, publicly funded foundations, universities and the government should create 'reservoirs' or repositories that provide journal articles in their unrefined form. The appearance of these articles would only be as good as the participating authors choose it to be.

Burdzy also reminds us that people have a choice whether to drink the free tap water or to buy bottled water. He proposes that the role of commercial and non-commercial publishers should be to produce and distribute an upgraded version of the product found in repositories, analogous to 'bottled water'. This would be an enhanced version of research articles, with elegant typesetting and linking to other articles. He points out that the price of bottled water cannot be too high as long as everyone has access to tap water.

The comparison of information to water is attractive and apt. We all need water and information in order to survive and flourish, and we are aware that the terrain of Africa and its research culture is generally dry and subject to harsh environmental conditions. It is vital that our 'water' (information) is conserved and promoted, both to sustain the local environment and so that it may refresh international thought. However, the assumption Burdzy makes about the free availability of drinking water points to the chasm that separates the developed world from our immediate experience. Access to clean running water is a basic human right that is

denied to many in Africa. The open access movement is attempting to open the floodgates to allow the free flow of information, but without the taps or reservoirs here, Africa may remain very thirsty.

Endnotes

1. Mosaic, the first graphical Internet browser, was released in April 1993, followed by Netscape one year later (Okerson, A. 2003).
2. Suber, P., 2004, 'Timeline of the Open Access Movement.' http:/www.earlham.edu/~peters/fos/timeline.htm
3. The texts of each of the public declarations are usefully gathered at http://www.scidev.net/quickguides/index.cfm?fuseaction=keydocs&qguideid=4
4. Open Access to US Government work urged. [Online] http://www.biomedcentral.com/news/20040721/01
5. http://www.openarchives.org
6. This is Recommendation 44 in the Conclusion and Recommendations of 'Scientific Publications, Free for All?' written by the Science and Technology Committee (2004b).
7. http://www.doaj.org
8. http://www.biomedcentral.com
9. BNP Paribus and Citigroup Smith Barney are two companies cited in P Suber (2003). See also Wellcome Trust (2004).
10. Available from http://www.createchange.org/home.html
11. http://www.bioline.org.br
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nologies, we have formed consortia, regional and international associations and other cooperative networks in order to pool resources and to learn from one another. One of the benefits of enhanced communication technology is that there is a more pervasive communitarian sense of a global fellowship -- that we can derive progress from collective effort. ICT has thus paved the way for greater efficiency and collaborative learning

In academic publishing, we have only evolved halfway towards achieving the benefits of the electronic age. The publication processes have been automated and the products are digital, certainly in a drive towards greater efficiency. Publishers have exploited Internet technology to link articles and citations in databases that span wide areas of knowledge. These facilities offer great convenience and those that have desktop access to them certainly save time. But we are not yet saving money. The widely anticipated financial savings that was forecast for the electronic medium has not come about; instead, we are finding scholarly journals to be more expensive. Publishers who have invested millions in developing electronic platforms have undoubtedly passed on the cost to subscribers. Academic libraries across the world have been forced to cut journals even as they spend more on them. So, electronic publishing has achieved some time efficiency but at a greater financial cost.

Open access publishing aims to achieve not only the efficiency factors of time and money, but also to advance the progressive dimension of sharing and collaboration towards a collective public good. While no one would contest this worthy aim, there is a flurry of debate and growing tension around the notion of open access publishing at the moment. The reason for this free for all is that open access presents a real possibility of destabilising a publishing tradition that has been with academe for over two hundred years. On one side, a group of advocates steadfastly claims that open access can overcome the ills of the serials crisis and liberate scholarly information; on the other side, we find the representatives of a $3.5 billion industry whose interest is in maintaining the profitable status quo, flanked by non-profit publishers who play the quality and integrity card, but whose survival is threatened. In between are the policy makers and government agencies that have the power to regulate the industry by weighing in their considerable support where they see the greater efficiency and public good.

The development of open access publishing

There is no doubt that the Internet has been the catalyst for open access. Alongside the transition to electronic subscription journals, we have seen a growing diversification of electronic publications, each of them parallel

Digital Publishing and Open Access for Social Science
Research Dissemination: A Case Study

Eve Horwitz Gray*, Francois van Schalkwyk**
and Karen Bruns***

Abstract

This case study charts the planning and implementation of a digital publishing programme over a three-year period at the Human Sciences Research Council, a large South African social science research body. This paper places the case study in the context of research dissemination in South Africa and Africa and reviews new publishing approaches, including electronic publishing and Open Access. It then charts the three phases of the consultancy — investigation, recommendations and implementation — and, at each stage, examines successes and failures; the problems encountered; and how they were addressed. It deals with the following challenges faced by African scholarly organisations wanting to use digital media to disseminate their research findings:

   i.   Finding the right strategy, copyright model and business plan for the digital publishing programme;
   ii. Selling this strategy to the research community and overcoming academic conservatism, entrenched as it often is in traditional ways of publishing;
   iii. Finding the right mix of technologies (in this case, online content dissemination linked to print-on-demand);
   iv. Managing the technical and organisational process of getting a digital publishing programme up and running; and
   v.   Ensuring effective promotional and distribution strategies – a matter of overwhelming importance in ensuring the success of a digital publishing programme.

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The findings of this study will stress the importance of the strategic choices made. In particular, the organisation found that it could use digital media to build the reputation of the organisation. The Open Access copyright model adopted by the organisation allows for the accessibility of primary source information, while at the same time couching and developing the reputation of the organisation.

The case study will examine how applicable its findings are to other countries in Africa. In particular, it will explore the limitations of digital dissemination in a South African context and identify the ways in which a multi-pronged approach, using digital, print, e-mail and fax, can most effectively reach a wider market. The conclusion is that this multi-pronged approach can be an effective way of ensuring the international reach of Africa scholarship.

Résumé

Cette étude de cas porte sur la planification et la mise en œuvre d'un programme d'édition numérique au cours d'une période de trois ans au Conseil de recherche en sciences humaines, un grand organe Sud-Africain de recherche en sciences sociales. Ce document place l'étude de cas dans le contexte de la diffusion de la recherche en Afrique du Sud et en Afrique, et examine les nouvelles approches d'édition, notamment l'édition électronique et le Libre Accès. Il décrit ainsi les trois phases de l'étude– l'enquête, les recommandations et la mise en œuvre- et, à chaque étape, examine les succès et les échecs, les problèmes rencontrés et comment ils ont été abordés. Elle aborde les défis suivants rencontrés par les organisations de chercheurs africains désireux d'utiliser les médias numériques pour diffuser les résultats de leurs recherches:

i. Trouver la bonne stratégie, le modèle de droit d'auteur et le plan d'action du programme d'édition numérique;

ii. Faire accepter cette stratégie par les chercheurs et surmonter le conservatisme universitaire, enraciné comme il l'est souvent dans les modes traditionnels d'édition;

iii. Trouver la bonne combinaison des technologies (dans ce cas, la diffusion de contenu en ligne lié à l'impression à la demande);

iv. Gérer le processus technique et organisationnel de mise en œuvre et d'exécution d'un programme d'édition numérique; et

iv. Assurer l'efficacité des stratégies de promotion et de distribution - une question d'une importance capitale pour assurer le succès d'un programme d'édition numérique.

Les conclusions de cette étude permettront de souligner l'importance des choix stratégiques opérés. En particulier, l'organisation a constaté qu'elle pourrait utiliser les médias numériques pour bâtir sa réputation. Le modèle du droit d'auteur du Libre Accès adopté par l'organisation permet l'accessibilité de la première source d'information, tout en formulant et développant sa réputation.

L'étude de cas examinera comment ses conclusions sont applicables à d'autres pays d'Afrique. En particulier, elle va explorer les limites de la diffusion numérique dans un contexte Sud-Africain et identifier les moyens par lesquels une approche concertée, utilisant le numérique, l'impression, le courrier électronique et le fax, peut toucher de façon beaucoup plus efficace un plus large marché. La conclusion est que cette approche concertée peut être une manière efficace d'assurer la portée internationale de la recherche en Afrique.

Introduction

This case study focuses on the development of a new publishing strategy for a large social science research council in South Africa, the Human Sciences Research Council (HSRC), and is presented as a practical example of the implementation of a parallel electronic Open Access and print publishing programme in an African research institute.

The HSRC

The Human Sciences Research Council is South Africa's statutory agency dedicated to the social sciences. It is the largest social science research organisation in Africa and plays a leading role in the fourteen SADC countries and elsewhere in Africa. It currently employs around 150 full-time researchers in 10 research programmes. The HSRC undertakes both contract and grant-aided research for a range of users, including:

- Government departments at national, regional and local level;

- National and international funding agencies; and

- The private sector and universities.

At the commencement of the consultancy intervention, the HSRC had appointed a new President (later renamed CEO), the prominent sociologist, Mark Orkin, with a brief to continue and complete the process of transforming the organisation from its Apartheid past. This was an uncomfortable legacy, as the HSRC was perceived during the Apartheid years to have all too often been a mouthpiece of the Apartheid government. Transformation, therefore, required not just a change in the demographics of the organisation, but of its image and its research integrity. One of the questions this paper will address is the contribution made by a renewed publishing programme to the success of this transformation exercise.

As a result of financial constraints in the higher education section and of the demands of neo-liberal market approaches being promoted in higher education policy in South Africa (Kraak 2000; Subotszky and Cele 2004;

Moja 2004), the HSRC needed to move from reliance on predominantly state-funded financial support to much greater reliance on contract research. The target that had been set was for 60 per cent of the HSRC's research projects to be generated from contract research, something that required high levels of entrepreneurial skills not always present in academic institutions. At the same time, this entrepreneurial requirement was clearly articulated within a developmental framework requiring the HSRC, as a national research body, to be responsive to the country's critical needs and to national policy imperatives. This is an interesting nexus and an important one, as Subotsky and Cele articulate it:

> Given the new democracy's dual development challenges – addressing the basic needs of its majority poor as well as enhancing the nation's emerging engagement in the new global economy – the question of the appropriate form(s) of knowledge to support these demands is a critical one, as it is for all African and other developing countries (Subotszky and Cele 2004).

This was recognised in the consultancy report for the new publishing structure:

> The HSRC's new strategic direction involves 'reshaping itself as a flexible, efficient, sustainable, representative and professional organisation that undertakes independent, collaborative, policy-relevant social research to inform social and economic policy.' Social-scientific knowledge management is seen as a key underpinning function. Any publications policy has to fall in behind this strategy and help to deliver its goals (EG&A consultancy report 2001).

The strategic goals that the HSRC formulated for the transformed organisation under Orkin's leadership reflect this dual challenge:

- To produce research that makes a difference – the measurement of research impact became of primary importance;

- To increase research effectiveness and enhance research excellence;

- To grow research services by attracting new tenders;

- The modernisation of infrastructure and information systems, applying knowledge management systems.

The Consultancy

The consultancy undertaken by Eve Gray & Associates for the formulation and implementation of a new publishing strategy was responsive to these imperatives. The approach taken was coloured by the common background of the consultants in commercial publishing, albeit not always in very commercial branches of publishing: university press and anti-Apartheid 'Struggle' (political/conscientising) publishing. What this meant in practice was that the questions asked and the solutions sought were driven by an understanding of the primacy of marketing (in the broadest sense) and the need for financial viability (a nice irony when the solution offered is to give products away free of charge). Moreover, in formulating strategy and implementing solutions, our aim would always be to balance the three imperatives of the classic strategic business management triangle:

Time

Quality   **Money**

Our presumptions were, therefore, that there would have to be efficient and professional systems and services to create published products that reached their target market quickly; that production standards needed to be of the highest affordable quality, to reflect the standards of research excellence in the organisation; and that costs would need to be realistically controlled and matched to the benefit to the organisation gained from publication (an interesting challenge in an Open Access publishing model, where the direct benefits are not necessarily financial).

Critically, however, the consultancy team recognised that any new publishing programme had to be responsive to national developmental goals, with the implication that published products had to be readily accessible to their target readership and had to be capable of delivering the real research impact that was so central to the HSRC's mission. While key markets were government policy-makers and local and international clients:

> The HSRC's product is research. It is a knowledge generator, funded in part by the public sector. It has the responsibility to disseminate that knowledge to the wider public in an accessible and affordable way. The term 'wider public' is in reality a misnomer. The reality is that the HSRC produces knowledge for a limited niche market comprised essentially of government; the NGO sector, the academic community and business, nationally and internationally (HSRC Discussion Document 2001).

However, HSRC publications also had to reach broader markets, leading to a debate about the extent to which publications would need to be generated that popularised research output.

We were aware at the outset and became even more aware over time that the market impact of a successful research publication programme did not reflect only on the research organisation, but also on the status of South African social science research and, by extension, of research out of Africa.

This paper places the case study in the context of research dissemination in South Africa and Africa and reviews new publishing approaches, including electronic publishing and Open Access. It then charts the three phases of the consultancy — investigation, recommendations and implementation — and, at each stage, examines successes and failures; the problems encountered; and the way these were addressed. We do so in the expectation that this might shed light on similar experiences in other institutions and might thus help inform further developments in African scholarly dissemination.

Background

Scholarly publishing in South Africa

Although South Africa has a large and well-developed publishing industry compared with the rest of the continent, scholarly and research publishing shares the problems and pressures common across the world and most particularly in developing countries.

At the time of the HSRC investigation, according to a parliamentary report by the Council on Higher Education, the predicted growth in the tertiary sector in South Africa had instead turned into a massive decline, with more than 100,000 fewer students in the system than predicted in 1995. Instead of a 4 per cent growth in student numbers, from 570,000 to 710, 000 student numbers had dropped to 560,000. At the time of writing, in 2004, the South African government had just announced the imposition

of further deliberate reductions in the numbers of students in the tertiary institutions because of financial constraints.

As a result of such trends, the higher education sector as a whole was at the start of the consultancy, and remains now, under severe financial pressure, something that has affected scholarly and university press publishing. While the essential mission of a university press is to publish works for and by academics, and to keep alive scholarly debate in the community, this had become increasingly problematic in the absence of real markets for university press books. While South African academics were keen to publish, they seemed much less keen to buy locally produced academic books. This might well have been part of an international trend, in a market that had become over-traded with university press books. But the major problem was, and remains, that the markets are simply too narrow (Molteno 1997: 49). There are not enough universities and colleges, not enough libraries willing to purchase such books; nor enough serious readers in the community with enough interest to buy serious books to make such publishing projects economically viable.

This decline in demand for locally produced scholarly works was, and continues to be, aggravated by a steady trend in academic bookshops away from stocking anything other than mainstream undergraduate textbooks. This has meant an equivalent decline in the clientele of academic bookshops, as academics are less and less likely to visit a campus bookstore that does not stock the titles they are looking for.

In a 2001 publication, Eve Gray summed up the situation as follows:

> There has been a movement, therefore, towards a more and more general market for university press books, rather than a specifically scholarly market. This has been accentuated by the inability or reluctance of the universities to subsidise scholarly publishing, in the face of a steady decline in government funding. As a result, university presses have sought markets among more general readers. Over the last fifteen years, therefore, as a result of a combination of causes, there has been an ever-decreasing market for purely academic writing. The specialist academic monograph, in traditional book format, given its small print run and the particular resistance in South Africa to high prices, cannot be published without subsidy, and the under-funded universities are reluctant to put any subsidies into making African research available. The academic monograph in Africa is under siege, probably ahead of the rest of the world, where it is becoming a threatened species, probably killed by the 'publish-or-perish' syndrome and its resultant market glut (Gray 2001).

South African university press publishing had, therefore, been taken over by a rhetoric that preached a commercial market approach with concomitant demands for commercial viability. While South African universities were responding in a number of ways to the demands of the marketisation of higher education policy by attracting private funding to ensure their own survival, they had apparently failed to appreciate the power of scholarly publication to profile the organisation and ensure competitiveness, locally and internationally. This lesson had been better understood by a number of scholarly NGOS that were using a research funding to distribute scholarly information — either self-publishing or using commercial publishers to produce subsidised research publications.

Because of these trends at the time of the consultancy and to date, scholarly publishing in South Africa has become marginalised and scattered, with university press output reduced, journals struggling for survival in university departments or outsourced to overseas publishers, and research publication spread across a variety of research units and NGOs, mostly with limited distribution capacity.

The question that arose in the HSRC consultancy was how the organisation could break out of this negative environment to ensure effective dissemination of its research output to its local and international readers and stakeholders.

African scholarship in the world

The Great Divide – African consumption of scholarship
The broad backdrop against which this study plays out is that of the ongoing struggle to get the voice of African-based research heard across the continent and in the powerful countries in the North that dominate academic discourse. It is well known that the distribution of books and the dissemination of online content are heavily skewed towards the North, with African countries playing the role of consumers of content rather than disseminators. For example, African countries consume around 12 per cent of the books produced in the world, but produce only 2 per cent themselves (Wafawarowa 2000).

Scholarly publishers are very familiar with the geographical, commercial and cultural barriers that have in the past inhibited the flow of African scholarship to the rest of the world. The cost of distributing printed books; transport costs and tariff barriers; slow delivery caused by the vast distances to reach market; the difficulties of finding a toe-hold in markets geared to dominant local products – these are all too painfully familiar to South African and African scholarly publishers.

Paul Zeleza sums up the situation cogently:

> The marginality of African knowledge is evident even in the Africanist intellectual system, which is firmly rooted in a western epistemological order and an academic culture driven by a ruthless ethos of 'publish or perish' and consisting of multinational publishing houses, university presses, peer review networks, citation and bibliographical conventions, and has little room to accommodate the alien views, voices, and visions emanating from Africa itself. In this scholarly treadmill, Africa appears nothing more than a research object to verify faddish theories that emerge with predictable regularity in the channel-surfing intellectualism of North-ern academics. And so we get the strange spectacle of books and articles being churned out containing no reference to the scholarship produced in the countries and regions concerned …It is work that often contains the latest bibliographic references to Africanist research and rather dated facts, while the work of African scholars may contain dated bibliographical refer-ences and the latest facts (Zeleza 1997b).

Electronic distribution of scholarly content, therefore, offers a seductive alternative, given the ease and speed with which content can now be disseminated right around the world. The creation of virtual communities with an interest in African studies could very well provide a route to more effective dissemination of African-based scholarship, with at least some potential for reversing the dominance of African studies by publications emanating from the USA and Europe.

The question is whether such efforts have any chance of surmounting the digital divide. The figures are daunting: probably around 33 million Internet users in Africa, compared with 233 million in the US and Canada, 314 million in Europe, and 97 million in Latin America.[1]

Just as stark is the balance of content on the Internet:

> While researchers studying ICT use in developed countries may not identify content as critical, it cannot be ignored in our context. The African continent generates only 0.4% of global online content, and if South Afri-ca's contribution is that excluded, the figure drops to a mere 0.02% (UNECA, in Chisenga, 1999). English remains the dominant language of publication for African producers, despite the fact that English first language speakers comprise no more than 0.007% of the whole African population (Boldi et al, 2002; Czerniewicz and Brown 2004)

However, this may not necessarily mean that scholarly communities would be unable to access digital content. The findings of the UK House of Commons investigation into scientific journals are instructive in this regard:

> There is some concern that digital journals are inaccessible to developing countries, which may not have the technological infrastructure to receive and distribute them effectively. Sir Crispin Davis told us that moving to a digital-only environment "would have the result of reducing accessibility to scientific research because it is only available on the internet. […] globally it would exclude over 50% of scientists". We are not convinced that this is the case. The distribution of paper copies of journals is expensive and requires extensive logistical infrastructure. Digital provision may, in fact, be more suited to the needs of developing countries because it is cheaper and more immediate. Dr Harold Varmus, of the Public Library of Science (PloS) told us that, "while not every worker may have a desktop computer, every institution has a desktop computer and you can download the appropriate articles. […] in a place like Bamako in Mali […] where there is almost no access to papers unless you travel to France or the States, this is a revolutionary change which they welcome with open arms"… The relatively low levels of ICT in the developing world comparative to the West is not an argument against digital journals, rather it highlights the need for further development of ICT capacity to fully exploit the potential of digital technologies. *The digitisation of journals has the potential to greatly increase access to research findings for researchers in the developing world.* (UK House of Commons 2004 – their emphasis).

(Note, however, in this discussion, the all too common perception of Africa as the consumer of research knowledge, rather than as the producer of its own knowledge systems.)

New publishing models

Open access

If electronic publishing offers opportunities for African scholarly publishers, then the potential for the expansion of African research output and consumption could well be enhanced by the adoption of Open Access models of publication or 'author pays' model of journal publishing, in which content is disseminated freely and investment is shifted to the author, research body, or institution sponsoring the research concerned. As Open Access publishing will be dealt with in other papers in this publication, a short summary of the issues will suffice here.

The Open Access publishing model arose from protests in the US and UK scientific communities at the rapidly escalating price of scholarly journals, the stranglehold of the large corporate journal publishers, and a copyright regime that demands cession of copyright, effectively putting the

Intellectual property rights to much scholarly knowledge in the hands of commercial publishers.

The Open Access model is promoted primarily by the Public Library of Science (PLOS) in the US and Biomed Central in the UK. The aim of this model is to reduce costs for the end user, thereby democratising access to scientific research. There has been particular emphasis in discussion of Open Access publishing of its suitability to situations in which publication is the output of publicly funded research.

In the last few years, the Open Access model has gained increasing international attention from policy makers. The UK government has just completed an inquiry into scientific publication and the availability of scientific knowledge (UK House of Commons 2004); the JISC higher education consortium in the UK is surveying Open Access journals and is offering financial support to conventional journal publishers wanting to switch to Open Access. A number of international protocols have been formulated on the topic - the OECD Declaration on Access to Research Data from Public Funding; the Max Planck Society Berlin Declaration on Open Access to Knowledge in the Sciences and the Humanities; the Declaration of Principles of the World Summit on the Information Society; and the Bethesda Principles agreed at the Howard Hughes Medical Institute in 2003.

The Open Access model is, therefore, one that we would argue needs to be considered by any publicly funded research organisation, particularly in Africa, where development goals are of primary importance. It is an increasingly accepted view that where public monies are the source of research funding, the imperative to ease public access is even greater.

Open Access journals are for the moment largely scientific journals and there is debate about the suitability of the model to humanities and social science journals (Sparc 2004). It looks as if 2004 will be the year that the Open Access debate in the US turns to social science journals and it would be apposite for African scholarly publishers to debate the potential for 'author pays' publishing of other scholarly publications, as well as journals, as is witnessed by the debate initiated recently among US university presses about participation in funding scholarly publications (Monaghan 2004).

What needs to be understood, however, is that the adoption of an Open Access approach is not a decision simply to give content away free – in other words it is not free of control, or free of good financial sense. As US copyright lawyer Lawrence Lessig puts it:

> … we come from a tradition of 'free culture' – not 'free' as in 'free beer' (to borrow a phrase from the founder of the free-software movement) – but 'free'; as in 'free speech', 'free markets', 'free trade', 'free enterprise', 'free will' and 'free elections'. A free culture supports and protects creators and innovators. It does this directly by granting intellectual property rights. But it does so indirectly by limiting the reach of those rights to guarantee that follow-on creators and innovators remain *as free as possible* from the control of the past. A free culture is not a culture without property, just as a free market is not a market in which everything is free. The opposite of a free culture is a 'permission culture' - a culture in which creators get to create only with the permission of the powerful, or of creators from the past (Lessig 2004: xiv – author's emphasis).

Such ideas have obvious relevance in Africa, which is so powerfully disadvantaged by prevailing traditions of academic discourse.

Print on demand

Given the low levels of hardware availability and internet connectivity in Africa, as well as the short print runs that characterise the African scholarly market, the availability of print copies of publications in local markets is a distinct advantage. The book remains authentic communication. With the exponential increase in the media, where individuals have to deal with a bewildering number of messages, there is some resistance to inauthentic communication – that is communication that is 'losing trust' – and books provide a profound connection and a certain tangibility of knowledge.

But the issue of access to knowledge remains the conundrum. It might well be that a purely electronic future for African scholarly publishing might be more viable than print (Teferra 1998:54). This would, however, require a revolutionary rethink of the traditions of scholarly publishing.

Given the distances that have to be covered by African publishers in a thinly-spread market and the difficulty of shipping books in Africa, perhaps the industry should be looking at digital text storage and on-line printing as a key solution to its problems of the physical distribution of scholarly dissemination. Internationally, the rapid growth of POD businesses like Lightning Source (which reports high levels of business from scholarly publications) suggests that this could be a workable model facilitating broad reach dissemination in Africa.

Print on demand offers considerable advantages for African publishers. As Hans Zell puts it: 'For African publishers, POD promises benefits that are immediate and cost effective, among them decreases in shipping costs, elimination of the need to maintain large inventories, the ability to

keep backlist titles alive, and the means to deliver titles rapidly to other countries' (Zell 2003).

The case study – restructuring research publishing at the Human Sciences Research Council, South Africa.

The consultancy

In early 2001, Eve Gray and Associates was approached to conduct a survey of the publishing operations of the HSRC and to make recommendations for a reorganisation and revival of the HSRC's publishing structures and strategies. The research brief was for a thorough review of the HSRC's publishing programme, past and present, together with a strategic planning process to establish likely future needs. This would be followed by careful planning to identify available skills and expertise and put in place the structures and resources needed to manage the publishing programme effectively, using in-house staff and outsourced services.

The desired outcome of the research would be a coherent and sustainable strategy for the development of the HSRC's publishing programme, together with a comprehensive operational programme for its delivery and management. The consultancy wanted to ensure that the HSRC took maximum advantage of technological advances that might allow it to meet its information dissemination needs more effectively and cheaply and which could give it greater market reach.

A key underpinning of the research brief, for both the consultants and the CEO, was the acceptance of an integrated market approach to the publications function, so that publication efforts would fall in behind the strategic goals of the organisation, supporting and enhancing its research efforts.

The methodology of the intervention was based on interviews with key informants and analysis of financial and other records, backed by a review of local and international trends and best practice.

The lead consultant was an experienced academic publisher, who had worked in university presses and in commercial academic textbook publishing. She, therefore, brought to the investigation an understanding of the professional standards, production values and commercial approaches of the publishing industry, as well as an appreciation of the dynamics of South African higher education in a transformative phase.

The findings

The state of publishing in the HSRC
The survey revealed that publishing in the HSRC had become decentralised and fragmented after the disbanding of a central publishing department, with individual departments taking on responsibility for producing research reports and publications for their own research area. There was little or no institutional coherence and the impact of publications was dissipated by a lack of overall institutional profiling or market image.

Reviewing the history of publishing at the HSRC, the consultancy found that in the more distant past, publication had not been seen as a money-making function and internal research reports used to be given away to libraries and government departments in print runs of about 100. In the 1980s, however, a new approach had been developed and a university press model adopted, with publications being targeted at a more general audience. The organisation began to view the publication function as at least semi-commercial, but without peer review processes, nor a thorough understanding of the commercial viability of publication, in place. As a result, a publishing department was built up, with a publishing manager at the head. This publisher was, however, seen as an administrator rather than someone with a contribution to make to the development of scholarship. A bookselling and distribution department was created to handle sales of its publications, largely dependent on direct sales to end-users. The HSRC had its own print facilities and handled all functions in-house.

In the process of the organisational restructuring that had begun in the 1990s prior to the consultancy, the publishing function had been considerably reduced and its centralised function dismantled. Publishing was delegated to the individual research departments, with few controls in place. The distribution department remained, but reduced in staff numbers. There was a 'bookshop' department, which was intended to be a wholesaler and retailer of HSRC publications.

The bulk of the titles sold fewer than 50 copies a year, often in single copy or low volume invoices. This added considerably to the HSRC's distribution overheads, as the cost of processing these invoices certainly exceeded the profit margin on the books. In these circumstances, print runs were difficult to manage and there was a high level of stock wastage. This was aggravated by the lack of any centralised control over print buying. Given the sales volumes, the consultancy found that most publications would appear to be candidates for print-on-demand print manage-

ment rather than conventional printing, where print runs under 500 are not considered viable.

Attitudes to publishing

Interviews with research groups revealed that, overall, in the HSRC, publications were seen as the necessary outcome of the research process; a visible manifestation of the project concerned. This would suggest that there was implicitly a non-commercial, yet strategic approach to the publishing functions of the HSRC. However, there was not a coherent approach to funding publications from research grants; rather, the production of a report or book seemed to be 'tacked on' at the end of a project, with some confusion over funding mechanisms and cost recovery.

Further probing revealed that the arguments and motivations from HSRC staff for publishing particular reports and books were often phrased less in marketing terms – the need for the publication in a particular market sector, or the need for the HSRC to project itself in that sector – than in terms of the internal staff evaluation needs of the HSRC and the ambitions of individual researchers. There was a pervasive sense that publishing was a numbers game – researchers and units were judged by and promoted according to the number of publications that they produced and there was considerable store placed on the size of the print run for books published, as a large print run was seen as a sign of a successful publication, whether or not the books sold. As a result, there was considerable over-stocking. This was coupled with an explicit or implicit assumption, which seemed deeply entrenched, that publishing projects should recover their costs from sales.

In this context, the presumption that book sales were a revenue source was to be treated with caution, particularly as any hard-headed financial analysis would conclude that the sale of publications was not a revenue source, but was certainly losing money, when all overhead costs were taken into account.

Researchers were particularly keen to see their books in mainstream bookshops (in the circumstances, an unrealistic ambition) and wanted to be profiled through launches and promotional mailings. There was a conflation of genres, with researchers wanting to produce 'books', which were, however, often research reports produced in book format. Quality standards were very variable, with some excellent work being produced, but also a proliferation of publications that would not have passed muster in a rigorous peer review process.

There was thus a mixed approach to the publishing function in the HSRC, with the semi-commercial motivations that were being articulated

often hiding personal or bureaucratic needs. In general, the idea seemed to be that publications had to be sold and that sales had to cover the base production costs incurred. The HSRC was certainly losing money overall on the maintenance of a sales infrastructure for very small volumes of sales.

Publications were conceived of as print publications – there was no strategy in place for the electronic dissemination of information; this in a context in which all predictions of the future of the academic knowledge market globally forecast a very rapid growth in electronic delivery of content in the academic sector, and electronic content management for flexible delivery had been identified as a key strategic thrust for successful niche publishing.

The market focus of the publishing programme
Books and research reports were being produced in print with production values that differed greatly from department to department. Production of books was for the most part managed through MS Word templates by in-house editors, with the result that they lacked professional quality standards in editorial and production values. Some departments worked with publishing houses to produce high quality and professional publications, but the marketing of these publications did not always profile the HSRC effectively. The publishing programme was completely fragmented, with no coherent centralised marketing focus, no articulation with the research priorities of the HSRC and little strategic impact for the organisation.

The publishing website
Publications were promoted on the HSRC website and in fact occupied a prominent place on the home page. There was no coherent strategy for the management of online content, although one or two research programmes were, on their own initiative, managing online projects, such as the donor-funded Southern African Regional Poverty Network (www.sarpn.org.za).

When it came to evaluating the HSRC website, it was clear that it had, as commonly happens in larger organisations, been created in a void. In other words, the website starkly revealed that it had been created without asking some basic market-orientated questions: Why does the HSRC need a website? What does the HSRC hope to achieve by creating a website? Who is the website aimed at? What will visitors to the HSRC website gain by coming to the site?

The result was a website that tried to be too much to too many; a website that was slow and cumbersome to navigate; a website backed by no marketing or communication strategy; and, not least of all, at a time

when the HSRC was trying desperately to cast off a reputation as a fin-ger-puppet of the Apartheid state, a website dressed in the colours of the old South African flag!

In the absence of a clear strategy and objective for the site, a solid architectural basis was lacking, aggravated by myopic design and inad-equate hosting infrastructure. All this would hamper the development of the site into one that would reflect the strategic shifts taking place at the HSRC.

There was a total lack of centralised strategic thinking about the website. Its development was delegated to the IT department, with loosely controlled input from various research departments and design outsourced to a company with historical links with the HSRC.

The recommendations

The strategy

An integrated market approach was recommended as the cornerstone of a new publishing strategy, with publishing seen as an integral part of the research function. Publishing strategy – what was published and how it was published – needed to promote the research reputation of the HSRC, to establish the value of its research among stakeholders and in the community and to enhance its reputation. The HSRC also needed publications as a marketing tool to attract donors and new clients. The financial rewards earned would not be measured in turnover from book sales, but rather through the contribution made to attracting research funding and contracts and key dissemination measures, such as media outreach.

There would be a three-way publishing strategy, in which the HSRC would continue to provide printed books, but all content would be stored in a digital database/library, which would be fully searchable. The reader would have the choice of perusing documents on screen, downloading it at no cost, or ordering a POD book that would be supplied on a cost-recov-ery basis Creative Commons licenses would be used to manage online content, allowing for free downloads and the right to use content for non-commercial purposes.

The publishing process proposed was, therefore, a flexible Open Ac-cess publishing model, based on digital content management and print on demand. Content would be stored in a publishing content and marketing site (provided by an outsourced provider with substantial server capacity, high bandwidth and guaranteed levels of up-time) linked to the HSRC

website in such a way as to provide seamless movement from one to the other, from the perspective of website visitors.

The consultancy recognised the need to move publication planning back so that it was dealt with in the early stages of research project planning, with the published output of any research project identified at the start of the planning process. It was intended that publication funding be built into the research programme and be carefully planned with the assistance of in-house publishing staff with professional publishing knowledge.

Electronic publishing

In motivating for electronic publishing, the advantages were perceived to be:

- International reach – links to a global readership and international re search sites;

- Access to the research and policy development market, which is wired – even in Africa;

- Lower production costs;

- Greater flexibility – potential for the use of colour and interactivity;

- Appropriateness for highly specialised, low volume products;

- The capacity for updating content;

- The potential for links to abstracting services and research indexes;

- Strong control over branding.

Although some researchers expressed reservations about the digital strategy, fearing that it would exclude readers on the African continent, the general findings were that the academic and research community in Africa is 'wired', while there are substantial barriers to the distribution of printed books between African countries. There is a lot of African Studies information on the Web, but most of it is managed by US universities and the HSRC felt that the time had come for it, as an African institution, to take charge of its own online content. In this way, the HSRC felt it could add weight to Africa's own online research presence.

A content website

It was intended that the content website would contain current publications – research reports, articles, and discussion documents. Access would be provided to archival material and discussion forums and debates would be

set up to attract clients to the site. The site would also contain press releases and promotional articles and links to other research sites worldwide.

It was recommended that promotional materials and marketing content be provided in HTML and publications in PDF format for download for printing.

The control and management of the website was an important issue. Karen Bruns reported:

> If the HSRC is to consider digital delivery of publications and integrate these publications into the central marketing strategy of the organisation, then the design and function of the website becomes crucial. There is an opportunity to explore just-in-time data provision as well as attractive marketing opportunities.

> Website management is notoriously difficult in organisations and within the organogram and line-function is often incorrectly allocated. Website development should report to Marketing, for the imaging and design of the 'look' of the site. The IT department should take responsibility for architecture, capacity, software, etc.

However, there remains a lack of clarity about responsibility for managing, maintaining and updating the content on the publishing website.

Product design and marketing
The imaging and design of publications (online and print) needed to be linked to the branding of the organisation as a whole and products designed to meet the needs of the HSRC client base, reinforcing positive perceptions of the HSRC. The design of publications needed to be linked to a corporate design policy so that publication design, if not identical to corporate design, would have a 'family' identity and/or convey professionalism, credibility and quality.

Marketing and promotions of publications were to be integrated into an overall market strategy for the HSRC. The recommendation was that there should be a close relationship between the publishing department and corporate communications, preferably in twinned directorates reporting to the CEO as key players in the delivery of the HSRC's corporate image and delivery on its research mandate.

The financial model
A new financial model was proposed, with most reports published free of charge and only information with high market value charged for on a subscription basis. If the HSRC wished to earn revenue from its content, it was recommended that it could license HSRC content to online business

information providers. In the latter circumstance, the motivation for paying for content that would otherwise be available free of charge would reside in the value added by the selection and targeting of information for specific client needs.

It needs to be recognised that, in good part, the recommendation for an Open Access distribution model came not only from a recognition of the marketing advantages of free access and the need to provide free access to information developed from public funds, but from a recognition that the conventional publishing model actually cost more than it earned and effectively provided a barrier between the HSRC and its market. Moreover, the democratisation of knowledge offered by the Open Access was in line with the HSRC's mission as a national research council.

Given that the HSRC was also involved in the development of data banks, the consultancy advised that there would be room for the development of interactive data provision to enhance some products.

Print and CD-ROM costs shifted to the customer and these products were to be sold on a cost-recovery basis.

The publishing structure

It was recommended that a centralised publishing department be (re)created, with a Publishing Director and a small staff to manage outsourced services. In establishing a new publishing department, the consultants were aware that a common misconception that would have to be fielded was the presumption that a publishing department was a service department, rather than a professional resource adding value to the research activities of the organisation.

The potential role of the Publishing Director was little understood in an environment where publishing had come to be seen as a matter of getting content printed – a purely production function. As it turned out, a lot of time was invested in explaining to researchers that the publisher was a strategic decision-maker, who would work closely with the research teams and would combine knowledge of research and publishing environments. The Publishing Director would need to be a quality gatekeeper, ensuring that all publications adequately reflected the research reputation of the HSRC. While the head of the publications department in the HSRC had previously been a production facilitator in the main, the new approach would be that the Publishing Director would assist with the conceptualisation of publishing projects and the framing of research output in professional product development. There was some resistance to the idea that research directors would lose complete control of their publications and it was, therefore, important that the Publishing Director appointed would be

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someone who earned the respect of the research community and could not be seen as an administrative functionary. The Publishing Director would have overall responsibility for functions such as the content of website and print products and for marketing and promotion of the publications website and print publications.

The publishing decision on what would be published, in what format, would be the responsibility of the Publishing Director. There would be peer review of all publications except client reports, unless requested by the client. The publishing decision would combine academic considerations with market considerations. The Publishing Director and Research Directors would work together to build a market-focused publishing list that delivered the HSRC's strategic goals.

The marketing of publications within the organisation's overall marketing strategy

A separate report on the marketing function in the new publications department by Karen Bruns, drew the distinction between services marketing and product marketing, but concluded:

> Where the marketing of the publications as product dovetails with this corporate marketing function is that, notwithstanding intangibility, heterogeneity and perishability, products marketing is not that different from services marketing. The HSRC is in the business of information. Clients and customers are buying solutions to problems by purchasing information from the HSRC. They are buying both a product and a service component and where the one begins and the other ends may be viewed as seamless by the client.

> Based on this analysis we are suggesting that the HSRC is moving towards promoting a hybrid – a percentage of products (publications) and a higher percentage of service (research services or products). This is common in service industries today in that there is a move from pure service towards a hybrid of services and product in order to better position the organisation in the minds of the clients and to create strategic advantage within the service sector as a whole.

> We would thus envisage that the Corporate Marketing Executive is focussed entirely on future business – on procuring research accounts and on representing the HSRC as the best candidate for such contracts.

> The Publications Marketing Manager is, however, dealing with what currently exists and is looking for ways of packaging, presenting and

> selling existing product in order promote the activities of the organisation as a whole.

> He or she is therefore dovetailing with what the Corporate Marketing Executive ultimately seeks to achieve.

Karen Bruns pointed out that if publishing were to be seen as part of the marketing of the HSRC and its research, this would mean that the financial contribution should be seen 'holistically' – perhaps uncomfortable in that the measurables for the marketing team are not as obvious as financial return. The marketing position within Publishing is both that of line executive and of boundary role player – that is, representing the organisation to the outside world by liaising with stakeholders and especially with customers. So too the published information becomes the face of the HSRC to the outside world. It is, thus, vitally important that this be done with strategic intent.

Another important point was the need for market alliances:

> The ability to work with customers, suppliers, government and competitors for profit is crucial – there is a strong case within the product marketing scenario within less developed countries for managing strategic alliances. Here the HSRC and other organisations or firms could unite to pursue agreed upon goals – such as B2B information provisioning or co-publication – yet remain independent within the alliance. The partners share the benefits of the alliance and the performance of the tasks in key areas, possibly on an ongoing basis. Within the context of publications marketing, the pursuit would be largely for joint marketing opportunities and shared databases, as well as faster response to market needs and the flexibility to do so.

Outsourced services

The recommendation was made that the HSRC should seek a single outsourced publishing and production services partner, with the aim of building a long-term relationship that would meet the HSRC's specific needs.

The company appointed, Compress, is a digital publishing services company focused on leading the development of organisational publishing through technical innovation. Compress provided a comprehensive range of tools and services for preparing, reproducing and disseminating publications in both paper and digital formats. Their multi-channel publishing partner strategy was a total-solution service offering, aimed at saving organisations time and money, and ensuring publishing excellence.

Compress was founded in 1999, partly in reaction to the lack of technological innovation in the South African publishing industry. The company's initial strategy was to create revenue streams by offering parallel print and digital publishing solutions to publishers as well as what they came to describe as 'accidental publishers', that is, commercial and not-profit organisations who produce and disseminate significant levels of information but whose core business function is not publishing. While pursuing this goal, Compress was invited by the HSRC to tender.

Compress tendered for the management of HSRC publications in September 2001:

The HSRC's publishing needs were identified as follows:

1.   A full pre-print service that could take the raw electronic documents of its authors and researchers and turn them into high quality, print-ready manuscripts.

2.   The creation and maintenance of a digital library of HSRC publications, as the logical storage solution for the HSRC. This aimed to make all titles accessible, in an intuitive structure, with links to other appropriate sites

3.   The provision of a consumer interface with e-commerce facilities: the HSRC needed a website that would function as a consumer interface for distributing free information, but there also needed to be the infrastructure for e-commerce transactions to take place if necessary. This included ordering capabilities, as well as facilities for customer registration, maintenance of customer information, and records of customer interaction and transactions. The e-commerce infrastructure could also facilitate the ordering of print-on-demand and electronic products (including order processing and invoicing, distribution and delivery, and payment collection).

4.   Print-on-demand and electronic products: the HSRC required a print-on-demand service that allowed for the provision of digital files for print-on-demand; estimating and ordering; quality control; as well as order processing and delivery to the client. This service would also include the option of processing and distributing other electronic products.

Implementation of the new publishing strategy

The new publishing strategy received the full endorsement of the CEO and implementation started with the appointment of a Publishing Director with publishing experience, but who was also a respected academic – the

political scientist John Daniel. He later handed over to the Publishing Manager, Garry Rosenberg, who came from an academic publishing background.

In her review of marketing functions, Karen Bruns had recommended a three-phase internal marketing process to get buy-in from the HSRC research community. This would consist of consensus building; the identification of gaps in knowledge; and then agreement on the suggested supporting activities and financial budgets. In the event, probably as the result of the pressures on an organisation in transformation, only the first step was tackled in any depth and even this lacked coherent follow-through. A full implementation of all phases would have required an established level of internal resources and the recruitment process in the production and marketing functions was slow. A lesson learned is that a more comprehensive and coordinated implementation strategy might have speeded up the process of establishing the new publishing strategy within the HSRC community.

The new publishing programme, therefore, found its own way in the organisation, overcoming various barriers and gradually establishing its reputation and the quality of its products and services. It has to be said that there were some stormy encounters at the outset, and continuing resistance for some research directors who felt that they had the competency to continue handling their own publications, but a mere 18 months later, the lead consultant found herself being told by a number of research department staff that the publishing department was 'the most effective department in the HSRC'.

Certain resource tools were developed to support publishing services, such as the costing calculator – an online tool that allows researchers to create dummy budgets for publications stemming from research projects. Tools such as these obliged and/or assisted researchers to consider publication as part of research planning, rather than as an afterthought or post-research supplement.

The Open Access model was a victim less of open opposition than of diversionary tactics and different agendas. This, too, therefore took a few years to 'take'. While the HSRC profiled itself as an Open Access publisher, for quite a while there was little content on the website and, for financial reasons, the digitising of key backlist titles has not yet been implemented, except for a few titles. There are now some 46 titles with full-text online in an impressive list that has contributed a great deal to the HSRC's reputation.

Barriers to implementation

Academic (and publisher) conservatism
The major barrier to the implementation of a digital, open access publishing model turned out to be academic conservatism – the desire for 'things as they are' in the form of conventional books sold through trade bookshops; book launches; and personal profiling of authors, as opposed to an organisational marketing model. Researchers feared that the bookshops would not support print products because of online availability. However, this turned out not to be the case. The result was the lack of wholesale buy-in because of these niggling concerns.

This was not a shallow resistance, but was built on the researchers' understanding of the way their own job market works: prestige (and, therefore, promotion) is still built around books on a bookshelf, with the author's name prominently on the spine, preferably published with a reputable overseas partner. Likewise, the HSRC publishers realised that their own prestige depended to a great extent on their ability to prove themselves by operating in a traditional publishing milieu, publishing 'university press' books alongside research reports and negotiating co-publications with overseas publishers. Once this reputation had been established, it was easier for the Publishing Department to get buy-in from the research community and to move forward to full implementation of an Open Access publishing model.

In fact, this was one departure from what the consultancy had originally suggested, namely, that all commercially viable products targeted at more general readerships be published through a reputable local publisher or press with international connections in order to maximise reach, allowing the HSRC Publishers to focus on research outputs that were less commercially viable. The new incarnation of the HSRC Publishers elected instead to improve its own production values, as well as scrutinise marketability of product, the marketing communications and channels to market. The support of international distributors of repute in the academic marketplace was enlisted and international co-publication deals were sought in the form of rights sales, while local publishing and distribution rights were retained. Thus, all rights for commercial exploitation locally and abroad were not surrendered – but this was subject to much negotiation among researchers within the organisation, who continued to see the role of the unit as publishing services or facilitation, rather than as a fully-fledged publishing operation.

In the process of brand- and credibility building, the acknowledgement in the broader research communities of the nature of the products, the

increasing ease of access and the role of such primary source materials in the research information mix have increased the demand for HSRC products substantially. At the same time, it has almost negated the necessity for print-on-demand publication, when the increasing print runs allowed litho runs which were more financially viable. It also assisted in convincing researchers from within the organisation of the benefit a professional and responsible publishing unit within the organisation – which goes to show that books do indeed thrive on word of mouth and deeply personal experience.

One lesson learned is that if Open Access publishing is to take off, then research accreditation policies need to be looked at. This is particularly important if African publishing is to shake off the neo-colonial assumption that 'overseas is better' even for African Studies scholarship. Also, there has to be someone to champion the open access model. Professional publishers and academics tend to work most happily in traditional models, and need to be persuaded of the advantages of online publishing, or treat it as a separate department, rather than as an additional product type requiring different considerations.

The difficulty of pulling publishing into line with institutional goals

Researchers were initially resistant to the idea that their personal publishing goals had to take second place to institutional goals and this needed intensive negotiation during the transformation process.

It was also difficult to persuade the research departments to build the publishing programme into their research planning at an early stage. This resulted, for the publishing department, in the turbulence of impossible deadlines and funding problems when publications were required but had not been planned for. After a process of negotiation, accompanied by learning from experience, this has now eased substantially.

As mentioned above, one of the mechanisms used, to resolve some of these issues is that the outsourced publishing services provider set up a cost calculator on the HSRC Intranet that helps research directors formulate their product specifications and get a working figure for budgeting purposes. This was a joint effort between the service provider and the HSRC publishing department.

Fear of copyright infringement from free web access

Many researchers expressed considerable fear of copyright infringement of their work and appropriation of their intellectual property if it were to be made available online. Arguments that photocopying provides an equal

threat were only partially successful. In the end, it seems that once the idea takes hold that the research function has to fall in behind organisational goals, this becomes less problematic. There is also a much greater understanding now in the HSRC of the benefits that online access provides for research dissemination and much less fear of unwarranted copying. It is beginning to be understood that single-author works and integrated research reports seem to attract sales of printed copies, whereas multi-author works are more likely to be selectively downloaded or accessed online.

The HSRC permits the use of its online materials for non-commercial multi-copying, for example, for classroom use.

The cost of scanning backlist titles

The cost of scanning backlist titles provided a barrier to putting old titles on-line, as was originally intended. These had to be scanned for Optical Character reading (OCR) rather than TIF files, because TIFs are too big for easy download. OCR scanning costs around R7,000 ($1,000) per title – not an enormous cost, but one that the organisation needs to be persuaded is of value. Particularly in a country like South Africa, there is a need for researchers to have access to out-of-date materials and the HSRC backlist provides valuable insights into the research conducted during the Apartheid period. Ideally, where there is a need for a small reprint, the title should be placed online. What did happen was that pulped or out of print titles were made available through POD when there was a demand, but these have not been scanned for online delivery. It might be that this is a function that could be conceptualised as part of the library's services. The HSRC thought of this service as a trade end, but from a research perspective, everything needs to be made available. It is hoped that a proposal to capture the extensive backlist of research will be finalised within the next 6-8 months, and that donor funding might be sought for the creation of a valuable research resource for posterity.

Financial considerations

The HSRC publishing department receives financial support centrally from the organisation, which supports salary and infrastructure costs for the publishing department. Theoretically, individual titles are funded from the research programme concerned. However, where the money comes from and how things are paid for remains problematic.

More insidiously, institutional attitudes veer between support for the open access model and a reversion, particularly at budget time and year-end, to the standard questions about turnover and profit. As many col-

leagues may experience within their own research institutions, the Finance Department still tends to regard publishing as a profit centre rather than a cost centre. It clearly takes time to instil an understanding of the value of investment in a publishing programme that furthers the aims of the organisation. The measure should be the cost effectiveness of research dissemination and the measurement of research impact and its contribution to the success and growth of the organisation. These are not easy to calculate, but can be measured through market feedback and customer relations management.

In the mean time, the rhetoric of cost recovery and profits continues. One way around this has been to use spare or additional resources to offer a publishing service to government departments or other research entities. This 'sale of services' has allowed for greater financial manoeuvrability.

Working with outsourced providers

The HSRC followed recommendations to commit to a single service provider for both its paper-based and electronic publishing production needs. The recommendation for a single supplier was based partly on the fact that the Publishing Department initially consisted only of a Publishing Director and a Publishing Assistant. However, the recommendation for a single supplier was also based on the belief that it would, regardless of the future size of the publishing department, allow for the establishment of a relationship between client and supplier where client could, on the one hand, more closely control and predict the level of service and, on the other, rely more closely on the supplier to initiate publishing solutions relevant to the organisation's needs.

From the service provider's point of view, its status as sole supplier affords it the opportunity to commit dedicated resources to the client as well as take a certain degree of risk in offering new solutions based on an understanding of the client that is amplified by the single-supplier scenario. In the case of the HSRC-Compress relationship, this recommendation seems to have had the expected results. Compress and the HSRC have been working together for three years and during this time, Compress has offered new solutions to the organisation while at the same time adapting to the needs of a growing publishing division.

Implementation – technical and organisational issues

As already stated, Compress was awarded the HSRC contract in November 2001. It has been working with HSRC's Publishing Unit since. During the three-year period, the HSRC publishing unit has grown and

this has impacted on the initial publishing strategy and, consequently, on the publishing solutions provided by Compress, not least of which, has been the changing importance and nature of the digital publishing solutions it offered to the HSRC. The discussion here will focus almost exclusively on the digital component of the solution offered.

The history of the HSRC's digital publishing programme can be divided into three distinct phases:

- Phase 1 (2001/2002): Implementation

- Phase 2 (2003): Creating a shop window

- Phase 3 (2004): Open source revived

Phase 1 (2001/2002): Implementation

The HSRC, at this stage, was an organisation in a flux, trying to shake off its Apartheid legacy to re-emerge as an Africa-orientated research organisation producing 'social science that makes a difference'. A telling result of this process of change was the existence of gaps in the organisational infrastructure, including the existing but vacant posts of IT Director and Director of Corporate Communications. The publishing unit consisted of only a Publishing Director (60 per cent time) based in Durban and one staff member in Pretoria.

It was in this context that the publishing strategy had been presented and accepted. Compress was tasked with building a low cost, high reliability website based on the new parallel print and digital publishing strategy. It was required that the website conform in its look and feel with the existing corporate website.

Implementation

Compress constructed a website with the following salient characteristics:

1. Hosting of the website with a third-party ISP to offer reliable, high-speed hosting services.

2. Website front-end built using HTML and ASP. (The original HSRC website had been built using only HTML with extensive use of Dreamweaver templates.)

3. A database created using SQL built for an online bookshop linked to an e-commerce gateway. A Microsoft SQL license was licensed from the ISP to minimise initial expenditure.

4. Electronic files to be made available as PDFs rather than in HTML. The drawback at that stage was that search engines did not search within PDF documents, but the PDF route was more affordable, maintained the integrity of the original publication in terms of layout and made printing easier.

5. PDFs were to be stored using proprietary software, AdLib Publisher. This software solution was chosen as it allowed for effective off-line storage required for the management of print-on-demand as well as the uploading of new content to the website.

6. Scanning and making available as PDFs six backlist titles as a starting point for creating a resource-rich website.

Lessons

Any website within a large organisation tends to serve the needs of various stakeholders within the organisation. In the case of the HSRC, there was resentment from some quarters within the organisation of the outsourcing of the publishing website. A process of consultation and complete buy-in is critical for the effective and efficient conceptualisation, implementation and maintenance of a website, particularly where certain responsibilities for the site are outsourced.

No single person or committee from the HSRC was appointed to work with Compress in managing the growth and functionality of the website. There was also no interface between Compress, HSRC publishing and the HSRC Information Technology Department. It is critical for the success of any site that there is regular two-way communication between all parties with vested interests in the site – IT, marketing, sales and corporate communications. The first build really ended up being a re-dressing of the old site with additional content and functionality but without any regular updating of content once the build was complete. This resulted in a better but ultimately static site that offered little added value. This state of affairs can be attributed to the fact that no marketing function existed within the HSRC at that point to promote the website, or to develop and promote the organisation's unique open access model. This not only meant that little traffic was driven to the website but that little user feedback was generated, encouraged or captured.

Phase 2 (2003): Creating a shop window

During this period, the HSRC publishing division expanded and relocated to Cape Town. The following staff was appointed: a full-time publishing manager; a full-time marketing manager; a full-time editorial manager.

Publishing output increased significantly during this period as the division began to sell itself successfully both within and outside of the organisation.

During this phase the sales function was outsourced and the distribution agreement with the organisation's original distributor renewed. For reasons that were outlined earlier in this paper, the publishing division began to operate more like a scholarly publisher than the more radical Open Access role proposed for it. This meant more focus on sales and less on free dissemination. The Open Access policy, at least for this stage of development, was restricted to selected monographs and all occasional papers. There was also no further commitment to scanning backlist titles to make them available electronically.

In consultation with the new Marketing Manager, Compress proposed a rebuild of the website to accommodate publishing's increased output. By this stage, Adlib Publisher had been abandoned and PDFs were made available from web pages created manually whenever new content was available or when updates were required. The recommendation was to integrate the growing number of PDFs and book data into a single, searchable database with titles arranged by subject area in order to improve navigation and information retrieval.

Implementation
The website was rebuilt and rebranded to remain in line with the updated parent corporate website. However, a single database was not developed because of the costs involved. Nevertheless, the website now had an online library with a growing number of full-text titles and an effective online catalogue with e-commerce enablement. The relationship between publishing and the HSRC's research goals became clearer and navigation easier and quicker.

Lessons
There had been a diversion from the original recommended Open Access strategy. The website and digital dissemination had been supplanted by traditional modes of distribution. Certain product was only available in print and, locally, only from 'good' bookshops or internationally by way of co-publishing deals or through overseas distributors. Although books could still be ordered online, this was not regarded as a serious outlet. This meant that the website was marginalised to a certain degree. In particular, no further commitments were made to using the website as an interface for increasing the availability of backlist titles – either electronically or via POD. The result of all this was that the website was not being kept to a consistent trajectory – one that should track the strategic course set. With

each change in strategy, comes a resultant alteration in the appropriate functionality of the website. The website could not evolve effectively – that is, constantly responding to the needs of its target market in order to improve delivery of content – if the strategic objectives were inconsistent.

There was still no single person appointed to manage website content for the HSRC. Initially, a website committee, consisting of representatives from IT, marketing, corporate communications, publishing and Compress had been conceptualised as a way of facilitating communication around the website. This committee was never constituted. This resulted in poor communication between the market, HSRC and Compress.

Overburdened with a major overhaul of HSRC's IT systems, the HSRC IT Department was slow in setting up infrastructure to improve hosting capabilities. The lesson here is the importance of generating realistic time frames for the objectives set – building, testing, launching, gathering feedback, adjusting and marketing, all take time.

Phase 3 (2004): Open source revived

In 2004, the HSRC publishing division made an important decision to revert to and marshal resources for managing a full Open Access model. This was accompanied by the appointment of a dedicated HSRC representative to manage the website. However, responsibility for creating new content to promote titles uploaded remained unclear. Pressure remains to reintegrate the website back into the organisation both in terms of the hosting and maintenance of the site. This remains problematic in the face of limitations in bandwidth and server capacity at the HSRC.

A single database for both PDFs and book data was proposed. Along with this, attention would be given to improved navigation and search functionality.

Implementation

A new functional specification was prepared and quickly accepted (in July 2004) in the light of a desire to deliver on the 'new' commitment to Open Access. As part of the functional specification provided, consideration was given to the portability of site, namely, the possible migration of the site back onto the HSRC server. The 'new look' website was due for launch in November 2004 with enhanced search, functionality, and appeal which would potentially result in enhanced dissemination. In addition, the new website offered better tracking of users and their use of the materials provided.

Lessons

To some degree it feels as though the site has come a full circle with the benefit of a better understanding of the target market. For example, it has now been learnt that no assumptions should be made about users' computer literacy. The most common feedback when a site user attempts to access a PDF is that 'the site doesn't work'. Nine times out of ten, the problem is that the user is trying to open the PDF within their web browser and becomes impatient when, because of a slow connection, the PDF does not open immediately. In instances where a lot of traffic to a set of PDFs is expected, users can request now that the PDFs be e-mailed to them should they encounter any difficulties. All PDFs are presented as complete books in a single file but also as a file per chapter to allow for smaller files and quicker access.

Finally, despite the reversion to Open Access and the resultant commitment to a site that reflects this strategic shift, gaps remain in terms of communication. It remains unclear who will assume overall responsibility for the new site: will this be marketing, a dedicated website manager within the Publishing Department, or Compress?

Print on demand

All titles are offered as professional-quality print products. Many are produced in short runs through POD, although others are produced in conventional print runs.

Marketing and dissemination

The promotion and marketing of HSRC titles has overall been a success. Interaction between the Publishing and Marketing Departments has ensured that there is a strong branding effort through well-designed publications, in print and online. Attractive illustrated e-mail brochures are sent out to targeted mailing lists for every new title and the publications list gets good exposure through press releases and public launches, some of which take the form of workshops where research findings are presented to target audiences.

It has taken two years for the push and pull of marketing needs to be effective and this is now energetically managed. A lesson learned is that it would be wise to invest in a 2-year minimum plan. Internally in the organisation, the publishing model is catching on and the momentum of organisational confidence is building. Nationally and internationally, HSRC research is being effectively promoted.

Sales are managed through an outsourced service provider with a sales force covering all the SADC countries and overseas agency agreements

have been set up. What is not yet in place is the ambition to see cross-border book distribution through digital content distribution linked to remote POD sites. This is a long-term goal needing further development, possibly with the creation of a number of partnerships

For international distribution, there has been a lot of discussion around POD, but at the moment, it does not seem to be cost-effective to print overseas. The charges for loading titles with international POD operators is too expensive in local currency: Lightning Source requires potentially prohibitive investment and the international distributor Gardners charges $50 per title to upload for promotion through key online booksellers such as Amazom.com or Barnes & Noble. The HSRC is looking at smaller organisations like H-NET and agencies like Michigan State University Press in an attempt to find a solution that delivers its strategic goals, while still containing costs.

Language is clearly a problem for communication across African borders. The HSRC is working with CODESRIA to try to resolve this by setting up a project to translate selected research output on an annual basis. The main problem is the issue of cost. Exploration continues in the development of strategic alliances with non-English-speaking research institutions in Africa to assist with knowledge- and resource sharing.

The relationship between corporate communications and publishing

The relationship between the marketing and promotion of publications in the HSRC and the corporate communications function remains problematic, with continuing duplication of functions. There are three partitioned operations responsible for promoting the organisation: business development, which looks for tenders and contracts; Corporate Communications, which gets press coverage for the HSRC; and Publishing, which focuses on research dissemination. Also not fully worked through yet is the relationship between the library and the publishing department when it comes to the research dissemination role. The misconception perhaps arises from the common misperception of publishing as a production and printing operation rather than a strategic marketing and dissemination function. This issue becomes particularly acute when publishing operations are redefined as online and Open Access.

These issues all form part of ongoing discussion and development in the HSRC and a central strategy is needed to pull all the functions together and maximise the mileage to be gained from a strong publishing programme.

An evaluation of the success of the publishing model

Overall, the new publishing strategy seems to have been a resounding success. Research impact has been dramatically increased and the publishing department has contributed to the successful transformation of the HSRC's image as a social science research body with a contribution to make to social justice and regional imperatives. The Open Access model, once there was buy-in, has proved to be a strategic advantage and an effective research dissemination tool, both for content that is available free of charge and content that is sold. The type of content published by the HSRC is a distinct advantage in this regard: primary content based on surveys and analyses. Many readers come to the site primarily for that reason.

An interesting sidelight on the process is that in 2004, after Open Access publishing had been embraced and many products were available free of charge online, the sales turnover of the publishing department has risen by nearly 300 per cent. This is probably the result of a combination of improved product quality and expanded availability because of the online access, but it is an interesting reflection of findings elsewhere in the world that the availability of full text online for scholarly publications does push up sales. In August, an HSRC title commissioned by the Ministry of Education made it into the top ten best-selling non-fiction titles in South Africa, measured across 350 retail outlets nationally – a considerable feat for a scholarly press. This is made even more remarkable by the fact that the HSRC Press has not bought into the prevailing ethos that it has to publish predominantly for a general market – its products for the most part remain resolutely scholarly and specialist.

With a solid list of online and print titles, the HSRC is now beginning to build its international relationships. With the conversion of the HSRC Publishers to the HSRC Press, an Editorial Board has been formed to guide the publishing process and ensure quality control and at its second meeting, the Board agreed to enter into a co-publishing arrangement with CODESRIA and Zed Books to publish up to five books in a new series. The first of these appeared in early 2005.

Effectively, the HSRC publishing programme has become a hybrid of new and old publishing models, working effectively to advance organisational goals and helping to expand the availability of Africa research output. We watch the future with interest.

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Scientific Content Creation and Dissemination: Opportunities for African Universities in Electronic Publishing

Elisha R.T. Chiware

Abstract

Africa has made some strides in accessing the Internet over the last decade or so and it has managed to upload considerable information on to the Internet in the areas of business, information technology, connectivity and politics. But there is a missing link in scientific and technological information content creation and dissemination. Several proposals have been made to narrow the gap between developed countries and Africa in terms of uploading information on to the Internet. Besides the growing public information and the presence of commercial web, content generated from African universities is expanding. Internet connectivity in Africa and most of the developing world initially took root mainly in academic institutions and among academics. In some parts of Africa, universities were pioneer users of e-mail and Internet access and there is very little evidence that their interest in ICTs has waned; rather, it is growing. Most African universities with full Internet connectivity have the potential of playing a critical role in content creation and dissemination through electronic publishing because of their research interests. This paper will address the problems that Africa currently faces in developing content for the Internet and in disseminating that information. The paper will look at institutions that have the potential for creating content for the Internet. It will focus mainly on universities and research institutions' capacities to take on this role. The paper also addresses other issues of access like limited bandwidth, unreliable electricity and communication transmission services, lack of technical expertise, high costs, etc.

Résumé

L'Afrique a fait certains progrès dans le domaine de l'accès à l'Internet au cours de la dernière décennie, et elle a réussi à transférer des informations considérables

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sur Internet dans le domaine des affaires, de la technologie de l'information, de la connectivité et de la politique. Cependant, il y'a un chainon manquant dans la création et la diffusion du contenu informatif scientifique et technologique. Plusieurs propositions ont été faites pour réduire l'écart entre les pays développés et l'Afrique en termes de transfert d'informations sur Internet. Outre l'information publique croissante et la présence de Web commerciaux, le contenu généré par les universités africaines est en expansion. La connectivité de l'Internet en Afrique et dans la plupart des pays en voie de développement a initialement pris racine principalement dans des institutions universitaires et chez les universitaires. Dans certaines parties de l'Afrique, les universités ont été les utilisateurs pionniers du courrier électronique et de l'accès à Internet, et il ya très peu de preuves que leur intérêt pour les TIC a diminué, il a plutôt augmenté. La plupart des universités africaines, avec une connectivité complète à Internet ont le potentiel de jouer un rôle crucial dans la création et la diffusion de contenu informatif par le biais de l'édition électronique en raison de leurs intérêts en matière de recherche. Ce document traitera des problèmes auxquels l'Afrique est actuellement confronté dans l'élaboration de contenu pour Internet et dans la diffusion de ces informations. Le document se penchera sur les institutions qui ont le potentiel pour la création de contenu pour Internet. Il mettra principalement l'accent sur les capacités des universités et les instituts de recherche d'assumer ce rôle. Le document aborde également d'autres problèmes d'accès comme celui de la bande passante limitée, les services d'électricité et de transmission de la communication peu fiables, le manque d'expertise technique, les coûts élevés, etc.

Background

The creation of scientific and technological content and its dissemination has been one of the greatest challenges in the strides that African countries have made in accessing the Internet. Research generated in African universities and research institutions could dominate current output in electronic publishing, which is made possible by the existence of the Internet and other forms of electronic information dissemination. The Internet has provided opportunities and infrastructure for publishing and distribution of all types of information in various formats and at the shortest possible time and the lowest cost (Chisenga 1999). The number of African websites is growing rapidly and almost all African countries have local or internationally hosted web servers (Jensen 1998).

While the Internet abounds with current news on Africa, business information, tourism, etc., the African scientific and technological information is still missing. The research communities in Africa still face a number of challenges in using the Internet, generating relevant research, retaining experienced academics, and many other problems which affect the creation and dissemination of scientific material or any other related research

content. Currently, a number of initiatives on electronic information dissemination are currently underway. When fully implemented, they will see an increase of African research being disseminated through the Internet. Although questions are still being asked about the number of Africans who have access to electronic resources on the continent, yet it is important that these efforts continue.

Status of African scholarly information on the Internet

The opportunities and obstacles for producing scholarly journals vary considerably in Africa due to the diverse and complex conditions within different African countries (Hussein and Priestly 2002). A growing number of African journals, including scientific and technological ones, are now available online through a number of collaborative international as well as national projects.

Scientists and publishers in many countries face problems both in accessing the world's research information and in gaining high visibility for their own publications and national research output. The cost of printing and distributing journals contributes to low circulation levels which, in turn, leads to a reluctance by scientists to publish. This results in the loss of much important scientific information which either remains unavailable to the international scientific community or suffers long delays in publication. The transfer of e-publishing technology and online distribution of such journals can greatly increase visibility and enrich the global knowledge base (see http://dspace.dial.pipex.com/bioline)

The following are some of the collaborative efforts in electronic publishing and dissemination in Africa.

i. The Electronic Publishing Trust pioneered access to full-text articles in African journals in 1996 for Development (EPT-http://www.epublishing.org) in collaboration with Bioline to facilitate open access to the world's scholarly literature and to support the electronic publication of reviewed bioscience journals from countries experiencing difficulties with traditional publication;

ii The Programme for the Enhancement of Research Information (PERI), coordinated by the International Network for the Availability of Scientific Publications (**INASP)**, is another effort of activities in twenty countries (mainly in Africa) that strengthens research capacities by reinforcing local efforts to produce, disseminate and gain access to scholarly information and knowledge. It does this by bringing affordable global information to researchers in developing countries, by stimulating and supporting the publication and dissemination of in-country research findings, and by

providing information and communication skills training for researchers, practitioners, librarians and publishers (Ballantyne 2004).

The PERI programme includes the following components:

- Delivery of research and scholarly information. Libraries participating in PERI have access to more than 11,000, full-text journals and several bibliographic databases. Libraries in participating countries can access journals from 19 publishers. INASP pays the subscriptions for its primary targets, namely, researchers, university libraries and information managers in development research institutes and universities. Access is also available to other non-profit organisations because of the countrywide nature of the licences that INASP pays for.

- Disseminating national research. Activities in this programme aim to increase the visibility and accessibility of research carried out in developing countries. The main activity being the African Journals Online that provides a web platform of tables of contents and abstracts from more than 180 African published peer-reviewed journals with links to the full text, if available.

- Enhancing ICT skills. Activities in this area aim to enhance the skills of information professionals, researchers and academics in developing countries to make effective use of electronic information resources and tools (Ballantyne 2004)

The challenge that INASP's programme of African Journals Online faces is how to extend the contents from being an African journals indexing tool to becoming an African journals publishing platform. The challenge is to encourage as many journal editors as possible to move their production to an electronic platform (Ballantyne 2004). African universities and research institutions are home to a good number of scholarly journals and could play a leading role in this challenge.

iii. Database of African Theses and Dissertations (DATAD). The Association of African Universities (AAU) found it necessary to initiate and support efforts towards putting Africa's research output onto the mainstream of world knowledge. The initiative was born out of a project in 2000 following a positive recommendation of a feasibility study carried out for a pilot project to index, abstract, and distribute theses and dissertations completed in African universities.

The Database of African Theses and Dissertations is a programme to improve management and access to African scholarly work. Theses and dissertations represent a significant proportion of Africa's research activity. However, access to this research output is not easy, even within the

institutions where they are submitted. Months, years, and, in many cases, longer periods may elapse before papers or other forms of publications describing aspects of the research in these documents can be published. In Africa particularly, they are an underutilised information resource. By their very nature, they are produced in very limited quantities and the only copy available for public access is usually in print and can only be consulted physically in a university library.

The programme's long-term objectives include:

- Working with participating institutions to build a regional database of theses and dissertations;

- Contributing towards the creation of an environment that is conducive for research and publication in African universities and the region as a whole;

- Creating capacity in African universities for the collection, management and dissemination of theses and dissertations electronically;

- Providing visibility and improving accessibility to the work of African scholars both within and outside the continent;

- Facilitating the development of relevant copyright procedures and regulations which will promote the protection of the intellectual property rights of African University researchers and scholars; and

- Providing support for AAU programmes which aim at capacity building in research, promotion of cooperation among member universities and the networking of institutions.

iv. The American Association for the Advancement of Science (AAAS) Africa project. The AAAS Africa Programme was inaugurated in 1987, representing a concerned response on the part of US scientists and educators to the institutional crisis that their African colleagues were facing, and a commitment on the part of US scientific societies and donors to work with African institutions to address that crisis. To date, activities developed and implemented in partnership with African institutions have centred on improving access for African researchers to scientific and technical information, encouraging other aspects of scientific capacity-building, articulating research and policy agendas for critical issues facing African science and society, and promoting productive collaborative ties between US and African scientists and their institutions. This body has long been involved in projects to improve information access for scientists in Africa.

Many other collaborative efforts are underway and will certainly lead to significant increase in African content on the Internet within the next five years.

The role of African universities and research institutions

Africa has large number of universities (both private and public), research institutions, and national agricultural research systems (NARS) that could play a leading role in scientific content development and dissemination. African universities are pioneers in the use of the Internet in most countries and still can take this pioneering role a step further in content development. The Internet offers possibilities never before seen in publishing since the advent of the Guttenberg printing press and desktop publishing combined (Adebowale 2000). Research generated from these institutions can be the basis for content creation on the Internet. While a limited amount of this research is published in African scientific journals, most which are now accessible through African Journals Online, there is still a lot more that could be peer reviewed and be made available through the global information highways.

A visit to the websites of a number of African universities will reveal that much information has been made available through the Internet. Some common examples are examination papers, conference papers and workshop proceedings and many other guides that would not have been easy to make available to the outside world without the Internet.

Globalisation represents a significant threat as well as a substantial opportunity to the economies and educational systems of Africa and other areas of the developing world. If used wisely information technology has the power to help create powerful and synergistic educational partnerships at local, regional and global scale. Such new and large scale partnerships, only possible because of the existence of the Internet, have the potential to allow educational institutions to respond positively to globalisation and help promote development if enough partnerships can be created and sustained (Keats 2003).

Another emerging area for African universities is that of collaborative development of open content. Given the cost of content, under-resourcing of universities and the scattered nature of expertise in Africa, the collaborative development of open content seems like a useful way to get high quality, locally relevant content to enhance teaching and learning. However, while there are currently no published operational models to guide institutions or individuals in creating collaborative open content projects many models are now being suggested and experience from open soft-

ware development are now being used to build the foundations of a process model for African universities (Keats 2003).

According to Keats (2003) and Keats and Shuttleworth (2003), the economic benefits of collaborative model of open content development stem from two inter-related processes, namely, collaboration and reuse. When people with a common interest in different institutions collaborate in the creation of content, it is obvious that as more people collaborate the costs per institution will be reduced.

For African editors willing to provide open access to their content, INASP has been encouraging them to use a new indexing and publishing system that uses the open source Open Journals System software developed by the Public Knowledge Project in Canada. INASP reports however that some editors in Africa are not yet convinced of the open access publishing revenue model, hence they are assisted to explore how they can also publish in full-text using commercial services such as Ingenta or Extenza (Ballantyne 2004). More training and publicity is still required to make sure that African editors are fully aware of the economic and legal implications on their revenues if they choose publishing electronically.

The African Education Research Network (AERN) is working on a project to determine and develop the conditions under which the uses of computer networking will greatly enhance communication between educational researchers (professors and graduate students) in 'Northern' universities and their counterparts in African universities in a manner and to a degree that will strengthen research capacities in African universities. Further objectives of the project include determining the conditions necessary for sustainability of the electronic network. The development of appropriate strategies to extend network access to an increasing number of African educational researchers to contribute to the increase in trans-African communication is necessary and most welcome.

These various collaborative efforts will certainly lead to the dissemination of more African scientific content through the Internet. The challenges remain in the area of sustainability, i.e., whether they can continue beyond the collaborative relationship and stand on their own. Experience with donor funding in African development over the last four or five decades shows that such projects end once the donor community pulls out.

Constraints to content development

There are several challenges that African universities and research institutions are facing in their quest to create content for the Internet.

These vary from problems of access, government policy, and limited research capacities to limited resources.

The major challenge that African universities face is that of funding. The greater part of ICT projects in African universities has been achieved through donor funding. We have cause to fear that when this funding ceases so might the sponsored projects. Until the question of funding in African universities and research institutions is clearly addressed their capacity to publish both in print and electronically will remain very limited. Universities in other regions like southern Africa are building IT infrastructure from their own funding which largely comes from government. Universities in countries like South Africa, Botswana, Namibia, Zimbabwe, Lesotho and Swaziland have achieved a certain level of IT development that compares well with other international universities.

The second challenge facing African universities is their Internet capacity, i.e., bandwidth. Bandwidth is the scarcest resource in African ICT development. Most universities still connect to the Internet through a system of lease payments to national telecommunications authorities. These leases are often very expensive and do not deliver reliable services. For long-term development that will allow the creation of sustainable content development, national telecommunications authorities need to lower the cost of bandwidth for universities. The long-term national development benefits of expanded in-cooperation into the global information network and production of highly skilled young people far outweigh the short-term benefits of monthly lease payments. There is need for better management of ITC resources and infrastructure in order to maximise the limited bandwidth in Africa.

The third challenge facing African scientific and technological community in electronic publishing is the crisis in their research capacities. African scholars, and those from the North who specialise in African educational development observe a continuing crisis in African universities' capacity to create and sustain the quality of educational research that are essential to national development and autonomy. Factors that contribute to this crisis include isolation of aspiring researchers whose institutions lack the means to support their research interests or participation in regional and international conferences and seminars where studies in progress and completed studies are considered.

It is, estimated that research capacities of African universities have declined by as much as 50 per cent in the past decade. The emergence of a virile community of African scholars is essential to the future of African

universities' capacity to create, develop and disseminate scientific and technological information through the Internet.

A fourth challenge is that the regulatory environment for African universities to freely publish on the Internet. Many governments are still to come up with ICT policies that guide their countries in the development of IT. Where there is creativity there are delays in obtaining the required licensing to link to the Internet. For example, the existing laws may also be in conflict with those of the development of the Internet. African countries generally lack the legal and intellectual property rights laws for local innovation and cultural development. There are also inadequate policies to balance between public and private ownership, local resources and foreign direct investment, monopoly and competition in communication and value added services (ECA 1999).

Conclusions

While opportunities exist for Africa to develop and disseminate scientific and technological information through the Internet, challenges must be addressed adequately. More studies should be carried out to determine the current technical constraints and come up with suitable solutions that fit in within what is currently affordable in Africa. While Africans may want to duplicate the developments of the West in ICTs in reality, this is not achievable in the short term given all the problems that the continent currently faces and has to address. Africa needs feasible solutions and the capacity to find those solutions is there.

Producers of African scholarly journals face many challenges in the coming years, particularly with the ever-expanding digital technology. Africans need to show commitment to their goals, share experiences and resources, work closely with partner organisations and develop appropriate models that suit each country. Appropriate digital technology should be used to enhance efforts in reducing printing costs and in disseminating journals. Continuous efforts must be made to improve the quality of journals, research reports and related information that is of academic value. Furthermore, for a good quality of scientific content creation to be achieved in African universities and research institutions, governments must create the enabling environment through legal and policy frameworks to protect intellectual rights, security and copyright ownership, and must encourage accessibility and competition at affordable prices (ECA 1999). Pricing mechanism should also be developed to reward contributors and ensure that they continue publishing.

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Deploying the Electronic Edge in the Peer Review of Scholarly Publications

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Abstract

This paper traces the origin and evolution of the traditional peer review system, and shows its strengths and weaknesses, which arise mainly due to the effects of human factors in the management of activities involved. An automated non-blinded open peer review system is recommended considering the versatility of the information and communication technologies and the modern openness culture in scholarly communication. This new system will improve the participation of developing countries' scholars in the review of scientific papers published in the mainstream journals, and thereby enhance their contribution in the international science scene.

Résumé

Cet article retrace l'origine et l'évolution du système traditionnel de révision par les pairs, et montre ses forces et ses faiblesses qui se posent principalement en raison des effets des facteurs humains dans la gestion des activités concernées. Un système informatisé un système de révision par les pairs qui est non sélectif et ouvert est recommandé compte tenu de la versatilité des technologies de l'information et de la communication, et la culture moderne d'ouverture dans la communication savante. Ce nouveau système améliorera la participation des chercheurs des pays en voie de développement à la révision des articles scientifiques publiés dans les grandes revues, et d'accroître ainsi leur contribution à la scène scientifique internationale.

Introduction

The twin debut of *Journal de Scavans* in France and *Philosophical Transactions* in Britain around the middle of the seventeenth century marked the beginning of the over 300 years regime of the paper journal as a format for science communication. The birth of the paper journal

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was heralded by the intersection of a number of social forces and technological advances, including the discovery of printing in Europe and the development and improvement of postal services (Eisenstein 1979; Cronin 2002) in addition to the attitudes in the scholarly community which were moving towards sharing established knowledge based on observations and experimentation (Kronick 1962). During these over 300 years, journals and other primary sources have ruled the science communication protocols, fulfilling, although not flawlessly, the expectation that scientists in different peer communities could be interconnected for mutual sharing of ideas and research results. With increasing stratification of knowledge and institutionalisation of science, the ability to contribute to knowledge through the journal media has become very significant in science, classifying scientists and their institutions as productive or non productive, being of high or low quality; in fact, epitomising human intellect. As a result, the number of journals globally has grown inestimably, with each community of scientists seeking to promote the chances that its members have their signatures appended on the tabloid.

From the angle of science communication, the aims of the journal are to:

- Encourage research;

- Aid the flow of information;

- Establish priority as quickly as possible; and

- Report separate parts of a research programme.

During the earliest stages of the modern paper journals, the journals fulfilled these expectations by receiving and publishing articles sent to them by authors, without any questions regarding whether the contents of the articles were authentic or had been published elsewhere. The scientific texts were accepted on their own merits within the prevailing notions of 'civility and gentlemanly conduct' (Foucault 1977). Hence, the same articles could be published in as many journals as the author wished, enabling the author to reach different audiences of his choice. What then brought about the institution of peer review?

The origin of peer review

There is a relative consensus that the institution of peer review was probably formally established in 1752 when the Royal Society of London formed a Committee of Papers, which was charged with the review of all articles submitted for publication in the *Philosophical Transactions. The major*

assignment of the Committee was to ensure that the articles contributed to knowledge (Zuckerman, et al. 1971; Burnham 1990). To effect this, the editor of the journal read the articles with the help of some editorial assistants. With increasing competition among journals and their publishers, some social, economic, political and other interests started to be introduced in the role of the journal as a publishing medium. Individual journal publishers started initiating policies to improve the postion of their journals among competitors. The journals started asserting undue control over the right of ownership of the published materials, although the copyright of the article remained with the author, thus introducing a dichotomy between ownership of the journal article and the copyright of the article. In 1969, Franz Ingelfinger the editor of *New England Journal of Medicine* (*NEJM*) made a policy that his journal would reject any paper that had been published – in whole or substance – in any other journal. Ingelfinger's policy began as an economic decision to improve the market rating of his journal. Thereafter, Arnold Relman, the next editor of *NEJM* introduced this factor as a responsibility of peer reviewers, so that articles published in *NEJM* would be confirmed not to have been published elsewhere (Altman 1996). Hence, peer review acquired a new purpose of being a strategy for sieving articles that had been published elsewhere, so that they do not feature in *NEJM*. With increasing use of the journals as communication media, coupled with increasing competition among scholars for tenure, the fear that wrong claims could feature in the prestigious *NEJM* motivated Relman to include a third point in the peer review responsibility, namely, to ascertain the authenticity of the articles sent to *NEJM* for publication. Peer review has since then been held to be the mechanism for ensuring the high quality, non-duplication and originality of publications.

According to El-Munshid (2000), there is a general consensus among scholars now that peer review, commonly involving the use of targeted and anonymous referees chosen by knowledgeable editors, is widely accepted within the scientific community at large because:

- It provides expert and impartial evaluation of manuscripts that would weed out flawed and fraudulent research, that is, it acts as a gatekeeper that ensures high standards for published scientific articles;

- It improves manuscripts through the constructive criticisms of the reviewers;

- It helps direct articles to the appropriate journals through some form of advice often communicated to the authors;

- Peer review is also to free publication from the domination of any particular individual's preferences, making it answerable to the peer community as a whole – within the discipline or specialty (Harnad 1985).

Constraints of peer review

Despite its advantages, peer review is a subjective process with clear fallibilities. Often, it is argued that peer review is subjective or biased as peer reviewers are essentially the author's competitors. Readings (1994) was very sharp in his observation regarding this, particularly as it affects younger scholars:

> Normally, those who review essays for inclusion in scholarly journals know what they are supposed to do. Their function is to take exciting, innovative, and challenging work by younger scholars and find reasons to reject it. The same goes for book manuscripts: one receives a hundred dollars for rejecting a manuscript, but if you suggest that it should be published, the check never seems to arrive (Altman 1994).

Peer review cannot ensure the validity of a study's data, and many journals do not even clearly describe their policies and practices. Articles can pass peer reviews, but might have been developed based on faulty and fraudulent data. Evidence to this can be cited from the many revelations of the international medical journal editors regarding the level of infelicity in primary research articles which passed through peer review oversight (Flanagin 1994). In a recent article, Hirschauer (2004) has even suggested that peer review is not a scientific measurement of the quality of publications, but a social institution for the calibration of reading time within a discipline.

Bias of peer reviewers may be based on gender, ethnicity or geographical location, research approach, and favour for one's discipline. There could also be some sujectivity in reviewers' bias when they show leniency towards renowned authors, otherwise known as the halo effect. This bias sometimes is expressed towards those with numerous previous publications or those who work in prestigious institutions. Another serious type of bias occurs when a hypothesis relating to the mainstream thinking is favoured in preference for those opposing what may be called conventional wisdom (Ernst 2000). Gender bias is expected because peer reviewers are predominantly male. A good case was documented in the *British Medical Journal* (Lock *et al.* 1990). Gilbert *et al.* (1994) have also done a comprehensive study of gender bias in the *JAMA* peer review process. To determine gender bias, Gilbert, Williams and Lundberg (1994) analysed information on the handling of 1851 research manuscripts submitted to *JAMA* in 1991 according to the gender of the corresponding author, as-

signed editor or the peer reviewers. They found that female editors were assigned manuscripts from female corresponding authors more than male editors; also male reviewers assisted the latter more than female editors. They concluded that gender differences exist in the peer review process.

Bias in peer review has also been related to institutional prestige. The study of Garfunkel *et al.* (1994) proved this aptly. They conducted a retrospective study at the *Journal of Paediatrics* in order to identify the extent to which institutional prestige affects peer review in the United States. They determined institutional prestige according to the monetary value of grants funded by the National Institutes of Health so that those that attracted higher grant volumes were ranked as more prestigious. Their results showed that for 147 brief reports, lower institutional rank was associated with lower rates of reviewer recommendation and selection for publication.

Further in this regard, Link (1998) investigated and showed that the source of a manuscript at the international level biases peer reviewers. Using 70 per cent of manuscripts submitted to *Gastroenterology,* reviewers' rankings of original manuscripts submitted to this journal in 1995 and 1996 were subjected to analysis based on the nationality of authors and reviewers with regards to whether the authors were from the US or not. The result showed that US reviewers when compared to-non-US reviewers, favoured US papers over-non-US papers and ranked US papers higher and assigned them a higher acceptance status. Thus, there was a clear preference by US reviewers for US papers.

A certain study examined whether there is peer reviewer bias against unconventional therapy (Resch et *al.* 2000). The study consisted of sending either of two invented versions of a short report on the treatment of obesity to 398 randomised reviewers of whom only 41.7 per cent replied. One version reported the results when using an orthodox drug while the second used a homeopathic remedy. The reviewers were requested to rate importance on a scale of 1 to 5 and to recommend either acceptance or rejection of the manuscript. There was a significant difference in favour of the orthodox version.

Peer review has also been argued to tend to stifle originality by blocking new ideas that are outside the mainstream or that seem to contradict established conventional wisdom. A number of commentators (Agger 1990; Readings 1994) argue that scholarly refereeing is inherently conservative. Those selected to be referees, at least for 'established' international periodicals, are generally 'recognised' scholars in their field who have already passed through the various publication hoops themselves. Original work,

which challenges orthodox views, while ostensibly encouraged, is in practice frequently impeded by academics that have a stake in keeping innovative critical scholarship out of respected journals. For if a contributor to a major journal runs against the grain of conventional scholarly wisdom in a given discipline, it is likely his or her submitted manuscript will have to pass through the hands of one or more academics who are prime representatives of prevailing opinion.

Peer review also provides opportunities for stealing ideas and plagiarism

Furthermore, peer review tends to render a certain proportion of scientists unnecessarily very powerful. In journal review, much depends on the goodwill of editors. Anecdotal tales of being 'set up' by editors abound in academic corridors. Such experiences where referees known to be especially 'vicious' in their criticisms, or to have strong prejudices against particular perspectives, are selected and can be devastating for beginning scholars setting out on the path to an academic career. Equally, of course, there is considerable satisfaction for authors when they encounter conscientious referees who submit their reports promptly, with balanced comments, fair criticisms, and constructive suggestions for improvement.

Indeed, on many occasions, referees perform an invaluable service in identifying faults the author may not have noticed — faults that if left unattended, could prove professionally embarrassing. Undertaking refereeing duties takes considerable time and effort to read scholarly papers and to respond to them thoughtfully. Agger (1990) maintains that, given the shortage of journal space and the abundance of manuscripts in most fields of study, the balance of power at present rests very much in the hands of those who edit, review for, and produce the journals. There is, his analysis suggests, simply not enough room for everybody – at least not in 'respected', international journals. Agger claims that much of the writing produced by academics is either never published or ends up in local, unrefereed sources. As a result, it remains – as far as the international scholarly community is concerned – largely 'invisible'. Agger observes:

> Academic reviewing becomes even nastier in an extremely competitive marketplace.... [I]t is no longer enough in many disciplines to have two strongly positive reviews and one lukewarm one; all three must be sterling given the rate at which writers submit papers for publication. In this climate, reviewers learn (and teach themselves, circularly) not to read generously but to target the smallest issues in their overall evaluation (Agger 1990).

Peer review also delays publication of research results. Some of the potential problems with peer review are intensified by the sluggishness of print and post systems. In the developing countries, these problems are more manifest. There are delays in sending and receiving of letters, and this can make it difficult for authors to quickly resolve problems with unresponsive editors and referees. In fact, the delays sometimes invalidate the result of a research when there is new knowledge or technique that cancels that contained in an article that is yet undergoing review.

But do we still need peer review?

Peer review is inevitable but we need a radical change

The problems associated with peer review notwithstanding, refereeing is inevitable. Without some sort of rigorous mechanism for judging academic work, the publication of scholarly articles and monographs can become somewhat an incestuous process. As a result, it is suggested that standard refereeing practices should remain an important mechanism for sieving the information that go to readers. Peer review is a critical component in the competition between rival journals because good refereeing and editing raise the perceived quality and increase reader appeal. With increased quality comes increased citation of published articles in scientific work. Highly cited journals attract more submissions, so that high quality is inevitably associated with a high rejection rate. It follows that quality journals spend more on the refereeing process, and that much of the investment appears to be wasted on rejected, and hence unremunerative, materials. However, the manual method seems to exacerbate the limitations of the peer review process. Harnad (1992; 1996), Stodolsky (1995), and others have suggested that there are other emerging systems that will minimise the human limitations that becloud the peer review process. Several factors have impacted upon, and transformed the way science is done today on the institution of peer review. For instance, the exponential growth of science has given way to a steady state, which results in tough competition for research funding and publication, and consequently a heavy strain on the process of peer review or even its corruption. The major external factor has been the advent of electronic publishing. The speed and convenience of the electronic medium has reduced the lag time between submission of a paper and its publication and increased the options for interactions between editors, authors and readers. It is appropriate to suggest a radical change in the peer review process harnessing the most modern and effective technology, namely, the WWW of the Internet.

The critical activities involved in the peer review process namely writing the article, and reading and assessing it for publication will remain a human function for a very long time to come. Except and until the electronic revolution becomes sufficiently sophisticated for the computer, for instance, to write or read an article, and also assess a scientific article, the human function will continue to exist. What then will be the role of electronic facilities in the peer review process? The critical role of electronic facilities in the process will consist of the management of those activities that cause delay and bias in the process.

Peer review functions fall within the category of activities that could be computerised. The process is repetitious and the volume of activities is very large. All the activities involved in peer-reviewing an article can, therefore, be computer-aided. A typical process of reviewing an article begins with a submission made by an author or authors. This usually follows a call made by the journal through various forms of advertisements both in the journal in question or other media. The journal has an Editor and, or an Editorial Board. With some journals, it is the Editor-in-Chief who in consultation with other members of the board, selects the referees, usually one or two per manuscript, and a third or more consulted to avoid a possible deadlock. The referees advise the Editor(s) by evaluating the manuscript and making recommendations about acceptance, or, rejection and or revision. The referees' reports are usually advisory rather than binding on the Editor, who makes the actual decision, although a good Editor often chooses his referees recommendation. The article is returned to the author if it requires some revision. Otherwise, the author is informed whether the article is accepted or not. This whole process takes a very long time and is very costly. Harnad (1996) has vividly described the benefits of the electronic alternative.

> But the Net does offer the possibility of distributing the burdens of peer review more equitably, selecting referees on a broader and more systematic basis (electronic surveys of the literature, citation analysis, even posting calls for reviewers to pertinent professional experts' bulletin boards and allowing those who happen to have the time to volunteer themselves). The speed with which a manuscript can be circulated electronically is also an advantage, as is the convenience that many are discovering in reading and commenting on manuscripts exclusively on-screen. All in all, implementing the traditional peer review system purely electronically is not only eminently possible, but is likely to turn out to be optimal, with even paper journal editors preferring to conduct refereeing in the electronic medium (Hanard 1996).

It is not clear whether we have realised the relative advantage of the Net where people are required to make decisions such as reviewing and editing, which still take time. Copyediting is much faster as the bulk of the formatting is done automatically. Database entry will be minimised as the authors and the software do the bulk of this work. No paid staff, or at most a minimum number, will be required to do any of the tasks. All correspondence will be conducted by email. Formatting, for both copyediting and publication, will be done by software. Printing, postage, telephone and other distribution costs will be completely eliminated, as the journal will be published only online. E-review will de-centralise the review process and enable platform independence. But how can we achieve peer review on the Net? Our approach here is rather radical.

Automated non-blinded open peer review

We suggest not only an electronic peer review system but also a completely open peer review type in which the identities of the authors and reviewers are not shielded from each other. This suggestion follows evidence that blinding peers is of no significant effect in the quality of the article, and the inherent openness of Internet activities.

Several studies have investigated the effects of blinding reviewers on the quality of reviews. The first significant study was a presentation by McNutt *et al.* (1983). They sent each of 123 manuscripts at the *Journal of General Internal Medicine* to two different reviewers: one blinded and the other non-blinded. The reviewers were allowed the choice of whether or not to sign their reports. Editors were blinded to the identities of both the authors and reviewers. They removed the identities of the authors, running headers and footers and any other clue in the text, and also the names of their institutions from the manuscript's title page. But self-citations were not removed. They concluded that blinding was 73 per cent successful, and that the causes of unblinding were recognition of authors from self-citations, knowledge of the authors' work, or an editorial error. The principal result was that editors graded the quality of blinded reviews significantly better than the unblinded reviews. Forty-three per cent of the reviewers chose to sign their reviews: editors graded signers as more constructive and courteous while authors graded signers as fairer. Apart from this study, three subsequent studies failed to confirm that blinding improved the quality of reviews in any way.

The study of Van Rooyen *et al.* (1998) is also significant in this regard. They randomised 527 consecutive manuscripts submitted to the *BMJ* and sent each to two reviewers, one blinded and the other unblinded to au-

thors' identities, with either masking or unmasking of a reviewers' identity to a co-reviewer. The authors concluded that blinding and unmasking made no editorially significant difference to review quality, reviewers' recommendations, or time taken to review. The experiment of Van Rooyen *et al.*. (1998) in which eight areas of weakness were introduced into a paper accepted for publication and sent to 420 reviewers randomised to blinding or unblinding, signing or not signing reports, plus a fifth group treated in the usual way, is also significant. They discovered that blinding reviewers to authors' identity and requiring them to sign their reports had no effect on the rate of detection of errors. Furthermore, Justice *et al.* (1998) used 118 manuscripts at five biomedical journals where the normal practice was non-blinding of reviewers, except for the *Annals of Emergency Medicine,* where reviewers are routinely blinded. The authors sent each manuscript to two reviewers, with the manuscripts randomly assigned either to normal practice, or to an intervention arm whereby the reviewer was either blinded or non-blinded. Their result showed that blinding was 90 per cent successful for the *Annals of Emergency Medicine* only. The average rate for the remaining four journals was 58 per cent, with blinding failure significantly occurring when the authors were well known. They concluded that that blinding of reviewers to the identities of authors' did not improve the quality of reviews even when the analysis was restricted to successfully blinded manuscripts. Essentially, the same group that performed the study of Justice *et al.* decided to evaluate differences in the success of blinding reviewers at seven biomedical journals. The percentage of reviewers successfully blinded was determined for three journals where blinding reviewers to authors' identities was a long-standing policy, and for four journals where there was no such policy (Cho *et al.* 1998). The success of blinding was not related to a journal's policy of blinding reviewers, but rather to the reviewers' research experience. But it is doubtful whether any journal would opt for less experienced reviewers to increase the success rate of a procedure which is largely ineffective.

In all the studies cited so far, it was only that of McNutt *et al.* (1983) that rated blinding high. What was the reason or reasons for the significant effect of blinding on the quality of reviews reported by them? El Munshid suggests that it could be because the authors and reviewers for the journal studied (*Journal of General Internal Medicine*) knew each other's research to a greater extent than for other journals, or the reason could be the way the review quality was assessed, and, in any case, the level of significance was not high (*P*<0.02). Subsequent studies, which

disproved the inevitability of blinding, incidentally involved more journals and larger samples and also employed somewhat different approaches.

On the other hand, many studies have shown that open peer review will work. Van Rooyen *et al..* (1998) performed a trial at the *BMJ* aimed at examining the effect of revealing the identities of reviewers to the authors. They sent consecutive manuscripts to two reviewers randomised to be identified or anonymous, and the quality of the reviews was assessed by two editors and the corresponding author who were blinded to the intervention. The editors' evaluation was obtained for 113 out of 125 manuscripts and for 105 manuscripts in the case of the corresponding author. There were no significant differences between the anonymous reviews and those in which the reviewers' identities were revealed regarding quality, recommendation to publish, and the time taken to complete the review. However, the likelihood to decline was significantly higher when the reviewer was asked to consent to revealing his identity to authors. It was concluded that open peer review would be feasible at a large general medical journal.

Also, Walsh *et al.* (2000) conducted a study devoted to examining the feasibility of an open peer review system at the *British Journal of Psychiatry*. The study involved 245 reviewers constituting 76 per cent of those requested to participate, with consent to have their names revealed to the authors. A total of 408 submitted manuscripts were randomised to signed or unsigned reviewer groups. The quality of each review, its tone, recommendation to accept or reject and the time spent on it were assessed. Compared to unsigned reviews, those signed had higher quality, were more courteous, and took more time to complete; signers were also more likely to recommend publication. It was then concluded that open peer review would be feasible at a small specialised journal.

Thus, both studies agree on the feasibility of an open peer review system. Such a system would have the advantages of accountability, fairness and transparency. The quality of the reviews would not suffer and might rather be improved. On the other side of the argument is the probability that an open peer review system might lead to strained professional relationships, loss to the reviewer process of reviewers who decline to be identified, and increased number of manuscripts recommended for publication for the editors to consider.

The strong point in blinded review is the avoidance of bias often tied to the expectation that the author and the reviewers do not know themselves. But bias has been shown to always occur. Authors are very skilled persons, and have other caveats that could help unravel, to an extent, the

likely identity of the authors of articles they review. For instance, development in content analysis of textual data show that it is possible to establish the author of an anonymous article, and this is an activity that has been happening intuitively before a formal scientific procedure was developed to establish it. Even the content of the article, the materials and methods, the subject matter, among others are sufficient to point the reviewer to the likely identity of the author, his institutional and geographical origin, or even any other information about the author. When reviewers are biased, they hide under the cloak of blinded review process in which the author of a rejected article is lampooned to believe that his article has been given a fair chance, whereas it is not so. And so the author might put aside a good idea because he feels that the idea is not worth publishing. As a result, many good ideas would have been set aside or published in lower quality journals because they were originally assessed as unworthy of being published in high impact journals.

But open peer review will introduce some checks and balances. An author who feels that her article has not been given a fair chance could contest the report of a reviewer because the author and the reviewer might not be well disposed to each other. Furthermore, a reviewer knows that the author has his identity, and may therefore be wary of any assessments that are not based on objectivity. Moreover, open peer review will link the author with the reviewer. This is very important because the essence of an article is to share ideas and contribute to the stock of knowledge in an area. The author is not standing examination in which another author who, in his status as a reviewer, is the examiner. Every author is a reviewer, and every reviewer is an author. The credo of the publication and review process is to establish whether an article contributes to knowledge, and help the author organise her thoughts so that the content of the article can benefit members of the academic community.

Let us now stratify the scientific community somewhat and see how open peer review could obtain within and among the communities.

The options for electronic peer review

Thus far, we have dealt with issues relating to peer review, highlighting the limitations of the manual process, blinding and other quality control measures. Let us now examine the options for undertaking aspects of peer review activities on the Net. We shall stratify the scientific community broadly as consisting of specific community and universal community, and then suggest how this open peer review system could obtain within each community.

Option one: Community peer review

A 'community' means a group of people with some shared element. A scientific community is usually a loosely knit community of scientists and researchers working on the same subject. Sometimes the term *scientific community* is also used to describe the community of *all* scientists (http://encyclopedia.thefreedictionary.com). The community could be multidisciplinary, interdisciplinary or intradisciplinary. A multidisciplinary group consists of scientists from more than one discipline but their research strategy is usually the adoption of specific techniques and methodologies available in their various disciplines to solve problems. Typical examples could refer to the ubiquitous research groups that exist even in Africa. The Africa Technology Policy Studies (ATPS), for instance, would want to know what people outside engineering and related disciplines would contribute to the question of technology in Africa. On the other hand, interdisciplinary groups have implications for the adoption of a single methodological technique irrespective of the disciplines of the participating scientists, such as the activities of SIGMETRICS, focused on the application of informetric methods in the analysis of literature and related phenomena. Members are drawn from all disciplines but their interest is mainly in the application of informetric tools to analyse literature and other related activities in, preferably, the field of expertise of the scientist. Finally, intradisciplinary groups often consist of scientists from the same discipline who may then be focusing on problems adopting methods suited to their subject specialties. The various professional and disciplinary associations can typify intradisciplinary research groups. Typical examples are the Computer Society of Nigeria, Nigerian Library Association, etc.

Scientists naturally identify with relevant scientific communities. In this era of problem-solving focus of science, scientists are expected to be multidisciplinary, and, therefore, often belong to more than one scientific community. Members of each scientific community often 'know' themselves, and are expected to meet regularly to discuss progress in their disciplines and other issues of interest. In the modern times, this process has been eased by the existence of electronic *listservs,* which enable members of any scientific community to identify their members, their locations, and specific areas of specialisation, among other things.

Two methods of community open peer review can be suggested.

Restricted Community peer review

In this model, the peer review of any article is restricted to selected members of the community whose expertise are either the same with, or

is more closely related to, that of any scientist whose article is being assessed for publication. The articles sent to the journal are circulated to the selected members using the usual electronic medium. The scientists then review the article and return same to the journal editor, who in turn sends the reports to the author for possible revision or otherwise advise the author that the article was not accepted for publication. Except for the electronic intermediation, this procedure nearly mimics exactly the process adopted in manual peer review. Another major difference anyway is that, as expected, the peer review process is flexible, and the journal editor can therefore expand the number of persons to whom he sends a single article, thus increasing the spectrum of opinions that might improve the quality of articles a journal publishes. However, problems may arise when the number of reviewers is very large and the decision on publication of the article is tied to complete response from all the reviewers. A good practice, however, will be to define a threshold number of reviewers whose response is sufficient to decide on whether to publish or not.

Non-restrictive scientific community open peer review
Irrespective of the subject specialisation of scientists, members of the same academic community relatively share the same theoretical concepts and are therefore expected to be conversant with issues in each other's specialties. In a non-restrictive community of scientists, open peer review will refer to the inclusion of all members of a given community as peer reviewers. In this regard, every article sent to a journal for publication is distributed to all the members of the community for peer review. However, a threshold of the number of responses and the range of disciplines required suitable for taking decision on the article is defined. Although the size of this threshold is expected to be higher than the one in the previous model, the relative large size of the community would also be expected to cancel the chances of low reviewer response rates. Furthermore, there may be the fear that when scientists know that every member of the community is a reviewer of the same article, there may be some relaxation with respect to quick responses because 'another scientist will submit his or her own review'. But this limitation will not hamper the performance of this model because the compulsion to contribute one's opinion to a content that will be published in a journal is a pride to the scientist. Also, different scientists share wide varieties of opinions concerning even a single issue, and may want to use the opportunity to influence the content of the article. The advantages include the fact that the variety of reviewers' comments may

cut across various subject areas in the discipline, thus reflecting a true 'community' in the right sense of the word.

Option two: Universal community peer review

In a sense, the whole communities of scientists in the world also constitute a single scientific community. Several scientists have shared different variants of this view at different times. For instance, Cameron (1997) has called for a universal citation database and more that would link every work of science, and scientists together. This opinion is powered by the increasing consciousness that knowledge is just one single coin whose different faces are defined by factors associated with limitations of human beings and the need for specialisation, among other things. In this option, we can also identify two strategies.

Restrictive universal open peer review

In this format, journal houses are a little more transgressive in restricting the disciplinary affiliations of their reviewers. Reviewers are selected from any of the scientific communities that have relevance with the expertise of the article under review. Articles are deposited at a designated venue and distributed to relevant scientists irrespective of their disciplines.

Non-restricted universal open peer review

In this strategy, the opinion of every scientist has potential utility in assessing an article. Hence, the article is deposited in a venue where every scientist can reach, irrespective of discipline. But this strategy may look clumsy to many people and for several reasons. First, sooner or later, there may be an avalanche of articles that are queuing for review. Second, there may be reason to fear that the articles posted for review might not receive the attention of any scientist. Third, and very important, if the expected readers of the article see it in advance, what will be the essence of further publishing the article? These and probably more may border the conventional manual paper review adherent. But scientists are selective of what they read, being busy persons themselves. Also, the fact that every scientist is given an equal opportunity to contribute to an upcoming publication somehow levels the peer review playing ground already macadamised in favour of some very visible scientists, institutions, gender, and regions. Harnard (1996) has suggested allowing 'preprints' of articles to be available on the Internet prior to peer-reviewed publication. Physicists have followed this model for several years now, submitting articles to the e-print archive maintained by Paul Ginsparg at the Los Alamos National Laboratory, in advance of, or instead of, print journals (Taubes 1996). Moreover, if multidisciplinary

approach is considered a universal strategy, then it will improve the chances of reflecting the opinions of scientists of all backgrounds in an article in order to improve its utility. Furthermore, an article is written for information and education, and scientists know this too well. An article that is undergoing peer review is so designated, and the one that is published is also indicated to have undergone peer review. This process is common in communities where the distribution of preprints is a normal process in assessing the suitability of an article for publication.

Processing electronic peer review

We have indicated that the activities that go into the process of peer review can be computerised. There is a variety of software tools that enable the electronic management of peer review processes for elctronic scholarly journals. These tools promise to facilitate efficient and centralised control of the submission, assignment, tracking and publication of articles through the web, as well as enabling a central archive of various tasks performed. Some programmes keep all texts in online format throughout these processes, using multiple windows to allow reading, editing and online publication of articles, while others use automated files transfer protocol (FTP) and e-mail processes to exchange documents in standard formats.

A typical software programme would consist of an author screen which allows authors to submit articles electronically. This screen should provide templates/instructions to authors and other stakeholders for submission, conversion and uploading of content in any format. There should also be automated notification screens that generate e-mails to editors, reviewers and authors, notifying them of articles to be reviewed, as well as reviews or edited copies available online. There is also the editor screen which allows editors to identify, read and notify or assign submitted articles to potential reviewers except when the article could be assigned automatically to reviewers. There also exists a reviewer that should enable the reviewers to read or receive articles, and then post or send their comments and suggested revisions to the editor or author. Depending on the option operated by the journal, an article is assigned to reviewers and tracked. The event logging enables the retrieval of list of appropriate editors and reviewers and tracks those who choose or who are assigned to particular articles. This makes it easy to check the status of reviews. Very critically, the programme should automate the assignment of reviewers based on article categories. In other words, nomination of reviewers should be automated. In a typical open and non-blinded peer review process, the identities of the authors and the reviewers are not hidden. Com-

munication between the author and the reviewer is allowed, although tracked and logged. There should also be flexible authorisation in which articles or reviews in process are made available to different users. The reason is because the reviewer may need the opinion of other experts who were not originally considered relevant. All through the process, there is a quality/category tags which provide standard tags to enable the editors mark pre-print articles for quality and proper classification. The software should also provide screens for writing and saving or sending finished review to editor. Some split-screen allow devices can serve this purpose so that the reviewer can view an excerpt of an article while writing his report by the side.

It is also possible for authors to choose whether their articles should be reviewed blind/doubleblind or open. The software should contain enforcement nagging, which reminds the reviewer or even the author about deadlines for submission of reviews and also automatically sends e-mail reminders. Editors are also alerted about completed, pending or overdue reviews, the number of reviewers reports already received for a certain article, the characteristics and identities, results regarding whether to publish or not, among other things are logged for the editors to monitor. Finally, there should be automatic posting formats which publish articles that have received a proper number and quality of reviews. The software should also notify subscribers about the publication of a new article, contain summaries, abstracts, tips etc.

These suggestions may sound too radical. But they show the actual place where the Internet revolution has placed us today, and more importantly, hold a lot of promise for the participation of developing countries' scholars in mainstream science.

Opportunities for mainstreaming developing countries' scientists

Several studies have shown that the participation of developing countries scientists in mainstream science is low. The reasons for this are often tied to the low quality of science in such regions, among other factors. There is a very low proportion of published articles creditable to authors from low income countries in many research fields, including psychiatry, cardiovascular disease, and epidemiology and HIV/AIDS. This situation remains so even though the current global burden of infectious and parasitic diseases is heavily concentrated in the developing world. The large number of national and international initiatives that have been launched to improve research capacities in developing countries in the recent years is evident.

Crucial questions obviously arise. Why do scientists affiliated to countries with low or medium human development indices seem to play less dominant roles in the research and control of tropical diseases that affect them specifically? How then do they share their experiences and disseminate their findings in the peer reviewed international literature? What is the solution to the continued low representation of developing countries scientists in international indexes? Answers to these questions cannot be sufficiently provided here. But it is sufficient to state that research into the diseases that affect persons from countries with low human development indices cannot be complete without the input of scientists from such countries. Based on interviews with more than 100 scientists and journal editors, Gibbs (1995) concluded that the near invisibility of less developed countries in scientific information may reflect not just the actual quality of Third World research but also biases and economics of scientific publishing worldwide. More than economic, there is also the political angle to the low assessment of African and other developing region scholars. For instance, international citation indexes deliberately keep the number of developing countries sources they include in their indexes very low. The low level of indexing of sub-Saharan African health and biomedical journals in the world's leading bibliographic information sources, such as *MEDLINE* is a good reference.

According to Lippman, indexed articles related to Africa come from just over 1,160 different periodicals, of which only 14 (about 1.2 per cent) are from Africa, and of the 14, seven are from South Africa. He further elaborated that most African publications are not indexed anywhere, since the 1.2 per cent of indexed African literature does not include the wealth of research papers, reports by ministries and NGOs, theses and dissertations from African medical schools, and other fugitive literature that is often of primary importance. As a result, access to this information is inadequate. It is generally believed that 80 per cent of the world consists of developing countries which encompass 24.1 per cent of world's scientists and 5.3 per cent of its research expenditure; and that these countries only show a participation of 2 per cent in the indexed output of scientific information. Even within the region, there are scientists who have suggested that African science is published and more available elsewhere (Akhigbe 1990). The above positions cannot be altogether true. The simple fact is that African research outputs are not indexed locally as a basis for assessment of their science. The low state of science, the inward looking nature of publications in this region, and the expectation that scientists often address problems in their immediate environments, among oth-

ers, support the expectation that scientific outputs are mainly published locally, and in sources that do not meet the requirements of the indexing services of the West. In any case, and as a result, developing countries' input into mainstream science is rated low.

In recent times, a new dimension of the low participation of developing countries scientists has also been spotted. It relates to the fact that developing countries' scientists do not also participate in the review of those mainstream journals, which are the basis for their low assessment. Serious under-representation of developing countries' scholars in the editorial and advisory board membership has been documented recently. There are ubiquitous findings of imbalanced editorial and advisory boards of general medical and psychiatry journals to the literature on tropical medicine, for instance.

Electronic review will provide an unbiased platform. This platform will transform the process and structure of science so that researchers from developing countries can both respond and contribute to issues that relate to their local needs. It is also an opportunity for them to cancel erroneous opinions about them, share their research findings, and possibly struggle to mainstream with international scholars. This will definitely be a key factor in reducing the intolerable burden of infectious and parasitic diseases that continue to affect poor the people worldwide disproportionately and might consequently be an important strategy towards improving the participation of developing countries in international science.

Conclusion

No doubt, this paper might have raised more questions than answers. What about the publishers? Will journal articles not become so easy to write? Will the status of the author not be compromised? Will there not be a long list of reviewers' comments, which may delay the revision of an article, and also probably subsequently infringe on the advantage of the speed of the electronic process? Will there not be contrasting views concerning the content of the article, which may further confuse the author? What about journal ownership? How will the editor be remunerated? How will the users of the e- journal pay for the journal services? What will happen to the publisher, the copyright question, and so on? The fact is that a new era has dawned on us – the electronic era – and this era carries with it challenges for human beings to reorganise and restructure the way they live, think and do things. If the Guttenberg machine displaced the historical manual copyists, then who and what should be displaced by electronic peer review should not be a central focus.

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The Challenges and Possibilities of New Media in African Scholarship: The Case of *Safundi* and U.S.-South African Comparative Studies

Christopher J. Lee[*] and Andrew Offenburger[**]

Abstract

With the publication of several seminal works in the 1980s and 1990s, George Fredrickson and others informally established the field of U.S. and South African comparative studies. The commercial and critical success of these works catapulted such comparative scholarship from the footnotes of research papers to a subject actively engaged in academic circles.

For the past five years, the journal *Safundi: The Journal of South African and American Comparative Studies*—and its online community—has sought to develop the comparative field beyond the foundation provided by Fredrickson *et al* by harnessing the strengths of electronic publishing. The result has not only been a deepening of knowledge and broadening of disciplinary focus, but the website and its related resources have improved knowledge dissemination and community building amongst comparative scholars in and out of Africa.

Using the development of *Safundi* as a case study, Andrew Offenburger and Christopher Lee discuss the possibilities, challenges, and ultimate importance of electronic publishing to Africa-related scholarship. The authors trace the development of *Safundi* from its debut in 1999 to its five-year anniversary in June 2004, a period of time when *Safundi* expanded from an academic journal to an entire comparative community of two thousand members worldwide, with an editorial board of scholars from Africa and elsewhere, and with varied online resources: *The Safundi Member Research Newsletter*, the Online Member

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Database, the Comparative Bibliographic Database, and a compendium of comparative syllabi.

Issues of information access, online databases, electronic journal publishing, electronic resource sharing, and community building, among others, are addressed both qualitatively and quantitatively, as revealed by the *Safundi* example. The authors also set this case study within a historical context and suggest ways that the journal—and Africa-related electronic scholarship, more broadly—may further develop in the immediate future.

Résumé

Avec la publication de plusieurs œuvres précurseurs dans les années 1980 et 1990, George Fredrickson et d'autres ont officieusement développé le domaine des études comparatives entre les États-Unis et l'Afrique du Sud. Le succès commercial et critique de ces œuvres a catapulté cette étude comparative, partant des notes de bas de page des documents de recherche vers un sujet activement engagé dans les milieux universitaires.

Pour les cinq dernières années, la revue *Safundi*: *The Journal of South African and American Comparative Studies* (Revue des études comparatives Sud-Africaines et Américaines)- et sa communauté en ligne- ont cherché à développer le domaine comparatif au-delà de la fondation fournie par Fredrickson *et al* en exploitant les points forts de l'édition électronique. Le résultat a non seulement été un approfondissement de la connaissance et l'élargissement de l'accent disciplinaire, mais aussi le site Web et ses ressources connexes ont permis d'améliorer la diffusion des connaissances et le développement de la conscience communautaire parmi les chercheurs en matière d'étude comparée à l'intérieur et en dehors de l'Afrique.

Utilisant le développement de *Safundi* comme une étude de cas, Andrew Offenburger et Christopher Lee discutent des possibilités, des défis et de l'ultime importance de l'édition électronique pour la recherche relative à l'Afrique. Les auteurs retracent l'évolution de *Safundi* depuis ses débuts en 1999 jusqu'à son cinquième anniversaire en juin 2004, une période où *Safundi* est passé d'une revue universitaire pour s'étendre vers une communauté comparative de deux mille membres dans le monde, avec un comité de rédaction composé de chercheurs d'Afrique et d'ailleurs, et avec diverses ressources en ligne: *The Safundi Member Research Newsletter (*Bulletin de recherche des membres de *Safundi)*, le Online Member Database (Base de données des membres en ligne), the Comparative Bibliographic Database (Base de données bibliographiques comparatives), et un recueil des plans d'études comparatives.

Les questions liées à l'accès à l'information, aux bases de données en ligne, à l'édition de revues électroniques, au partage des ressources électroniques, et au développement de la prise de conscience communautaire, entre autres, sont abordées tant qualitativement que quantitativement, comme révélé par l'exemple de *Safundi*. Les auteurs ont également mis cette étude de cas dans un contexte historique et suggèrent des moyens que le journal—et les recherches électroniques

relatives à l'Afrique, plus largement—peuvent développer davantage dans l'avenir immédiat.

Introduction

Open the e-mail accounts of *Safundi* editors on most mornings, and you will find article submissions and ideas for future journal issues, messages from new journal members introducing the nature of their research, and the ubiquitous inheritance e-mail scams that promise fortunes from some late distant relative once in succession to the crown of an African country. Hardly a day goes by without receiving each of these three types of correspondence.

Seen through the eyes of conference participants today, the e-mails mentioned above can be arranged into three themes that are important to new media in African scholarship:

- Dissemination of information,

- Community building, and

- Effective and responsible use of new technologies.

These themes have been equally important—guiding principles, in fact— to the editors of *Safundi: The Journal of South African and American Comparative Studies* and to the members of its online community since its founding in 1999.

Over the course of the past five years, what began as an online publication known as *USA-SA.com* has developed into an online community of scholars with access to two publications (*Safundi: The Journal of South African and American Comparative Studies* and the *Safundi Member Research Newsletter*), an online comparative bibliographic database, an online member directory, and a number of comparative syllabi. *Safundi*,[1] therefore, offers a significant case study for evaluating the role of online publishing and its relationship to African scholarship for two main reasons.

First, the development of *Safundi* has coincided with the expansion of Internet resources for the public and, more specifically, for scholars with research interests in Africa. Its beginning, though not quite as romantic as the mythic 'some kid in a garage with a computer and an idea,' was just as simple and financially endowed. As the Internet became more common globally, *Safundi* – and interest in its publication – grew. Today, as the editors of print and online publications contemplate the future of their journals (e.g., whether to go online, which financial model to follow, and how

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to protect copyrighted materials), *Safundi*'s editorial board finds itself confronting the same issues.

The second reason for *Safundi*'s significance as a case study is its unusual history and status vis-à-vis publishers and the issue of academic affiliation: the publisher is neither housed at a university nor located in the electronic branch of a major publishing company. Rather, Andrew Offenburger has published the journal as an independent scholar with an interest in U.S.-South African comparative studies and with advanced experience in website design and programming. For this reason, many constraining financial factors did not and still do not apply to *Safundi*, although profitability issues do parallel those currently experienced in the industry. In general, the history and ongoing experience of *Safundi* suggest the multiple ways in which online publishing can be established and take hold – at times beyond formal academic and publisher settings – with the crucial element being *commitment*, intellectually and editorially.

With these thoughts in mind, this paper will consist of three main parts:

i.   A history of our electronic journal and community (placing it within a historical context of United States and South African comparative studies as well as the context of the post-Apartheid period and its historiographical trends);

ii.   An evaluation of *Safundi* today and issues related to online publishing; and

iii.   Speculation on its future development and, more generally, on the prospects of Africa-related electronic publishing.

Various themes pertaining to online publications and African studies shall be addressed within the aforementioned sections, with particular emphasis on – as mentioned at the beginning –content dissemination, community building, and effective and responsible use of new technologies.

A history of *Safundi* and U.S.-South African comparative studies

The idea to create an online publication to compare the United States and South Africa came to Offenburger in 1998 as then-President Nelson Mandela toured the United States and, more importantly, after reading George Fredrickson's two landmark comparative studies – *White Supremacy* and *Black Liberation* – earlier that year.[2] Fredrickson's books, published in 1981 and 1995 respectively, together with other monographs in the 1980s and 1990s by John Cell, Robert Massie, and Stanley Greenberg,

formed the 'first wave'[3] of comparative U.S. and South African studies, although notable works on the two countries were published as early as 1915.[4] By the mid-1990s, Fredrickson and others had unofficially established the field of U.S. and South African comparative studies. The commercial and critical success of their works catapulted comparative scholarship from the footnotes of research papers to a subject of active engagement in academic circles. A new field had taken hold.

At the same time, *Safundi* also came of age in the context of the early post-Apartheid period, a time for introspection and reassessment, politically, socially and, in many ways, intellectually. The politics of researching and writing South African history amidst this new period has yet to be fully defined, though several features have emerged. Influenced by trends in Great Britain and the United States, the generation of social historians who came of age during the 1970s – among them Shula Marks, Colin Bundy, William Beinart, and Charles van Onselen – set an early agenda of seeking to recover the histories of South Africa's black communities and their various corollaries: the histories of workers, peasants, women, and other social groups that had largely been overlooked by the South African academy. These central themes continue today, though new approaches have been added as well. Among them, the practice of public history – through museums, memorials, and other public displays – has developed as an important new area, bridging the divide between academic history and popular history through such sites as Robben Island and the new Apartheid Museum in Gauteng. Related to this trend is work that has attempted to complicate the practice of history itself: the social purpose of history, its relationship to politics, and its role in shaping perceptions of both the past and the present. Recent work by Carolyn Hamilton and Leslie Witz embraces this outlook with their respective examinations of the historical lives of Zulu leader Shaka and Jan van Riebeeck, the Dutch captain who established Cape Town in 1652.[5] However, perhaps the most important trend that has yet to be fully manifested is one proposed in Mahmood Mamdani's *Citizen and Subject* (1996): the need to integrate South Africa more completely into the historical trends of the continent.[6]

Mamdani's call is not new. In the introduction to the first edition of the *Oxford History of South Africa* (1969), Leonard Thompson underlined the need to connect the experience of black South Africans with those of other African communities elsewhere on the continent. Historical work from the 1970s followed this suggestion, though perhaps not always explicitly so: transcontinental comparisons did not become a norm. Mamdani's

insistence on the similarities and parallels, then, and the need for an 'African unit of analysis' has, therefore, been a welcome invitation.

Safundi agrees that the South African experience should be opened to comparison – perhaps the academic equivalent of 'ending sanctions' – though, as discussed previously, our points of reference are different. And if there is a need to assuage concern that such comparisons with the United States are purely academic, it is perhaps important to underscore here that U.S.-South African comparisons have been engaged previously on a number of occasions by intellectuals and activists on-the-ground, what has also been referred to as 'comparative history from below.' For example, in his study *Songs of Zion* (1995), James Campbell demonstrates how the African Methodist Episcopal Church in the first half of the twentieth century provided a 'looking glass' for black Americans and black South Africans, an institutional setting that enabled transnational comparisons of black experience to take place at a local level.[7] Comparisons were also made by others who observed and travelled between both countries, from Ralph Bunche and Robert F. Kennedy to activists of the Black Power (U.S.) and Black Consciousness (S.A.) movements. Such comparisons were important, enabling activists and intellectuals to recast their perspectives and struggles within a broader frame of reference: their experiences were not isolated, but part of a common, global struggle for civil rights. *Safundi* embraces a similar approach with the goal of recasting how U.S. and South African history is understood at local, national, and international levels.[8]

Safundi has, therefore, come of age during a complex period of technological, political, and historiographical change. *Safundi*'s original goal was not necessarily to publish an academic journal as much as it was to use new technologies to foster dialogue between scholars and citizens from the two countries, be it within academic, essay, journalistic, or creative writing. The first issue of *Safundi*[9] reveals this inclusiveness, featuring one academic article, one essay reprint, transcripts of Nelson Mandela and Thabo Mbeki's inaugural speeches, and a collection of newspaper feature articles. With no editorial board, no funding, few registered members, and a desire to develop the comparative field beyond the foundation provided by Fredrickson *et al*, *Safundi* indeed had a humble beginning. By August 2000, however, the website and its journal had turned a corner. The second journal issue had been posted online,[10] *Safundi* became the official name of the journal and online community, and fifteen scholars were named to serve on the first editorial board.

Among the initial issues the board needed to address was where to 'draw the line,' geographically and theoretically, which became evident when one outside historian questioned the appropriateness of the journal's title:

> Are we to assume, from its name and from its invitation to contributors, that the Journal of South [not Southern] African and American Comparative Studies is limited to the boundaries of the present republic misleadingly called 'South Africa' but extends on the other hand to something called 'America' which stretches from the Aleutian Islands to Tierra del Fuego?[11]

This problem appeared easy to answer with some semantic adjustments, i.e., renaming the journal to the 'Journal of Southern African and United States Comparative Studies,' but the theoretical and practical questions ran much deeper. As the *Journal of South African and American Comparative Studies*, what would we define as 'South African' or 'American'? Would comparing the two countries be a prerequisite for publication? Would this theoretically locate our journal on boundaries and borders despite our wish to cross them? Finally, would such comparisons become highly determined, serving to necessitate both places and demonstrating what Mamdani has disparagingly called 'history by analogy'? These questions were further linked to and complicated by the electronic medium – or 'public history' format – used by *Safundi* for such explorations. How might the use of online publication methods reinforce or circumvent these problems?

After some discussion, and despite leaving many of these questions unanswered, *Safundi* retained its name as the *Journal of South African and American Comparative Studies*. We would need to identify borders, after all, in order to cross them. The editorial board came to the consensus that it would give priority to comparative articles and print research papers directly addressing one country so long as they would be of interest to the comparative scholar. In this statement, the board purposely left room for interpretation.

Related to these issues, another topic discussed at some length by the board was whether or not to complement the electronic journal with a print edition. *Safundi* distributed a survey in August 2001 asking this question, among others, and 69 per cent responded favourably to the prospect of a print edition of the journal.[12] On the one hand, print journals carry more prestige at present, although this belief is changing slowly. On the other, this temporary prestige comes at the cost of much higher production expenses and exponentially slower research dissemination, two of the board's greatest concerns, which were even more relevant concerning

the international nature of the journal. The argument for publishing exclusively online strengthened when the board took into account *Safundi*'s unique position in academia. Electronic publishing enabled *Safundi* to reach its global audience instantly, at no cost to the reader, and with no production fees.[13] What disadvantage this brought in terms of prestige has been compensated with anniversary print issues.[14]

A final consideration in the creation of *Safundi* – left entirely to the publisher to decide –concerned the financial model the journal and community would follow. A journal with such a specific topic as *Safundi*'s – particularly a new journal – could not generate enough demand to warrant the adherence of a pay-per-issue financial model. Such a decision would effectively kill its readership. Equally unfeasible in the long term are free electronic journals. Valiant as the efforts might be, unless housed within an academic department, privately published open-access journals are ultimately doomed endeavours.

In the case of *Safundi*, the financial model has changed over time due to rising costs and the expansion of (i.e., more work required by) the journal and other resources. From its debut in 1999 to the publication of Issue 3 in October 2000, website visitors read all articles free of charge; registration as a member (providing contact information) was available to those who wished to join the e-mail list. Between October 2000 and December 2003, visitors to *Safundi* freely viewed the latest issue of the journal, and only those who registered as members (again, those who provided contact information yet paid nothing) could read past issues. Since December 2003 *Safundi* has continued to give free access to the most recent issue of the journal and newsletter while requiring member registration to download the penultimate journal issue and newsletter; premium website services – admittance to the journal and newsletter archives and access to the online member directory, comparative bibliographic database, and collection of comparative syllabi – have been restricted to '*Safundi* Scholars,' or those members who pay an annual fee.[15] With this system, *Safundi* has attempted to find a middle ground between maximising information access and covering expenses.

The changing of *Safundi*'s rates and open-availability exemplifies how the website and journal have adjusted to shifting trends in the market and expanded in conjunction with the rise of online publication and interest in U.S.-South African comparative studies. The major milestones discussed above – not to mention key additions to the website, such as the publication of the first *Safundi Member Research Newsletter* – propelled the community to become the diverse forum for scholastic exchange that it is

today. Having considered its history and place within the field of U.S.-South African scholarship thus far, we shall now discuss the current state of the community and related issues in African scholarship.

Safundi, electronic publication, and its role in academia

As of July 2004 *Safundi* has published fifteen issues of its *Journal*, nine *Research Newsletters*, and three databases: the Online Member Database, the Comparative Bibliographic Database, and the Database of Comparative Syllabi. Our community is comprised of 2,139 members from 44 countries. *Safundi* Scholar subscriptions, both personal and institutional, are in their infancy, but recent sales are promising: Stanford University and the University of Cape Town have joined as institutional subscribers. These positive indicators – not without their corresponding challenges – and the progress and setbacks experienced by *Safundi* speak to the state of online African scholarship today, and are best explored by discussing individually the five components of our community.

Safundi and electronic journal publication

In an e-mail sent to the *Journal* in 2003, one potential author asked several questions 'about *Safundi* as an electronic journal,' and identified two reservations that many scholars share about publishing articles in a digital format. After introducing the nature of the proposed research, the scholar wrote: 'If the journal evaporates into cyberspace then the 'evidence' of my professional productivity will be diminished. I am also concerned about dishonest readers who may misuse items published in *Safundi*.'

This e-mail touches upon three of the most important issues of online publishing:

    i.   Permanence;

    ii.   Protection against plagiarism; and

    iii.   Acceptance/legitimacy within the academic community.

These issues are important to any journal, whether online or in print, though the electronic format of *Safundi*, as with other online publications, has made it particularly vulnerable to such concerns. Despite its tremendous advantages for displaying, disseminating, and storing information, the Internet continues to be an uncertain realm legally and in terms of longevity from the standpoint of individual websites. Both of these factors in turn have affected the sense of 'legitimacy' of writing published on the Internet. Is writing online 'published' in the same way as articles found in print

journals? Does the low cost and 'instantaneous' nature of online publishing work against it? In sum, can the Internet become a place of accepted scholarship equivalent to that found in print?

It *can* be. On one end of the spectrum, the Internet is a provider of unethical misuse inherent in e-mail frauds and plagiarism; on the other end, it has the greatest potential for research dissemination and community building available today. The issue of permanence and protection have been discussed previously – through the commitment of the publisher in website maintenance, the role of special print issues, and the function of membership and accessibility – though the general issue of legitimacy is more complex, in so far as it deals with inchoate qualities of public perception and opinion. The *Safundi* example has shown that one path to acceptance and academic rigor rests in maintaining certain *continuities* with print *journals*, in particular that of the *peer-review process*. Of the five requests from former *Journal* contributors to write letters on their behalf in support of tenure or other promotions, all five have emphasised the importance of mentioning our peer-review process, 'so they know it's not just a website,' as one said. Attention to established editorial norms is, therefore, a crucial component for creating a sense of legitimacy and gaining acceptance. Such continuities serve to blur the boundaries between print and online media, for the benefit of the latter.

For now, however, websites still carry the burden of proof: whether commercial or non-profit, they are often worthless until proven valuable. In this sense, one of the Internet's distinct advantages is the use of multimedia. Although seemingly obvious, this is still underestimated and consequently underutilised. At two points in the *Journal's* history, scholars harnessed this distinct power. In Issue 2 (July 2000) Colette Gaiter, a graphic designer and assistant professor of journalism at the University of Minnesota, looked at race, culture, and gender in post-Apartheid South Africa and the United States in her multimedia exhibit, 'The Natural Order of Things.' Larry Shore of the Department of Film and Media Studies at Hunter College presented his multimedia website, 'Ripple of Hope in the Land of Apartheid: Robert F. Kennedy in South Africa, June 4th-9th, 1966,' in *Safundi* Issue 9 (May 2002). Each of these 'articles' – websites, really – use Macromedia Flash, pictures, and audio and video clips to investigate currents of U.S.-South African comparative currents. These two examples show that despite one's outlook on prestige and acceptance of online scholarship vis-à-vis print publications, the Internet can be credited as fostering a new format for academic investigations.

However, with this new technology also come new sets of problems to be addressed: e-mail filters blocking subscribers' newsletters; dealing with several operating systems, platforms, programming languages, privacy, and security mechanisms; and the continual monitoring of a site's accessibility. Last year, only after several weeks of undelivered mail and hours of research did we learn that all e-mails to subscribers at the University of Cape Town were being returned because *Safundi*'s hosting provider had been erroneously listed as a possible spammer.[16] In many ways, legitimate online publications pay the intangible debt that spammers and hackers accrue. Another component, at times a challenge, of online publication is linking from external resources, particularly from search engines. For the three-month time period relating to the publication of Issue 13/14 (April-June 2004), *Safundi* received 6,290 page hits, 870 (13.8 per cent) of which came from search engine links and 865 (13.7 per cent) from another external site. Of these visitors, 541 (8.6 per cent) bookmarked the website. Being vigilant about ensuring availability to new readers and researchers – viewing the journal from 'the outside in,' as it were – is therefore an important aspect of maintenance.

Taken together, the aforementioned benefits and challenges of publishing *Safundi* in electronic format underscore the importance of online publication and the ethical and effective use of new technologies. With reasonable trepidation, the scholarly community inches towards pervasive digitisation and increased information access. For a discussion on the latter, we now turn to another *Safundi* example: the *Member Research Newsletter*.

The safundi member research newsletter and information access

Introduced to the *Safundi* community in June 2003, the *Research Newsletter* aimed to better connect scholars on both sides of the Atlantic by 'printing' in PDF format a feature article, member responses, calls for papers, new research notices, and conference announcements of interest to the U.S.-South African comparative scholar. Through this shorter publication, *Safundi* sought to create a more participatory international community enabled by the novelties of the Internet. At this point the two authors of this paper began to collaborate, as Contributing Editor Christopher Lee crafted articles on timely topics that offered the grounds for comparison between the United States and South Africa, as well as exploring larger thematic currents such as colonialism ('The Social Life of Images: Power, Spectacle, and the Role of the Visual in Colonialism'), imperialism ('Imperialism Then and Now: Reflections on the U.S. Occupation of Iraq'),

and education ('Brown v. Board of Education at Fifty: Education, Equality, and the Unfinished Nature of Democracy').

Like the journal, the *Newsletter* has enabled the *Safundi* community to have access to the latest comparative research at no cost. Together, the two have sparked further interest in the field and intensified the importance for accessible information: on average, every week around the release of a new *Newsletter*, traffic to the *Safundi* site increases threefold. Such information access has played a formative role in editorial board decisions and philosophical discussions on the role and future of *Safundi*, and its most important function has been to help bridge an 'African digital divide.'

Though coined elsewhere, 'digital divide' is used here in a specific sense:

- Creating publications and online forums to better link the two countries; and

- Facilitating increased South African Internet connectivity and use.

Not many U.S.-based print journals are available in South Africa, and even fewer are available vice versa. As of yet, this distance has not been bridged through online connections, demonstrating the first aspect of the divide. The second part can be seen in the following statistic: of the 2,139 *Safundi* members, 1,248 (58.3 per cent) reside in the United States and 536 (25.1 per cent) in South Africa; yet, of the total count of website visitors, 52 per cent come from the former and only 10 per cent from the latter. Ever since *Safundi*'s creation, the proportion of South African-based visitors to U.S.-based hits has been climbing. Much digital distance has been reduced. With the *Safundi Member Research Newsletter* and other electronic resources, notably H-Net and African Journals OnLine, the future is promising.

In light of the importance of wider information availability, a larger theoretical question persists: will computer technologies bring more voices to the discussion and study of Africa or, viewed through notions of the 'digital divide,' will it stratify the field into different sets of users, print and internet? Therefore, in crossing some boundaries, are we indirectly reinforcing other ones? When considered in the context of the U.S.-South African comparative field, one can assertively show that drawing parallels, making connections, or marking differences – in a word, comparing – the two countries does usefully cross borders and productively opens the field to new approaches and discussions. Our concern here, then, is with the unintended consequences of online publishing, of creating 'communi-

ties' that may be more exclusionary in practice than initially wanted or anticipated, which brings us to the next section.

The online member database and community building

As suggested previously, a distinct benefit of extensive digital networks is online community building. The *Safundi* Online Member Database was created specifically to create a strong network of researchers interested in comparing the United States and South Africa. Those members who have *Safundi* Scholar access may search the database of registered members by name, university/organisation, and research interest. Each person's profile can be browsed, complete with contact information, research interests, and personal biography, if available. In short, members interested in connecting with academic counterparts in other countries have a way to find each other. This differs only slightly from other available resources such as the database of African scholars available online through the Columbia University library in that it can connect those people who might not see themselves as Africanists but who wish to speak with a related expert in the other country.

The appeal to 'join our community of comparative scholars' appears in most *Safundi* promotional materials and e-mail invitations sent to scholars. Over the life of *Safundi*, 4,876 such invitations have been personally sent,[17] and the typical response rate fluctuates between ten and 12 percent.

Invitations are a key element to growth. The development of the *Safundi* community – particularly within academic circles[18] – can be attributed in part to these invitations. Membership has grown an average of 50 per cent every six months. Put another way, it took 28 months to register the first 500 members, and thence only 7, 11, and another 11 months for each of the next 500. This accounts for removing duplicate entries and persistently invalid e-mail addresses. It is also useful to mention that 38.3 per cent of *Safundi* members have a PhD., with another 37 per cent to earn their PhD. during the next two years. These figures not only point out the intellectual calibre of the community but also its relative youth. We see bringing in younger scholars who are just beginning their careers – and who often have more media awareness – as a key strategy in ensuring the long-term development of *Safundi*.

At the same time, one part of community building where *Safundi* has fallen short is in the recruitment—or perhaps interest—of members from other African countries (28 of the 2139 registered members [1.3 per cent]). This situation is a tangible reflection of the digital divide mentioned previously. It is our hope and intention that participation in today's conference

begins the process of increasing the awareness of *Safundi* throughout the continent at large.

Comparative Bibliographic Database and Online Databases in General

The next logical step in developing an online research-focused community is to share the members' research with one another. In December 2003, *Safundi* unveiled the Comparative Bibliographic Database, an archive of bibliographic references on U.S.-South African articles of interest to the comparative scholar.[19]

References to other comparative works have been especially useful for teachers and professors looking for lesser-known articles, and underscore the importance of providing additional resources for members wishing to dig deeper than the *Journal* and *Newsletter*. *Safundi* has further extended the utility of existing data by uniting the Comparative Bibliographic Database with the Online Member Directory. That is, if a citation exists in the bibliography that has been written by a scholar who is a member of the *Safundi* community, the system displays a graphic and that author's profile becomes visible with a single click.

Online databases and bibliographies available outside of *Safundi* have been of importance to its development, as well, though on a smaller scale.[20] The *Journal*'s indexing in Africabib.org, an online bibliographic database, draws new members to the website every month. Moreover, other indexing services and bibliographies – such as Historical Abstracts – can particularly help online publications by lending more credibility to the new media in the eyes of sceptics. Article placement within such databases is, therefore, a crucial need for publicising the work published in *Safundi*, with an outcome being further recognition of *Safundi* as a journal equivalent to those in print.

Database of comparative syllabi and electronic resource sharing

The final component of *Safundi*'s online offerings highlights both the potential value and threat of electronic resource sharing. The Database of Comparative Syllabi – a resource still under development with some fifteen syllabi at present – allows academics to share their course materials in a secure environment. Some professors more than others see their syllabi as creative works or academic exercises and are less likely to share their syllabi without a control mechanism in place. For this reason, the Database is available exclusively to paying *Safundi* members.

Like the potential contributing author above who was 'concerned about dishonest readers who may misuse items published in *Safundi*,' many scholars are rightfully concerned about the ease of plagiarism and general misuse of new technologies. The very issue of such importance to the Editorial Board[21] – information access and research dissemination – can at times provide the greatest cause for concern. With a watchful eye and appropriate security measures in place, the risk of abuse of electronic resources can be lessened and the benefits of online networks enhanced. Again, editorial commitment is the important element here.

Summary

To summarise, the five resources published by *Safundi* discussed above essentially serve as five different ways to bridge the Atlantic Ocean: by academic examination in the *Journal*, current trends and discussions in the *Newsletter*, personal connections in the member database, research dissemination in the bibliographic database, and pedagogical links in member syllabi. These 'bridges' have strengthened over the last five years with rising interest in electronic publication, in addition to new approaches to the study of Africa (e.g., the expansion of studies on the Diaspora) that have also encouraged transnational and transcontinental work. These developments have displayed both rewards and challenges unique to online publications and to African research generally. Viewed through the lens of the *Safundi* experience, then, the immediate future of new media in African scholarship begins to come into focus.

The future of *Safundi* and new media in african scholarship

In the immediate future, *Safundi* will not 'evaporate into cyberspace'; nor will online publishing fall by the wayside. If the *Safundi* experience serves as an accurate barometer, the partnership of electronic media and African scholarship will continue to create novel insights and enhance current scholarship. The new medium offers distinct advantages to print – we hesitate to use the word 'traditional' – publication, namely:

- Cheaper production expenses;

- Faster research dissemination;

- Less expense for the reader; and

- The potential of an instant global audience.

Though perhaps transparent at this point, it is important to emphasise that electronic publishing is still at an early stage and, consequently, further

experimentation –both success *and* failure – is necessary: there is no single, fail-proof method. However, in line with the strengths listed above and the points outlined previously, there are four summary observations that can be offered as guiding principles for the future of online publishing. These relate to:

    a. Academic legitimacy;

    b. Community building and publications development;

    c. Editorial commitment; and

    d. Permanence.

The most important and least tangible aspect of electronic publishing that will shape *Safundi*'s future and that of Internet-based African scholarship is the academic legitimacy ascribed to online journals. To this end, finding a balance between open availability and copyright protection is critical. Continuing the peer-review process and other established traditions of quality control will help, too. Crucial to the success – and this will likely happen naturally – is the collaboration between well-established scholars and their younger, more tech-savvy counterparts to further increase scholarly acceptance of the new medium.

Second, growing electronic social networks through community building and ongoing development of the related publications promises to be an integral factor of electronic publishing, as well. Since its founding days, *Safundi* has aggressively recruited researchers and members of the public to visit and evaluate its website. This has significantly increased the rate of new memberships, a rejuvenating force that has sparked the development of existing and new resources. The importance of this resource diversification – specifically for privately funded online communities – cannot be understated. Neither of *Safundi*'s individual components would bring in enough revenue to be worth the added expense of payment systems, but the five resources together are enough to pay recurrent expenses and provide a very modest profit (which is ultimately used to purchase software or other business-related services).

Publication diversification can also speak to editorial boards of the future, who should seek ways to take advantage of the online medium and expand editorial focus when appropriate. For example, *Safundi* will publish a special pedagogy issue in October – guest edited by Larry Shore – with articles on teaching South African studies in the United States and vice versa. The special issue will give scholars from different disciplines

Table I: Key Events in the Development of Safundi

1999	*June*	*USA-SA.com* Issue 1 (1 article, 2 reprints, 1 transcript)
	July	*USA-SA.com* Issue 2 (2 articles, 1 multimedia presentation)
2000	*August*	First Editorial Board named (15 editors)
		USA-SA.com becomes *Safundi*
	October	Site Design II
		Issue 3 (3 articles)
	January	Issue 4 (3 articles, 1 translation, 1 review)
	April	Issue 5 (8 articles, 1 review, 1 poem)
	July	Issue 6 (6 articles, 1 reprint)
2001	*August*	Editors-in-Chief named
		Survey results returned
	September	Site Design III
	October	500th member
	November	Issue 7 (4 articles, 2 reviews)
2002	*February*	Issue 8 (4 articles, 6 reprints, 1 review, 1 obituary)
	May	1,000th member
		Issue 9 (3 articles, 1 multimedia presentation, 1 review)
		Safundi book published.
	January	1,500th member
	April	Issue 10 (2 articles, 5 reprints)
		Editorial Board renewed (37 editors)
	May	Site Design IV
		Safundi Member Research Newsletter (*SMRN*)
	June	introduced
2003	*July*	*SMRN* Issue 2
		Issue 11 (2 articles, 1 reprint, 1 review)
	September	*SMRN* Issue 3
	October	*SMRN* Issue 4
		Issue 12 (2 articles, 2 reviews)
	November	*SMRN* Issue 5
	December	'Safundi Scholar' subscriptions available
		Institutional subscriptions available
	January	*SMRN* Issue 6
	March	2,000th member
		SMRN Issue 7
2004	*April*	Issue 13/14 (6 articles, 1 interview, 1 reprint, 1 review)
	May	*SMRN* Issue 8
	July	*SMRN* Issue 9
		Issue 15 (3 articles, 2 reprints, 1 review, 1 translation)
	August	Semester subscriptions available

Table II: Safundi Survey, August 2001

1. What is your primary field of interest?

History	18%
Literature	13%
Other	13%
Politics	10%
Media/Comm.	7%
Anthropology	9%
Economics	6%
Business	5%
Current Events	4%
NGO	4%
Sociology	*4%*
Art	1%
Biology	1%
Geography	1%
Music	1%
Public Health	1%
Social Services	1%

2. Would you like Safundi to publish an online directory of its members?

Yes	85%
No	15%

3. What is the highest degree that you have received?

Doctorate	45%
Masters	44%
Bachelors	11%

4. If you have not received a Ph.D., do you plan to receive it within the next two years?

Yes	75%
No	25%

5. Has Safundi enhanced your current research and understanding of South African and/or American studies?

Yes	85%
No	15%

6. Would you like Safundi to publish fiction and poetry as well as scholarly articles, so long as all published works relate to South African and/or American studies?

Yes	63%
No	37%

7. Of the following choices, which kind of published work would you like to see more of in Safundi?

Scholarly	54%
Reviews	13%
Interviews	18%
Essay	9%
Fiction/Poetry	6%

8. I find the articles in Safundi interesting, enlightening, and well-researched. 100% represents STRONGLY AGREE, 0% represents STRONGLY DISAGREE.

Rating	79%

9. Please rate the overall quality of Safundi. 100% represents EXCELLENT, 0% represents POOR.

Rating	81%

10. We are considering publishing a weekly email report summarising news and current events related to South African and/or American studies. Would this be something that you would like to receive?

Yes	92%
No	8%

11. Would you like Safundi to publish a print edition?

Yes	69%
No	*31%*

12. If Safundi did publish a print edition, would you likely subscribe to it, provided the price was reasonable?

Yes	66%
No	34%

13. If Safundi offered premium services on the web site to help you with your research, would you likely subscribe to these services, provided the price was reasonable?

Yes	61%
No	*39%*

14. Would you object to advertisements in Safundi, provided they do not interfere with its content?

Yes	17%
No	83%

15. If Safundi held a conference, should it be held in South Africa or the United States?

South Africa	63%
United States	37%

16. If Safundi held a conference on South African and American comparative studies, would you want to attend?

Yes	93%
No	7%

Table III: The Safundi Editorial Board

the chance to explore commonalities in teaching U.S. and South African comparative studies. At the risk of stating the obvious, we also consider it important to draw attention to a need that involves both growing social networks and publication development: that for-profit publishers maintain (or establish) different price structures for Africa-based subscribers.

Third, on the scale of the individual, the importance of editorial commitment to academic rigour, of open minds to the creative possibilities of the Internet, and of dedication to the success of the new online medium for research dissemination extends to all parties involved in these exciting times for African scholarship.

Fourth, as a natural extension of the previous three observations, *Safundi* and Africa-related online publications must establish a good record of permanence. Static and simpler links to content – and ensuring that materials are indexed in third-party databases and search engines –offer a practical way of forming a foundation for permanence.[22] This can be enhanced by publishing materials and communicating with members regularly, i.e., on time, an area where scholarly print publications often fall short. With regularity comes the perception of durability. Finally, the publication of solid, fresh scholarship propels any publication, print or online, to a promising future.

Adhering to these four guiding principles does not, of course, ensure an online journal's success, but their significance to the *Safundi* example suggests they will be critical to the future of online publishing and new media in African scholarship. And it is an important future. Electronic publications—more than just computerised adaptations of printed materials—have the potential to bring people and research closer together more quickly than before, be it by crossing borders, as in *Safundi*, or by other means discussed here.

Notes

1. For purposes of clarification, the italicised '*Safundi*' refers to *Safundi: The Journal of South African and American Comparative Studies* (the academic journal), while '*Safundi*' – no italics – represents the entire online community at http://www.*safundi*.com. Both of these terms cover the period of time when the journal and the online community were known as *USA-SA.com* (June 1999 to August 2000). '*Safundi*' is an invented word composed of the following parts: 'S' represents 'South Africa,' 'a' stands for 'America,' and 'fundi' originates from the Xhosa word *umfundi*, which translates as 'scholar.'
2. Fredrickson, George, 1981, *White Supremacy: A Comparative Study in American and South African History,*Oxford: Oxford University Press and Fredrickson, George, 1996, *Black Liberation: A Comparative History of Black*

Ideologies in the United States and South Africa, Oxford: Oxford University Press.

3. Bergh, Jonah, 2003, 'White Supremacy Twenty-One Years On: Opportunities for Comparative Historical Research', *Historia* 48, No. 1 (May), pp. 355-372.

4. For example, see Maurice Evans, *Black and White in the Southern States: A Study of the Race Problem in the United States from a South African Point of View* (University of South Carolina Press, 2001 [Originally published in 1915]).

5. Hamilton, Carolyn, 1998, *Terrific Majesty: The Powers of Shaka Zulu and the Limits of Historical Invention,* Cambridge: Harvard University Press; Witz, Leslie, 2003, *Apartheid's Festival: Contesting South Africa's National Pasts,* Bloomington: Indiana University Press.

6. Mahmood Mamdani, *Citizen and Subject: Contemporary Africa and the Legacy of Late Colonialism* (Princeton: Princeton University Press, 1996).

7. Campbell, James, 1995, *Songs of Zion: The African Methodist Episcopal Church in the United States and South Africa,* New York: Oxford University Press.

8. For additional overviews, see Fredrickson, George M., 1997, *The Comparative Imagination: On the History of Racism, Nationalism, and Social Movements,* Berkeley: University of California; Cooper, Frederick, 1996, 'Review Essay: Race, Ideology, and the Perils of Comparative History', *The American Historical Review* 101. 4 (October), pp. 1122-1138; Alexander, Peter and Halpern, Rick, 2004, 'Introduction: Comparing Race and Labour in South Africa and the United States,' *Journal of Southern African Studies* 30. 1, pp. 5-18.

9. Issue 1 was published under the name of *USA-SA.com.*

10. Issue 2 ran thirteen months after the premiere issue due principally to a prior outstanding commitment held by the publisher.

11. Parsons, Neil, 2000, '*SAFUNDI* – Journal of South African and American Comparative Studies-reply', in H-SAfrica 30 October (http://h-net.msu.edu/~safrica/archives/october).

12. Of the 408 *Safundi* members at the time, 85 (20.8 per cent) participated in the survey. For complete results, see Table II.

13. 'No cost to the reader,' of course, does not include the costs of obtaining computer and Internet access. While this may seem rather miniscule to the American reader, it is much more relevant to the Africa-based researcher. This digital divide is addressed later in the paper. 'No production cost' does not account for basic website hosting charges and time invested by the editors and publisher.

14. See the first print monograph published by *Safundi*: Offenburger, Andrew, Rosenberg, Scott and Saunders, Christopher, 2003, *A South African and American Comparative Reader: The Best of Safundi and Other Selected Articles,* Nashville: *Safundi*.

15. An annual membership costs $49.95 for individuals and $250 for institutions (which gives access to all affiliated faculty, students, and staff). For institutions within Africa, a 40 per cent discount is offered, and this same discount will be applied soon to personal subscriptions within Africa.

16. *Safundi* has always been hosted on a shared server. It is likely that the former hosting provider was listed as a spammer because of a previous client's misuse of e-mail protocols.

17. 'Personally sent' is defined as an individual e-mail from the publisher to the invitee. In the first three years of the website's existence, invitations systematically went out to Africanists who might be interested in the journal. These individuals were either recommended to *Safundi* or their online website spoke of an interest in African studies or comparative issues. Such promotion would be more than likely taboo today in light of the public's intolerance of 'unsolicited' e-mail.

18. According to the 2001 *Safundi* survey (Table II), more than eighty per cent of *Safundi*'s members are affiliated with an institution of higher education.

19. The database includes research that directly compares the two countries as well as that which compares related regions. Select sources that are not comparative but of interest to members are included, e.g., monographs on foreign policy involving the two nations.

20. Indexing of *Safundi* in third-party databases is in its infancy. This is primarily due to time constraints in publishing the *Journal* and other website resources.

21. See Table III for a listing of all Editorial Board members.

22. As an example of this, with the fourth redesign of the *Safundi* site in 2003, links to journal content changed from containing an argument (e.g., http://www.*safundi*.com/papers.asp?lop=shore) to following an identifiable pattern (e.g., http://www.*safundi*.com/issues/09/shore.asp).

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Using ICTs for Social Justice in Africa

Firoze Manji*

Abstract

This paper seeks to draw out the potentials of information and communications technologies (ICTs) for supporting the cause of social justice in Africa. The paper draws on Fahamu's experiences of using ICTs for delivering distance learning programmes for human rights organisations using a mixture of CD-ROM, e-mail moderation and workshop-based learning. The potentials for delivering similar courses using handheld computers with built-in mobile phones are explored. The paper describes the development of *Pambazuka News*, a weekly electronic news and discussion forum for social justice that has grown in three years from a subscriber base of 300 to more than 70,000 each week. *Pambazuka News* has been used as an advocacy tool in a number of forums, notably at the first meeting of the Pan African Parliament and at AU meeting in Addis Ababa, Ethiopia, in July 2004, where it was the principal instrument for calling on African states to adopt the protocol for the rights of women in Africa. The paper discusses how SMS/text messaging from mobile phones has been used to enable people in Africa to sign online petitions. The paper argues that technology is a manifestation of social relations, reflecting the power and values of those who use it. It concludes that ICTs should not be left to those who want to make profits, but should be grasped as a powerful tool for social justice.

Résumé

Ce document vise à mettre en exergue le potentiel des technologies de l'information et de la communication (TIC) pour soutenir la cause de la justice sociale en Afrique. Le document s'appuie sur les expériences de Fahamu dans l'utilisation des TIC pour la prestation de programmes de téléenseignement pour les organisations de droits humains en utilisant une technique d'apprentissage basée sur l'association entre l'enseignement par CD-ROM, par modération électronique et par apprentissage en atelier. Les potentiels pour la prestation de cours similaires en utilisant des ordinateurs de poche dotés de téléphones mobiles sont explorés. Le document décrit le développement de

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Pambazuka News, un hebdomadaire d'actualités électronique et un forum de discussion pour la justice sociale qui s'est développé en trois ans à partir d'une base d'abonnés de 300 à plus de 70.000 par semaine. *Pambazuka News* a été utilisé comme un outil de plaidoyer dans un certain nombre de forums, notamment lors de la première réunion du Parlement panafricain et lors d'une réunion de l'Union africaine (UA) à Addis-Abeba, en Éthiopie, en juillet 2004, où il a été le principal instrument d'appel des Etats africains à adopter le protocole pour les droits des femmes en Afrique. Le document examine comment le SMS/ l'envoi des messages par texte à partir de téléphones portables a été utilisé pour permettre la signature de pétitions en lligne en Afrique de signer des pétitions en ligne. Le document souligne que la technologie est une manifestation des relations sociales, reflétant la puissance et les valeurs de ceux qui l'utilisent. Il conclut que les TIC ne devraient pas être la monopolie de ceux qui veulent faire des profits, mais devraient être appréhendées comme un outil puissant pour la justice sociale.

Introduction

If someone had told me three years ago that a new electronic newsletter on social justice in Africa would attract a readership three years later of more than 60,000 people every week, most of them in Africa, and that this could be done without forming an alliance with media magnates or multinationals, I would said it was impossible.

And yet that is exactly what *Pambazuka News*[2] has succeeded in doing. Almost without realising it, Fahamu has become a publisher of news and with a constituency that not only consumes what we produce, but also actively feeds information to the newsletter on a regular basis.

How did we manage this modest achievement? And what lessons can other people learn from these experiences? This paper seeks to draw out the potentials of information and communications technologies for supporting the cause of social justice in Africa. The paper draws on Fahamu's experiences of using ICTs for delivering distance learning programmes for human rights organisations using a mixture of CD-ROM, e-mail moderation and workshop-based learning. The potentials for delivering similar courses using handheld computers with built-in mobile phones are explored. The paper describes the development of *Pambazuka News*, a weekly electronic news and discussion forum for social justice that has grown in three years from a subscriber base of 300 to more than 70,000 each week. *Pambazuka News* has been used as an advocacy tool in a number of forums, notably at the first meeting of the Pan African Parliament and at the AU meeting in Addis Ababa, Ethiopia, in July 2004, where it was the principal instrument for calling on African states to adopt the protocol for the rights of women in Africa. The paper discusses how SMS/text

messaging from mobile phones has been used to enable Africans to sign online petitions. The paper argues that technology is a manifestation of social relations, reflecting the power and values of those who use it. ICTs should not be left to those who want to make profits, but should be grasped as a powerful tool for social justice.

The context

Pambazuka News was the serendipitous offspring of a programme established to harness ICTs for strengthening the human rights movement in Africa. Its birth was intimately intertwined with an attempt to develop distance learning materials for civil society organisations on the continent.

In 1997, Fahamu[3] set out to examine how developments in information and communications technologies can be harnessed to support the growth of human rights and civil society organisations in Africa. Like many others, we saw the potentials opening up with the growth in access to the Internet.

Although less well developed than in the industrialised world, access to the Internet has spread rapidly in Africa. In 1996, only 16 countries had access to the Internet. By 1998, 49 of the 54 countries were online, with most African capitals having more than one Internet service provider. By 2001, all African countries were online. According to Mike Jensen, the number of computers permanently connected to the Internet extended beyond 10,000 in 1999, but this probably grossly underestimated the actual numbers, given the widespread use of *.com* and *.net* addresses.

As of mid 2002, the number of dialup Internet subscribers was close to 1.7 million, 20% up from last year, mainly bolstered by growth in a few of the larger countries such as Egypt, South Africa, Morocco and Nigeria. Of the total subscribers, North Africa and South Africa are responsible for about 1.2 million, leaving about 500 000 for the remaining 49 Sub-Saharan African countries. In Africa, each computer with an Internet or e-mail connection usually supports a range of three to five users. This puts current estimates of the total number of African Internet users at around 5-8 million, with about 1.5-2.5 million outside of North and South Africa. This is about 1 user for every 250-400 people, compared to a world average of about one user for every 15 people, and a North American and European average of about one in every 2 people.[4]

Since the early 1990s, numerous civil society organisations have flourished in Africa, including non-governmental organisations, professional associations, religious groups and movements. The period has also seen a significant growth in the number of organisations concerned with promot-

ing and protecting human rights. Of course, human rights activism is not new to Africa. It has been a feature of all democratic struggles in the region both during and since colonial times. However, in the last decade there has been a proliferation of self-proclaimed human rights organisations whose purpose is to investigate, monitor and report human rights violations and to campaign for the respect of human rights. Our view was that the ability of the African human rights movement to open, maintain and expand an environment in which basic freedoms are respected would depend largely on the establishment of a critical mass of organisations that have the necessary skills both to promote and to protect human rights.

The question, therefore, is: could the new technologies be harnessed to strengthen this movement?

When we first started, the idea seemed simple enough (if rather naive): given the development of the worldwide web, we should be able to produce web-based distance learning materials and establish a web-portal to bring together relevant information resources for this constituency. We thought the human rights organisations would then be able to access the material and use it according to their need. Nevertheless, before we could launch such a website, we needed to know what kind of training such organisations would need.

Understanding needs

In 1998, we undertook surveys involving more than a hundred human rights and civil society organisations in eastern and southern Africa. We wanted to know how such organisations used the Internet, what kind of technology they had access to, what their training priorities were, and how they managed their organisations. We were able to visit the offices of about 60 per cent of the organisations interviewed, enabling us to inspect their ICT infrastructure and to test out the problems of accessing the Internet. [5]

Although most organisations had access to e-mail, access to the web was found to be much more problematic: organisations expressed frustration with how long it took to download web pages because of low bandwidth, and irritation with the number of times they had to dial in over the telephone lines to re-establish connections. One of the biggest constraints to accessing the Internet was the cost of going online: the average cost of using a local dialup Internet account for 20 hours a month in Africa is about $60 (including call charges). To understand the relative scale of such charges, $60 is higher than the average African monthly salary.

We found that many of these organisations had difficulties accessing training. In part, this was due to the relatively high cost of course fees. In

addition, faced as they are by the day-to-day demands of activism in a frequently hostile political environment, with deteriorating economic conditions, and ever-increasing public demands on a small number of committed and experienced staff, many of these organisations have difficulties in giving priority to capacity building either within or beyond their own organisations. Therefore, most of the training undertaken by human rights and civil society organisations in the region was in the form of short workshops. In-depth training was rarely possible without long absences from work, and therefore relatively few have attended longer, residential courses. Given the fragility of many of these organisations, many said that prolonged absences of key staff threatened the viability of their organisations.

Our survey confirmed the findings of previous surveys on the training needs of human rights organisations in the region.[6] Their priorities included skills development in fact-finding, investigation and monitoring; knowledge and application of international and regional standards and mechanisms, especially in social and economic rights; strategies for human rights litigation, reporting complaints and adjudication; provision of paralegal services; campaigning and lobbying; documentation techniques and uses of documentation; monitoring of elections and trials; popular education and human rights education.

Because of the problems of accessing the Internet, relatively few organisations at the time had much experience in using the Internet for systematic research beyond searches using the most common search engines. Few had experience of using the Internet in their advocacy work. However, most organisations did have computers with a modem, which they used mainly to access and send e-mails. Most organisations had at least one computer with a CD-ROM drive, with 32-64MB RAM capacity as the norm. Except in South Africa, the ratio of computers to staff was about 1:4. The operating systems that were common at the time were Windows 95 and Windows 98. Few computers had sound or video cards.

Most organisations stated that they would be interested in participating in distance-learning courses, provided they did not have to rely on the web. Our research pointed out clearly what kind of training was required. But how could that be delivered using ICTs?

Developing interactive course materials using ICTs

Any strategy based on offering courses via the worldwide web was doomed to fail, given the difficulties of using what one wag called the 'worldwide wait'. Furthermore, any technologies we developed were going to have to

be workable on what were, even then, low specification machines. If the web was not going to be practical, then we would need to develop materials that provided the same kind of interactivity offline. Using some kind of interactive programme stored on CD-ROM seemed the obvious solution.

If we were to develop distance learning course materials, how would we enable interactions between course participants? How would they communicate with each other and with their course tutor if online discussion via the web was not a practical route? Given the ubiquity of e-mail, it was clear that we would have to design our courses to use that as the principal means of communications.

We designed our courses with three phases. In the first phase (usually lasting about 10 weeks), we provided participants with carefully designed interactive CD-ROM that helps them learn the subject at their own pace. They are connected to each other and to the course tutor via an e-mail list where they discuss issues arising in the course of their studies, and where they hold asynchronous discussions on topics set by the tutor. During this phase, they are required to complete and submit as e-mail attachments a series of assignments. Their work is formally assessed by the course tutor.

In the second phase, those who have completed the first phase satisfactorily are invited to attend a 3-4 day workshop held at a convenient location. As a result of what participants had learned in the first phase, there was a considerable homogeneity in the participants' knowledge and understanding of the subject. The depth to which the subject can be treated was, therefore, much greater than would otherwise have been the case.

In the third phase of the course, participants were required to carry out a practical project, putting into practice what they have learned during the first two phases. They were mentored through this work by their course tutors. They prepared a written report on their project for formal assessment.

There were a number of challenges in developing appropriate learning materials. We commissioned authors to write the materials based on an agreed framework of learning objectives and outcomes. Authors were provided with guidelines on, and examples of, the range of interactive exercises and 'tricks' that they could use as part of their courses. Authors produced their manuscripts electronically in Word or other similar formats. The manuscripts, based as they were on extensive courses that spanned several months, were always substantial in length. The first challenge we faced was to work out how such large quantities of material

could be transferred to an interactive medium that could be stored and delivered on CD-ROM.

After extensive research, we had decided that we would use Macromedia Director as the medium for delivering the course materials. Although this required a fair amount of programming, and even though other software programmes were available for this purpose, we chose Director principally because it gave us the flexibility for producing the range of exercises and interactivity that we knew would be required. However, we were also concerned that we should not be imprisoned by the choice of software or platform: what if the web eventually became a practical route for delivering our course materials – would that mean we would have to start all over again? And what if we wanted to move the material onto another platform – for example, on to palmtop computers (PDAs)? How could we 'future-proof' our developments?

The route we eventually pursued was to separate the content of the learning materials from the formatting: we did this by parsing the word documents into XML. The XML was then fed into Director dynamically. This allowed us to work on the manuscript whenever we needed to using word processing software to edit and revise the manuscripts as required. With a library of interactive exercises developed over time, it became a relatively straightforward procedure to call these up as and when required. The process resulted in a considerable speeding up of the process of production: whereas the first course materials took nearly a year to produce from manuscript to interactive CD-ROM, subsequent CD-ROMs were produced at a rate of one a month!

Our guiding principles in developing these materials were that they should:

- Be fully interactive, providing creative ways for the user to learn;

- Provide feedback to users to enhance their learning;

- Enable a range of exercises to be incorporated, and the code for these exercises to be reused across the different courses;

- Allow for stand-alone learning;

- Allow for the content to be reused with ease;

- Enable ease of editing and updating; and

- Enable faster production.

At the same time, we felt that any technology we used should enable us to maintain Fahamu's essential design principles, namely, strong designs which

run through our publications; inspiration from African art; simplicity; usability; focus on learning and content; use of space; clean; minimal text; consistency; and ease of navigation. We applied this approach to a series of courses that we made available, in the first instance, to southern African organisations.

In their evaluation of this programme, the external evaluators stated that the:

> … materials are genuinely innovative in the field they seek to serve – organisations working in the area of human rights in southern Africa. They provide, taken together, an excellent menu of materials designed to strengthen the functioning of any NGO or CSO organisation, alongside those that contribute more directly to the particular focus of a human rights organisation. The presentation of the materials through CD-ROM is of very high quality and generally found to be user-friendly . . . it is quite clear that this approach breaks new ground. The evaluators are not aware of any others [sic] such comprehensive approach to both personal and organisational professional development. The key word describing the response of individuals to the courses is 'empowerment'… Many participants spoke and wrote of feeling more 'connected' about the current human rights realities across SADC.[7]

Pambazuka is born

But learning is more than just studying. It is also about reading, reflecting, commenting on, and contributing to a discourse on issues. It is about sharing personal experiences and acquiring mastery over those experiences. One of the most powerful channels – at least potentially – for that is, of course, the Internet. The Internet has numerous sources of information and numerous opportunities for dialogue and engaging in discussion. But what happens to a community that is unable to access these? People often speak of the 'digital divide' as if this is a technical divide. It is deeper than that. It is also a social divide that prevents the experiences of the greater part of humanity from being heard, and which, therefore, under-nourishes the discourse of those who do have access to the technology.

If the constituency with whom we have worked does not have access to the web, would it not be possible to bring the web to them? Would it not be possible to provide them the means with which they can share their own experiences and information with others on the Internet? One of the outcomes of the initiative described above was that we began receiving requests from human rights and other civil society organisations for assistance in finding information on the web and disseminating information about their own work. To begin with, we responded on a case-by-case basis,

sending off the results of searches or disseminating by e-mail information we had received from others to those on our modest contacts list. Soon, the demand became overwhelming. We simply could not respond to all the requests we received.

To make our response more effective, we compiled the information in the form of a newsletter, with a number of categories that reflected the subjects that the constituency appeared to be interested in. To make the newsletter more interesting, we included editorial commentary and opinion pieces from activists in the region and elsewhere.

Since then, the newsletter goes out as an e-mail, with text only format so that even those without HTML enabled e-mail programmes could read the content with ease. Each section contains a five-line summary of the item, with a URL pointing to the relevant website. Stories or information announcements sent to us directly are stored on the Pambazuka online database (there are currently some 20,000 such news items and editorials available free online). The newsletter receives more that 200 postings each week from which we draw for the different sections. And each week, there is a vibrant debate on critical issues related to social justice in the region and in response to editorial materials.

Through forming strategic alliances with other organisations,[8] we were able to expand the reach of the newsletter. In December 2001, the newsletter was named *Pambazuka News* (*pambazuka* in Kiswahili means 'to awaken or arise' – as in the breaking dawn). From an initial base of a few hundred subscribers, *Pambazuka News* has grown today to nearly 12,000 subscribers and a readership estimated at 60,000. The newsletter is also reproduced in its entirety at allAfrica.com, with a potential readership probably in the hundreds of thousands.

According to our recent reader survey, approximately 35 per cent of our 13,000 subscribers work in NGOs, 18 per cent in Universities, 11 per cent in international agencies, and 7 per cent in government. About 20 per cent of our readers are directors or senior managers, 15 per cent programme staff, and 11 per cent work in the media; one in five subscribers use *Pambazuka* to disseminate their own information. The newsletter is long – usually between 20-30 pages of printed text. On average, readers spend 40 minutes reading the newsletter every week, and distribute their copy to on average 5-6 other people. More than 80 per cent of readers follow up on the URL links to stories and news items, and 10 per cent of subscribers use *Pambazuka* as the sole source of news on Africa. And each week our editorials are reproduced on numerous websites and mailing lists.

Since its origin, we have stored each news and editorial item on an online database, mainly because this provided an effective resource for production. Over time, we had accumulated so much valuable information that we decided to make the full content of the database available online. The new website was launched in July 2003. The database and the newsletter archives are fully searchable, and access is free. We are as still unclear what impact this has had: we know that our primary constituency in Africa still has difficulty accessing the web. Making the database available means that it is those with easy web access who benefit most.

Content from *Pambazuka News* has been republished in national newspapers and other independent publications. A community radio station in Dar es Salaam has informed us that they now have a 15-minute feature in Kiswahili each week based on editorial and other content in *Pambazuka News*. Content is also extensively reproduced by NGO websites and newsletters to keep their audiences updated on events related to Africa. For example, in our 2003 survey of *Pambazuka News*, one subscriber said: 'I use it so that I can keep the PeaceWomen website updated on what is happening on women, peace and security issues across the African continent.' Another explained: 'I am building a web portal on women and armed conflict for UNIFEM (to be launched in June) and in the process have found your resources incredible. Last year I was writing a book for UNIFEM on Women, War and Peace and constantly bounced items to those working on various thematic chapters from your service.'

We know that in many countries *Pambazuka News* is circulated in printed form by activists to various grassroots organisations. However, we have been unable to document how widespread this phenomenon is.

Evidence suggests that subscribers and readers are people who have a strong focus on social justice and human rights issues. And while problems related to access to e-mail and Internet means that there are many people who do not have direct access, there are encouraging examples of how *Pambazuka News* reaches and affects grassroots audiences directly through print or radio and indirectly through networking and advocacy efforts. For example, our readership survey in 2003 revealed that the AGENDA Feminist Media Project in South Africa used information from *Pambazuka News* pertaining to gender and women's issues to provide information to 27 community radio stations.

Pambazuka News as a forum for debate

From the beginning, we intended that the newsletter would not simply act as an information source or distributor, but should seek to stimulate debate,

and give voice to viewpoints that are rarely expressed in the 'mainstream' media. Each week we carry editorials, commentary and analyses on key issues in Africa, and there is a lively letters 'page' from the readership. To make this work, we give space to a range of opinions and viewpoints, being careful that it serves as a tool for intervention without taking a 'hard line' about particular political positions.

Over the last year, we have consciously used *Pambazuka News* as a campaigning tool. Fahamu has supported the collection of petition signatures on media freedom presented to AU in Maputo. This petition was provided online and attracted signatories from both Africa and around the world. A special issue of *Pambazuka News* was produced for the first meeting of the Pan African Parliament in Addis, and 260 copies of the a printed version of this issue was distributed to pan African MPs and AU staff.

Using ICTs for campaigns

More recently, *Pambazuka News* has been involved in a campaign to have African countries to ratify the Protocol on the Rights of Women in Africa that was adopted in July 2003. A coalition of human rights groups, spearheaded by women's rights organisations Equality Now and FEMNET, together with Oxfam, CREDO for Freedom of Expression and Associated Rights and Fahamu, is campaigning to promote the ratification and popularisation of the Protocol. As part of this campaign, Fahamu is running a petition to collect signatures in support of the ratification of the Protocol.

In addition to setting up an online petition, we have developed the facility for people to send text (SMS) messages from mobile phones in order to sign their names to the online petition. Why did we choose this route?

The question that this campaign faced was: what can be done to increase the number of organisations and people who can sign the online petition? Whereas there are currently between 5-8 million e-mail users in Africa, as of January 2004, there were approximately 52 million mobile phone subscribers in Africa, and with a projected 67 million by the end of 2005. It is the world's fastest growing mobile market. The potential of the increase in mobile usage is not only limited to voice communication. Each mobile handset contains SMS functionality that enables the delivery of text-based messages. Figures indicate that Africa is not immune to the global SMS fad, with 450 million SMS messages sent in December 2002, compared to 350 million for December 2001.

Within this context, we realised that an opportunity exists to test the extent to which information can be sent to this army of 'texters' in order to

inform them about issues associated with a specific campaign – and to mobilise them in support of this campaign. Thus far, more than a thousand signatures to the petition have been obtained, with more than a quarter coming via SMS.

This campaign, still ongoing, also involved the production of a special issue of *Pambazuka News*, a printed version of which was widely distributed at the African Union meeting of Ministers in Addis.

Making civil society literature available online

While the academia continues to generate the products of intellectual pursuit, there is a vast and growing literature produced both within the academia and by civil society organisations that are more focused on policy engagement. While some of these get archived in some libraries, the Internet has of course potentially transformed the availability and accessibility of this literature which otherwise would fall in to that 'grey literature' zone that seems to be responsible for the loss of so much of the product of intellectual labour.

Perhaps the most interesting initiative that has sought to make such literature available and searchable in relation to refugee studies has been Forced Migration Online.[9] It contains approximately 3,000 full-text documents in electronic format which can be searched, read online and printed as required. The documents include both recent and historical grey (un-published) literature and research materials. The digital library also contains full-text articles from back issues of key journals in the field.

Fahamu has been involved in a number of initiatives to assist organisations to make such literature more widely available. This includes:

- *Annotated bibliography of selected research on civil society and health* developed on behalf of the World Health Organisation and the Zimbabwean Training and Research Support Centre. http://www.tarsc.org/WHOCSI/index.php

- The *Zimciv website* developed to enable people and institutions to access information produced by and about civil society in Zimbabwe to raise the profile, voice of and engagement with civil society in Zimbabwe; to strengthen the dissemination, analysis of, and debate on issues and positions taken up by civil society. http://www.zimciv.org/

- *Annotated bibliography and publications database on equity in health* developed for EQUINET, the Network for Equity in Health in Southern Africa. http://www.equinetafrica.org/bibl/

- *Pambazuka News* online database containing more than 20,000 news, information and editorial materials collected over the last three years.

Are there lessons from Fahamu's experiences?

We are reluctant to offer our experiences as a 'model'. We have not been 'successful' in the sense that the term is often used today: we have not made millions; we have not reached millions, and still less, we have not (yet) managed to transform the lives of millions. But we believe that there are certain features of our approach that others may find useful.

The revolution in information and communications technologies (ICTs), and in particular the Internet, has potentially transformed the way people can organise, relate, discuss or debate with each other, and the way they exchange, find, retrieve, and disseminate information -- even the way information itself is produced. Our work has been driven by a purpose outside of and beyond technology. We have sought to contribute to the building of a movement for social justice. ICTs are, we believe, only one means to that end.

We publish not because we are or want to become publishers: publishing is only the means for supporting a particular movement. Although we have devoted much energy to developing the technology that we needed, we are not a technology company. We see technology as a manifestation of social relations, rather than an end in itself. Our work has been guided by the desire to help a particular movement. As with the products of all previous technological revolutions, the technology itself is not 'neutral'. It serves the interests of those who exercise control. All technological developments have the potential for either contributing to the emancipation of humankind, or serving the self-interest of a minority (often with socially destructive consequences). The extent to which the technology may be used for either purpose depends both upon the power of those who control it and the extent to which organised civil society concedes that control or itself harnesses the technology. Our work has essentially been an exploration of how the movement for social justice can harness that technology.

If the materials we have produced have been well received, then this is a reflection of the quality of inputs we receive from users. The development of Fahamu's work has been grounded in building, responding to expressed needs, involving the end user in defining the problem, and encouraging their participation in what is developed and how it can be delivered. In commercial terms, our strongest card has been 'market research'.

Unfortunately, like many other not-for-profit organisations, our greatest weakness has been in the area of sales and marketing. While we think we know what the end-user wants and needs, while we have developed methodologies for producing what is needed, we have not been good about

selling: in reaching a significant portion of the potential market. For example, the current number of Internet users in Africa is estimated to be around 5-8 million.[10] Of these, I would suggest that it would not be unreasonable to consider that potential subscribers to Pambazuka would constitute about 5 per cent. If that were correct, then our potential subscriber base is between 250,000 and 400,000. Currently, we reach less than 0.2 per cent of that. We have, therefore, a long way to go.

Endnotes

1. 14 Standingford House, Cave Street, Oxford OX4 1BA, UK
2. See http://www.pambazuka.org/
3. Fahamu is a not-for-profit organisation with offices in the UK and South Africa. (see http://www.fahamu.org/).
4. See Mike Jensen: http://www3.sn.apc.org
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6. See International Human Rights Internship Program & The Swedish NGO Foundation for Human Rights, 1994, *The Status of Human Rights Organisations in Sub-Saharan Africa.* Stockholm and Martin, J. P. & Cobham, K., 1997, 'Human Rights NGOs in Africa: The Emerging Agenda'. Centre for the Study of Human Rights, University of Columbia, (personal communication).
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8. with Kabissa (http://www.kabissa.org) and SANGONeT (http://www.sn.apc.org)
9. http://www.forcedmigration.org/
10. Jensen, M., op cit.

TIC, pratiques de recherche d'information et production du savoir des enseignants-chercheurs universitaires ivoiriens

Aghi Auguste Bahi*

Résumé

Le développement des technologies de l'information et de la communication (TIC) trouble le monde universitaire et active la formation de « la société de la connaissance ». L'enseignement supérieur doit relever le challenge d'une mise en compétition plus accrue des systèmes universitaires. Pourtant un constat s'impose dans les universités ivoiriennes : aucun fonds documentaire informatisé ; aucun réseau de bibliothèques ; aucune revue scientifique ivoirienne n'a de version électronique ni même d'adresse électronique. La maigre production d'écrits scientifiques reste « papyrocentrée ». Dans un tel cadre sociotechnique, quelle place les TIC tiennent-elles dans l'activité professionnelle des enseignants-chercheurs ? Cette interrogation est d'autant plus importante qu'aujourd'hui, le dynamisme et la compétitivité d'une université ou d'un institut de recherche tendent à être mesurés à l'aune de son informatisation voire de sa présence sur Internet. Cette communication présente les premiers résultats d'une étude exploratoire, centrée sur un échantillon limité d'acteurs (enseignants-chercheurs, personnels techniques administratifs, doctorants) de l'université de Cocody à Abidjan. S'appuyant sur des entretiens individuels, elle sonde leur vécu et leurs logiques face aux enjeux soulevés par l'insertion des TIC et à la menace de marginalisation de leur espace universitaire dans un environnement scientifique mondialisé.

Abstract

Information and Communications Technologies (ICT) challenge academia and sets in place the making of the "knowledge society". Higher education must face the challenge to stimulate greater competition among university systems. Yet one thing should be underscored in Ivorian universities: there is no

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automated documention, no library network system; no Ivorian scientific journal has an electronic version or even an e-mail address. The only production of scientific literature remains the "papyrocentrée." Within such a socio-ethnic framework, what is the place of ICTs in the professional activity of scholars? This question is all the more important today since the dynamism and competitiveness of a university or a research institute, tend to be measured on the basis of its computerization and even its presence on the Internet. This paper presents the primary results of an exploratory study, which focuses on a small sample of actors (scholars, technical and administrative personnel, doctoral students) at Cocody University in Abidjan. With emphasis on individual interviews, the paper assesses their experiences and their logics in view of issues raised by the integration of ICTs and the threat of marginalization of their university space in a globalized scientific environment.

Introduction

Les technologies de l'information et de la communication (TIC) aujourd'hui offrent des possibilités formidables de traiter, stocker, transmettre, diffuser et de partager l'information scientifique. L'ordinateur est devenu indispensable pour écrire, produire, avoir accès et déchiffrer l'information électronique qui, en raison même de sa nature, requiert un appareillage spécifique pour être lisible. L'ordinateur multimédia devient même une machine à communiquer et, à ce titre, possède une certaine « capacité à diffuser de l'information et/ou à favoriser les échanges sociaux et professionnels dans des temps de plus en plus contraints » (Miège 1999 : 10).

C'est indubitablement dans nos universités d'Afrique noire francophone que la question du fossé numérique se pose avec acuité et se vit de façon dramatique. En Afrique de l'Ouest, le relatif isolement des structures d'enseignement supérieur ainsi que le manque de documents risquent de la marginaliser sur le plan scientifique (Seck 2000 : 386-387). Ce risque, dans un monde où la technologie s'accélère, semble être un danger bien réel. Les TIC se présentent alors comme révélateurs des inégalités entre le Nord et le sud. Ces problèmes sont d'autant plus essentiels qu'aujourd'hui le dynamisme et la compétitivité d'une université ou d'un institut de recherche tendent à être évalués à l'aune de leur informatisation et de leur médiatisation, précisément de leur présence sur la « toile » (Web). Cet ersatz d'utopie technicienne est un paramètre contextuel important. Les TIC suscitent toujours des « discours prophétiques ou programmatiques sur la supposée 'société de l'information' » (Miège 1999). En bref, l'immixtion des TIC dans le champ scientifique[1] universitaire révèle sous un certain rapport la crise que vit la communauté scientifique.

Mais, la véritable question n'est-elle pas de se demander comment, dans leur quotidien, les enseignants-chercheurs se débrouillent-ils pour enjamber ou contourner le fossé numérique ? *Nolens volens*, la communauté scientifique universitaire ivoirienne, sous diverses formes, est déjà en contact avec les TIC dans ses activités ordinaires. Elle est déjà plus ou moins confrontée à des problèmes liés à cette nouvelle manière de communiquer l'information scientifique. Par ce terme, nous entendons bien « information–connaissance », c'est-à-dire les « informations rendues disponibles dans des banques de données qui peuvent être en libre accès, mais qui nécessitent souvent un paiement ou l'utilisation d'un code d'accès » (Wolton 1999 : 94), et qui, en effet, participe du travail spécifique des chercheurs. Cela revient à s'interroger sur l'appropriation des TIC par les universitaires, sur la signification même de l'usage, les incidences que ces nouveaux outils ont sur l'activité professionnelle, l'évolution des acteurs du champ scientifique et le sens même du travail de recherche pour les acteurs du champ scientifique universitaire.

Cet article questionne les usages des enseignants-chercheurs en matière de TIC à travers la présentation et la discussion de résultats d'une enquête exploratoire, tente ensuite de cerner les effets de ces usages des TIC dans la mission des ces « savants », (c'est-à-dire dans la recherche et la production de l'information scientifique) et d'apprécier la place des publications électroniques dans la production et la diffusion du savoir scientifique. Enfin, la contribution s'intéresse aux changements provoqués par ces usages dans le champ de la recherche ainsi que dans le rapport à la connaissance scientifique.

L'enquête exploratoire[2], donc nécessairement limitée, a été effectuée auprès d'une population rarement étudiée en Côte d'Ivoire : celle des enseignants-chercheurs[3]. Les moyens financiers extrêmement maigres, qui étaient les nôtres, nous ont contraint à réduire le nombre de cas de chercheurs universitaires à interroger. L'analyseur choisi est l'université de Cocody[4]. L'échantillon restreint de 38 répondants comporte 31 enseignants et chercheurs dont 12 doctorants ; les 7 autres proviennent du Service Informatique, des bibliothèques et de l'édition de cette institution universitaire[5]. Certains de ces acteurs sont en même temps des responsables de structures et des enseignants–chercheurs. Pour la collecte des informations, nous avons privilégié la méthode d'enquête par entretiens individuels[6] En effet, en forçant l'enquêté à co-construire un discours *in situ* avec l'enquêteur, l'échange en entretien est production d'une parole sociale (Blanchet, Gotman, 1992 : 9) sur ses propres pratiques[7]. Des emprunts à l'enquête ethnographique de terrain ont été opérés, car nous con-

sidérons que les enseignants-chercheurs et leurs autres collaborateurs au quotidien élaborent une culture et des représentations, composent un milieu d'interconnaissance (Beaud, Weber 2003 : 8) qu'il nous faut appréhender. Le danger est de réduire le faisceau des déterminations sociales-techniques « à celles identifiables dans l'inter-relationnel ou dans l'apport immédiat à l'objet technique, et même dans ce qui tend à dissoudre la différence entre le sujet et l'objet » (Miège 1999 : 8). Parce que nous prétendons prendre en compte la spécificité du communicationnel, les usages des TIC par les enseignants-chercheurs sont mis en rapport avec les changements intervenant dans l'espace public de débat et d'argumentation scientifique.

Cette contribution propose en premier lieu une description aussi complète que possible de notre terrain en tant que contexte d'usage des TIC, questionne ensuite les façons d'utiliser les informations collectées sur le Web et rend compte, en dernier lieu, des conséquences des ces usages sur le travail de recherche scientifique.

Situation d'usage des TIC

Comprendre les usages des TIC implique de tenir compte des situations et contextes socioculturels de leur utilisation (Millerand 2002 : 199). Ici, la situation d'usage, en tant que lieu même de la pratique professionnelle, est essentielle dans la saisie du processus de construction de l'usage. L'usage, en tant qu'activité sociale, est « art de faire », « manière de faire » normalisée dans un groupe social donné par l'ancienneté ou la fréquence mais qui ne constitue pas une règle impérative (Le Coadic 2001: 19). Du fait de son élasticité, voire d'une certaine ambiguïté, la notion d'usage recouvre des réalités bien différentes (Maigret 2003 : 262). En ce qui concerne le présent travail, le terme « usage » renvoie à l'utilisation effective des TIC qui relève plus de la tactique que de la stratégie. L'idée initiale est que l'usage des TIC, dont le temps de constitution est nécessairement long, est un construit social qui s'élabore autour de l'articulation de la logique technique et la logique sociale (Jouët 2000). L'outil utilisé – ici l'ordinateur– structure la pratique et, en retour, « les mobiles, les formes d'usages et le sens accordé à la pratique se ressourcent dans le corps social » (Jouët 1997 : 293). Or, le sens construit de l'usage par l'usager fait référence « aux représentations et aux valeurs qui s'investissent dans l'usage d'une technique ou d'un objet » (Chambat 1994 : 262) et a autant d'importance pour l'insertion sociale des TIC que leurs qualités techniques. La communication scientifique elle-même est de plus en plus médiatisée par la technique. Dans cette perspective, il s'agit de

comprendre comment représentations et utilisations individuelles s'imbriquent, construisent une relation à l'ordinateur et à Internet et prennent un sens qui préfigure des usages des TIC dans l'espace particulier qu'est l'université[8].

L'université comme cadre physique d'usage des TIC
Le cadre d'usage est ici appréhendé comme celui de l'activité effective de l'utilisateur et qui « correspond à la manière dont on se sert dans la réalité sociale de l'objet technique lui-même (…) l'usage résulte ici d'une forme d'ajustement personnalisé avec la machine » (Rieffel 2001: 151). Que représente l'université en tant que cadre ou contexte de l'utilisation tangible des TIC ? Un constat s'impose rapidement dans les universités ivoiriennes : aucune bibliothèque n'est informatisée à plus forte raison connectée (en réseau) ; les sites Web de ces universités sont surtout des portails[9] ouvrant pour ainsi dire sur des « terrains vagues ». La question de la digitalisation, de la numérisation des données crée un profond sentiment de frustration chez nos bibliothécaires : « Il n'y a pas de moyens, nous n'avons même pas le téléphone, à plus forte raison en équipement informatique », « il n'y a même pas d'ordinateurs. Celui-là, c'est le mien. C'est mon ordinateur personnel ». Tous estiment cela « frustrant… ». Pour les bibliothèques locales, le plus gros problème est celui des « moyens financiers ». La numérisation entraînerait un surcoût que nombre d'entre elles ne peuvent pas supporter.

L'édition universitaire ivoirienne, globalement faible[10], est encore largement « papyrocentrée ». Aucune des quinze revues aujourd'hui produites par les Éditions Universitaires de Côte d'Ivoire (EDUCI) n'a de version électronique, ni d'accès en ligne partiel (sommaire et/ou résumés des articles par exemple), bref, de visibilité sur Internet si ce n'est rarement dans les répertoires d'autres bibliothèques[11]. Peu d'entre elles possèdent une adresse électronique.

En définitive, tout se passe comme si les enseignants se servent peu des TIC pour concevoir leurs enseignements et leurs activités de recherche. L'Université ivoirienne est-elle une damnée du cyberespace scientifique ? De réels efforts sont faits par les autorités pour améliorer la connectivité, comme en témoigne cet enquêté à la fois enseignant et syndicaliste actif : « Le SYNARES[12] a demandé à l'État de diminuer les taxes sur les équipements informatiques et a amené l'actuel Président de l'Université (de Cocody) à s'engager dans l'informatisation de l'université. Mais hélas la guerre a considérablement freiné ce mouvement »… Les infrastructures en TIC « sont insignifiantes dans nos universités ».

C'est l'initiative privée, plus ou moins formelle, qui se développe. La tren-
taine de « cybercafés », dans le voisinage immédiat du campus universi-
taire, constitue vaille que vaille les véritables cadres d'accès Internet pour
les enseignants. Ces « cybers » pallient bon an mal an les problèmes de
connectivité, étant donné que rares sont les enseignants-chercheurs qui
pour l'instant peuvent réellement utiliser Internet depuis leur domicile. Même
si pour la plupart des enseignants-chercheurs interrogés « il est difficile de
lutter avec les étudiants », les employés des « cybers » en aidant, voire en
initiant, de nombreux clients néophytes participent de l'ajustement person-
nalisé entre l'individu et l'objet technique (Bahi 2004a, 2004b**).**

Les représentations des TIC : une équation simple

Les représentations et les valeurs s'investissent dans l'usage et leur examen
doit permettre de saisir les dynamiques d'appropriation à l'origine des
pratiques constatées (Millerand 2002 : 182). Dans le champ universitaire,
les représentations des TIC semblent se résumer à une équation qui peut
être formulée comme suit : « les NTIC, c'est Internet et Internet, c'est l'e
mail ! ». Ces représentations renvoient au modèle linéaire de transmission
du courrier postal ou, au mieux, au téléphone… Certes les représentations
sont susceptibles d'évoluer au fur à mesure que s'installe l'usage. Pour la
grande majorité des personnes enquêtées, Internet est un outil de
communication. Pour les personnes enquêtées avouent n'y rien connaître,
Internet, c'est l'ordinateur (et un ordinateur), c'est surtout une machine à
écrire. Il faut tout d'abord souligner qu'un seul enseignant-chercheur inclut
ouvertement le téléphone portable dans l'ensemble des TIC.

   Internet est incontournable puisque, aujourd'hui, « on ne peut pas ne
pas » utiliser cet outil, « sauf si l'on reste un enseignant du deuxième mil-
lénaire ». Ils savent aussi qu'on y trouve des textes, de la documentation,
car « c'est la plus grande bibliothèque du monde » qui catalogue toutes
sortes de données. Le discours dominant sur les TIC construit une image
de ces outils dans la conscience des individus. Certaines de leurs réponses
ressemblent même à des leçons bien apprises sur « ce qu'il faut savoir sur
les NTIC et l'Internet ».

   L'appropriation des TIC, notamment d'Internet et de l'ordinateur, peut
être appréhendée comme « l'usage relativement stabilisé, signifiant et ancré
dans le quotidien ». Cela suppose une démarche volontaire et des choix
d'utilisation spécifique. Ces utilisations particulières, révélateurs d'une
certaine rationalité « ordinaire » régissant les conduites, constituent le lieu
véritable où se joue l'appropriation des objets techniques (Millerand : 183-
185). Si pour l'ensemble des personnes interrogées, l'usage de l'*e-mail*

n'est donc pas tout à fait généralisé, il est tout de même largement dominant, et peut être considéré comme confirmé. Le plus gros du trafic des communications se fait avec des collègues basés (provisoirement ou non) à l'étranger ou appartenant à des universités ou instituts de recherche de « pays étrangers ».

Les pratiques développées par les enseignants-chercheurs témoignent d'un désir d'accomplissement individuel, comme nous l'avons vu ailleurs (Bahi 2004b). La messagerie électronique détient la palme de l'utilisation des services de communication de l'Internet. Mais là encore, beaucoup parmi les personnes que nous avons interrogées ne s'en sont jamais servi… « enfin, je m'en suis servi mais pas personnellement… ». En fait, la réalité est plus contrastée. Il raconte qu'il avait un message très important à faire passer dans un délai très court et qu'il a été obligé d'utiliser Internet. Cela veut dire se rendre dans un cybercafé, créer une adresse et envoyer le message. Il s'est fait aider par un jeune au cyber à qui il a donné un pourboire. C'est ce dernier qui s'est chargé des opérations (de la saisie et de l'expédition). Ce n'est pas lui qui a manipulé la machine. Il a donc bien raison de dire qu'il s'en est servi mais… « pas personnellement ».

L'illettrisme électronique : un effet générationnel ?
Il faut dire que même si l'interface électronique reste obscure, l'ordinateur connecté à Internet dépasse la simple fonction de machine à « faire de la saisie » et se voit associé désormais et clairement une fonction communicationnelle ainsi que l'avait déjà remarqué F. Millerand (Millerand 2002 : 188). De l'aveu même de certains collègues, « les étudiants sont plus calés que nous en matière d'Internet, de NTIC, etc. » Mais une chose semble se dégager nettement, c'est qu'avec les TIC, et notamment la panoplie des informations disponibles, il y a une certaine « indépendance » des étudiants. Ils vont sur des sites que nous ne connaissons pas et « ils sont au courant de choses que nous ignorons » ; cela ressemble à s'y méprendre au discours déjà entendu sur les mass media comme école parallèle. Cet « illectronisme » apparent est-il une question de génération ? Il y aurait en effet une sorte d'effet générationnel entre d'un côté les « vieux pères » et de l'autre les « enfants[13] ».

Jusqu'à une période récente, il y avait une sorte de snobisme (à l'envers) chez les enseignants haut gradés et d'un certain âge : ne pas savoir utiliser ces nouvelles technologies donnait un caractère particulier à leur personnage et les ancrait dans une certaine orthodoxie universitaire. C'était être « de la vieille école ». Et puis, à l'échelle mondiale, il est devenu socialement valorisé que les nouvelles technologies garantissent

l'alphabétisme de demain. L'« illectronisme », lié à une certaine « peur »
de la machine, est donc devenu la traduction électronique de l'analphabé-
tisme version papier. Les petites phrases, telles que « je ne m'y connais
pas », « je ne connais rien à cette histoire là… », «ce n'est pas évident (à
mon âge) », traduisent une certaine réticence à l'égard de l'utilisation de
l'ordinateur et d'Internet. Mais, beaucoup d'interviewés le savent déjà,
Internet trouble (renouvelle, recompose) la communication scientifique (par
la célérité plus accrue, par le rapport à l'écrit et à la lecture, etc.), l'utopie
du nouveau monde scientifique numérique (Mounier 2003) est d'actualité.
En cela l'outil les fascine dans une certaine mesure. Les TIC et notam-
ment Internet créent de nouvelles possibilités de communiquer à côté des
moyens classiques. On comprend pourquoi, beaucoup d'enquêtés éprou-
vaient le besoin de rassurer l'enquêteur : « je vais bientôt m'y mettre »,
« je vais prendre des cours »…

Mais chez les enseignants et chercheurs eux-mêmes, l'effort d'ap-
prentissage des TIC n'est pas toujours fait (cela reste au stade de projet
d'apprentissage l'idée ici est : « je commence demain »). Et bien souvent,
la question des nouvelles technologies, ou des nouvelles possibilités qui
leurs sont offertes par la technologie met les personnes interrogées un
peu mal à leur aise. Certains enquêtés ont fait allusion au projet Dragados[14],
par lequel les autorités ont essayé de combler le fossé numérique et grâce
auquel bon nombre d'enseignants-chercheurs ont pu acquérir des machines.

Qu'ont fait les gens de ces machines ? Sur ce point, notre informateur,
membre du SYNARES et enseignant-chercheur à l'UFR SHS de l'uni-
versité de Cocody estime que « les militants se sont dits très satisfaits de
nous (SYNARES) après cette opération. Cette opération nous a permis
(à nous SYNARES) de nous rapprocher des militants ». Il confirme que
le projet n'a pas été évalué. Il estime que « les utilisations des individus
sont variables. Par exemple (il cite des collègues à lui et s'inclut dans la
liste) nous en faisons une utilisation intensive. Par contre, un monsieur
comme (il cite un de ses collègues), son ordinateur est encore dans son
emballage ». Puis il s'interroge : « est-ce que les collègues utilisent ces
ordinateurs ou est-ce qu'ils (ces ordinateurs) sont les jouets des enfants ? »

Notre étude révèle un certain nombre de logiques individuelles surgis-
sant après coup[15]. La participation financière, fût-elle réduite, induit chez
bon nombre d'enseignants le sentiment d'avoir acheté l'ordinateur, d'en
être les véritables propriétaires et d'en faire ce qu'ils veulent. Certains
auraient semble-t-il détourné l'ordinateur Dragados de l'usage prescrit[16].
Il semblerait que tous ne l'aient pas emporté à leur domicile. « Certains
l'ont déposé à l'université, dans leur bureau parce qu'ils n'ont pas de

place chez eux », « d'autres les laissent au bureau parce qu'ils peuvent s'offrir mieux », etc. Des témoignages sur des utilisations à but lucratif de ces ordinateurs acquis grâce au projet Dragados sont concordants. C'est ce qu'expriment ces enseignants : « les enseignants les ont loué », « ils les ont vendus », « la moitié des ordinateurs du projet SYNARES se retrouve dans des cybers », « un cyber, c'est plus rentable », « l'ordinateur (Dragados) est déplacé… un cyber ça rapporte plus ! ». En outre, beaucoup de ces ordinateurs, une fois introduits à la maison, seraient littéralement privatisés par les enfants. Les machines deviennent en quelque sorte leur chose et leur affaire : « ce sont mes enfants qui s'en servent surtout pour les jeux. Il y a beaucoup de jeux dessus », déclare ce sociologue. Tel collègue de philosophie dit que l'écran de son ordinateur est en panne, qu'il doit le remplacer et qu'il prendrait un abonnement à Internet dès que cela serait fait. Qu'en fait, c'est son fils qui se sert de l'ordinateur. Les enseignants-chercheurs qui témoignent sont littéralement subjugués par les « dons » de leurs rejetons en matière d'informatique : « on dirait que c'est inné chez eux ». En somme, conclut un enquêté, « l'Internet, les ordinateurs (de Dragados) c'est bien, mais beaucoup ne s'en sont pas servi dans le sens que le gouvernement souhaitait ». On comprend mieux pourquoi et comment ils peuvent servir à autre chose qu'à familiariser les enseignants-chercheurs avec les TIC, c'est-à-dire à aider avec l'Internet à améliorer les performances professionnelles de ces derniers. À dire vrai, l'utilisation de l'ordinateur ne va pas de soi, nécessite toujours un apprentissage de la part de l'usager, car son fonctionnement reste somme toute opaque :

> À travers la relation à l'objet technique, c'est en effet la relation à un domaine de connaissance qui se trouve impliquée dans l'usage, c'est-à-dire à l'informatique dans le cas du micro-ordinateur, un domaine que l'on a longtemps associé à la programmation et aux mathématiques (Millerand 2002 : 188).

À l'intérieur de l'université en tant qu'espace physique, les chercheurs ont souvent accès à des réseaux, sont en rapport avec des universités et institut de recherche à l'étranger. Ces connections font d'ailleurs partie de leurs jardins « secrets » et entrent dans leurs logiques de réussite universitaire et donc de réussite sociale. Dans un environnement où « pour évoluer normalement il faut se cacher pour travailler en paix », il ne s'agit pas de simples cachotteries. Certains collègues enquêtés accusent leurs pairs de les « trahir » en leur cachant des informations (des tuyaux) utiles pour leur carrière. Cela va jusqu'à être assimilé à de la sorcellerie : « Jeune

frère tu sais, il y en a parmi nous (les collègues) qui se comportent vraiment comme des sorciers. Ça c'est de la sorcellerie moderne. On utilise les inventions des blancs pour faire de la sorcellerie ». Certes, la technologie apparaît bien souvent occulte, mais en est-il des réseaux télé-informatiques comme il en est des pratiques sorcières ? En réalité, sous ces paroles se dissimulent des questions de relation de pouvoir et de domination. Les logiques de l'utilitaire et de la réussite individuelle conduisent certains à une rétention stratégique des informations où seuls ceux qui disposent d'informations en temps et en heure multiplient ou conservent leurs chances de s'en sortir. Là se joue la compétition entre les acteurs pour occuper des positions dominantes dans le champ scientifique. L'enjeu fondamental est celui de la promotion individuelle qui passe par la reconnaissance par les pairs. Cette reconnaissance donne la possibilité d'accéder à la catégorie dominante du champ universitaire et d'en contrôler les ressources.

Les effets des TIC sur le travail d'enseignement et de recherche

De quels changements les TIC se font-ils les accompagnateurs car « Internet ou l'ordinateur sont régulièrement pris pour ce qu'ils ne sont pas » et fréquemment « crédités de ce qu'ils ne font que rendre possible » (Moeglin 1999 : 1). On peut estimer qu'avec l'utilisation du courrier électronique dans les activités de recherche, le travail des enseignants chercheurs se modifie quelque peu. Cette nouvelle donne dans le travail a des conséquences sur le travail scientifique des enseignants chercheurs, même si tous n'en ont pas vraiment conscience.

L'organisation du travail individuel

La communication au sein du travail scientifique leur paraît plus commode parce qu'« Internet facilite les contacts » et qu'ainsi les échanges sont simplifiés. De plus, Internet met en confiance car, mieux que le téléphone cellulaire, « on sait que le correspondant a reçu le message dans sa boîte ». Toutefois, le fait de se déplacer dans les cybercafés, de ne pas avoir de connexion à proximité, sur les lieux de travail, est un sérieux handicap car, très souvent, « il faut aller lutter avec les étudiants » et cela peut être gênant.

Par ailleurs, les enquêtés estiment que la forme de correspondance est simplifiée aussi parce qu'elle est moins formelle. Cela correspond à « l'esprit jeune », nous explique ce jeune enseignant. En réalité, les relations « internautiques » avec les collègues ne deviennent pas moins codifiées. Elles ne font qu'entrer dans le processus de construction d'une relation

déjà engagée. De la sorte, la plupart des personnes ayant déclaré se servir de l'*e. mail* pour le télé-travail l'ont fait après qu'un contact physique ait été pris. Pour l'heure, ceux qui utilisent le *mail* disent échanger davantage avec leurs collègues étrangers qu'avec les collègues locaux (par ce moyen). Cela risque même de créer un gap entre ceux qui, déconnectés, en restent à leurs « vieilles problématiques » et leurs méthodes surannées et ceux qui sont au faîte des questions « d'actualité scientifique », des questions « chaudes » et qui, se « ressourcent » ainsi « se régénèrent »… Les expressions utilisées par les enseignants chercheurs interviewés révèlent un certain dépit vis-à-vis de la situation qui est la leur : « On nous demande d'être au même niveau que les autres (les gens du nord) et on ne nous donne pas les moyens. C'est ce qui nous tue ».

Les collègues connectés estiment en gros qu'Internet facilite leur travail et leur permet de gagner du temps. Chacun se débrouille comme il le peut. C'est pourquoi nous sommes enclin à parler de « bricolage ». En fait le travail de recherche d'information a connu une amélioration avec les formidables possibilités d'ouverture, avec la quantité, la rapidité surtout avec laquelle il est possible de créer un texte. Comme le dit si bien cet enseignant, « c'est plus facile de faire du couper-coller ».

Certains ont donc bien le sentiment que leur travail a changé, même s'ils ne s'attendent pas à cette question. Les plus enthousiastes évoquent même une certaine « efficacité » face à « la rapidité », le « gain de temps », la possibilité de « collaboration avec d'autres chercheurs ». Internet permet d'échanger des informations, des articles, des commentaires, etc., avec d'autres collègues chercheurs. Par contre, des étudiants attirent notre attention sur les risques de plagiat. Et c'est pourquoi ils estiment que « les vieux pères sont dépassés » ! Cela implique-t-il pour autant des changements dans les rapports interindividuels ? (*cf. infra*).

Quels effets sur le travail en équipe ?
Certains chercheurs interrogés estiment que les échanges s'intensifient avec le courrier électronique, mais sont extravertis. Considérant les activités de recherche au niveau local, nous sommes dans « une société où on peut encore se déplacer ». Affirmer que la communication médiatisée par ordinateur se renforce entre les chercheurs ivoiriens est peut-être prématuré. Un enseignant chercheur en Lettres qui déclare employer beaucoup le *mail* explique : « je pense que, quand on sait utiliser (l'ordinateur, le mail), c'est plus facile qu'avant. On communique plus avec les collègues à l'extérieur (l'étranger). Mais au fond c'est la même chose. On se débrouillait autrement. Aujourd'hui, c'est plus rapide c'est tout ».

Si l'Université ivoirienne n'a pas beaucoup de visibilité sur Internet (*cf. supra*), les individus toutefois sont très souvent en relation avec des partenaires (universités, instituts de recherche, Ong, organismes internationaux, etc.) grâce à l'*e mail*. Cet individualisme numérique est perceptible dans toute la communauté des chercheurs et ne semble pas propre à une catégorie spécifique d'acteurs.

L'idée des contacts associée à celle de « survie » intervient également (Bahi 2004a, 2004b). Il faut « être » et « rester en contact », « avoir » et « maintenir des contacts ». L'utilisation du *mail* ne peut donc pas renvoyer à des messages « purement » informatifs, mais bien également à des échanges plus ou moins informels, sur des sujets liés aux activités de recherche, surtout avec les collègues étrangers. Cette quête permanente des relations est aussi un invariant dans la sphère universitaire. La recherche du lien social est présente dans l'utilisation des TIC, faisant passer l'ordinateur du statut de machine à écrire perfectionnée à celui d'outil de communication et d'organisation… donc de dispositif avec lequel on va créer des liens sociaux.

L'étendue des relations et des correspondants ne se modifie pas complètement par la magie du courriel. Mais on peut légitimement chercher à comprendre quelles nouvelles manières de communiquer et de travailler résultent de ces usages des TIC, en sachant que, de toutes façons, nous sommes encore loin du concept de « collaboratoire » (Turner 1995) qui fait référence à ce renforcement des collèges invisibles par le développement de dispositifs technologiques, dans un contexte politique favorable et qui renvoie également référence à la prolifération des communications informelles que la messagerie électronique rend possible (Chartron 1997).

La recherche d'informations

L'usage d'Internet est prégnant dans la recherche d'informations par les collègues. Tel jeune collègue affiche, fièrement, sur le mur de son bureau, la biographie de Jean-Michel Berthelot obtenue sur le web. Car, à ses yeux, cet éminent sociologue représente l'intellectuel véritable, le modèle, etc. Il en va de même pour des recherches sur les collègues, et surtout sur les aînés, dans l'espace universitaire : « Est-ce qu'on les connaît ? Qu'est-ce qu'il publie ? Maintenant (avec Internet) on ne peut plus se cacher ». Cela conduit à des situations de méfiance (probablement une méfiance partagée). Elle suit une période de fascination ponctuée par une démystification souvent brutale. L'usage des technologies donne même le sentiment de mieux connaître les uns et les autres et même de dominer la connaissance. Les étudiants, toujours prêts à tester les connaissances de

leurs « profs » agissent pareillement : « j'ai googuelisé et parmi mes profs je sais qui est qui ». Maintenant, on « googuelise » aussi pour trouver des renseignements sur les collègues. Il y a chez bon nombre de doctorants l'idée selon laquelle leurs maîtres, les vieux, ne sont pas au faîte de ces TIC, qu'« ils voient brouillard dans les NTIC[17] ».

Chez les doctorants interrogés, le réflexe TIC semble être acquis pour la recherche d'informations dans le cadre de leurs travaux. Il était donc important d'explorer avec les enseignants et chercheurs enquêtés « les principales sources d'informations recherchées lors de l'élaboration du travail scientifique ». Notre enquête met en évidence deux formes principales de recherche d'informations directement liées au travail scientifique : la recherche bibliographique classique à la façon Internet ; la recherche de documents à exploiter.

Internet ouvre des perspectives en matière d'accès aux données. Toutefois, cela cause quelques frustrations, car les résumés les tiennent informés, mais ils restent sur leur faim. Surfer de site en site, ne convient pas à tous les chercheurs. Le coût de la navigation, élevé pour le commun des chercheurs, constitue un frein important. Ils aiment bien avoir des moteurs efficaces, des adresses de sites précises, etc., afin de trouver rapidement ce qui les intérese. En réalité, les questions de matériel et de coût rendent difficile l'accès à l'information scientifique dans un environnement qui lui-même n'est pas très technologique.

Beaucoup évoquent la localisation de l'information comme victoire sur la technologie et entrée dans le 3ème millénaire. La recherche bibliographique est une chose, la recherche effective de textes scientifiques et actuels en est une autre. Les enseignants-chercheurs n'escomptent pas seulement d'Internet des contacts ou le « repérage » de références bibliographiques par « Yahoo » « Google » ou « Copernic ». Un embarras, celui du « manque d'information » qui, relativement à Internet, peut sembler paradoxal. Mais le paradoxe n'est qu'apparent, comme le suggère cet enquêté qui dit utiliser la recherche d'information sur Yahoo et dit aller beaucoup sur Google : « Souvent on met le titre du colloque mais on ne met pas les informations elles-mêmes. Il existe des résumés de colloques ; mais seulement des résumés. Il n'y a pas souvent les textes ». Certains, parce que déçus, s'énervent : « il y a Internet, mais on ne peut même pas s'en servir ! On veut un article mais on ne peut pas l'obtenir ! Parce qu'il faut payer ! ». Il arrive un moment où n'avoir accès qu'à des résumés d'articles ou d'ouvrages devient « frustrant »…

Au demeurant, faire des recherches en ligne revient cher. Les individus développent alors des ethnométhodes de portée restreinte, c'est-à-

dire des « façons de s'y prendre » avec l'ordinateur, avec Internet, et au moyen desquelles les chercheurs fabriquent du sens partageable à l'échelle de leur communauté. Ces pratiques quotidiennes ordinaires sont foncièrement transmissibles dans la mesure où elles se développent dans un contexte d'usage, dans les tactiques, trucs et astuces des uns et des autres.

L'imprimé est central dans tout ce travail des chercheurs qui disent privilégier les livres et les revues papier. Le véritable problème est le manque d'ouvrages à jour. Il faut certainement relier cela à la faiblesse de la production et à la pauvreté des bibliothèques, au coût très élevé des ouvrages papier, etc. Certes, les TIC ne sont pas les seules possibilités de pallier le manque de documentation. L'Université ivoirienne détiendrait certainement la palme du photocopillage (donc du meurtre avec préméditation) des ouvrages papier autant chez les étudiants que chez les enseignants et chercheurs. Les « branchés » déploient des trésors de patience et de ruse pour se procurer des ouvrages. Chacun se débrouille, « se cherche » comme il peut : « c'est un sacrifice », expliquent des enseignants relatant les épreuves qu'ils surmontent pour se procurer des ouvrages récents. Personne n'évoque explicitement de revues électroniques. La plupart du temps, ils ne savent pas comment avoir un abonnement à une revue en ligne et ne se renseignent pas non plus.

Les textes repérés à l'aide d'un moteur de recherche et effectivement trouvés sont souvent imprimés au cybercafé s'ils ne sont pas trop volumineux, ou enregistrés sur disquettes afin de les imprimer à moindre coût. Certaines pages web sont copiées et récupérées sous *Word* pour pouvoir être imprimées. Il est intéressant de trouver des textes soit au format PDF il y en a qui sont très bien, très propres. Parfois, sur certains sites, les tirages ne sont pas satisfaisants. Alors, certains disent sélectionner des textes (format HTML) qui les intéressent, les copier, ouvrir Word et coller le texte et se servir du traitement de texte pour les arranger et en faire des copies propres qu'ils relieront par la suite et qu'ils mettront dans leur bibliothèque, papyrocentrisme oblige...

Les difficultés que rencontrent les enseignants-chercheurs dans les cybercafés nous semblent maintenant « classiques ». D'abord, la lenteur des machines joue immédiatement sur le coût (Bahi 2004a, 2004b ?). Ensuite, le tirage papier apparaît comme une importante difficulté. En effet, consulter un article revient souvent à faire une lecture très rapide sur Internet par exemple, et à en faire un tirage papier pour pouvoir y travailler. Le temps que l'on passe devant un ordinateur, le plus souvent dans un cybercafé, est limité. On note que

> Souvent le texte est long, quarante pages, cinquante pages. Tu veux les tirer (imprimer) mais cela revient cher. 100F la page. C'est lourd (pour le budget). Et puis il y a des articles qui ne sont pas imprimables. Tu veux les tirer il y a des mots qui sautent soit à l'extrême droite soit à l'extrême gauche. En plus de tout ça, on perd du temps dans le cyber.

Les TIC, des outils pour la production et la diffusion des connaissances

La communication, qu'elle soit établie directement avec autrui ou par l'intermédiaire des écrits et des publications, permet « d'échanger, de discuter des idées, des approches » (Iacovella 1999). Elle est, *ipso facto*, au cœur du processus de construction du savoir scientifique. Le courrier électronique, application la plus utilisée d'Internet, permet cette communication. Certes, il ne s'agit pas de publication électronique à proprement parler, mais d'envoi d'articles à des revues papier par fichiers attachés. Il pallie alors les lenteurs de la Poste, participe à l'organisation du travail de recherche et indirectement à l'élaboration des connaissances scientifiques.

Quel « marché » ivoirien de l'édition électronique scientifique ?

Les publications électroniques scientifiques ont besoin d'un marché pour vivre et se développer. Marché qu'on peut appréhender en tant que « lieu de rencontre » entre l'offre et la demande de publications électroniques aboutissant à la formation d'un « prix ». Plus qu'un simple marché, le secteur éditorial scientifique, intimement lié à la manière dont la science s'organise, « trouve dans l'université et le monde de la recherche, auteurs, circuits de prescription, débouchés (les bibliothèques) et clients (les étudiants, les enseignants et les chercheurs) » (Cartellier 2000). Le marché ivoirien des publications scientifiques numériques est censé exister parce qu'on le calque sur celui des publications papier. Tout comme ces dernières, les revues scientifiques numériques en particulier ne retiennent qu'un nombre limité de lecteurs avisés. Mais, en principe, les enseignants et chercheurs sont à la fois producteurs et consommateurs de contenus intéressant les revues scientifiques électroniques à double titre. Celles-ci constituent donc des prospects naturels. Les bibliothèques (universitaires) et les éditeurs « indigènes », en tant qu'intermédiaires, constituent aussi des acteurs incontournables de ce marché complexe de l'édition électronique scientifique. La réalité empirique de nos universités est peut-être en réalité plus contrastée et plus nuancée qu'il n'y paraît. Il existe en effet des disparités entre les enseignants chercheurs eux-mêmes d'une part, mais aussi entre les enseignants et les étudiants d'autre part. La

diffusion électronique peut-elle constituer un palliatif à la double « crise de l'édition et de la documentation » que connaît l'université ivoirienne[18] ?

Pour beaucoup d'« anciens », avoir publié ses articles dans les *Annales de l'Université d'Abidjan* reste une référence. Le département de Géographie de l'UFR des Sciences de l'Homme et de la Société bénéficie de « l'aide » d'universités européennes dont celle de Neuchâtel (Suisse) et une autre en Allemagne. Les revues scientifiques de ces universités leur « laissent quelques pages » pour leurs articles.

Tel collègue, qui se dit « ancien de la maison », dit ne connaître aucune publication électroniques, même s'il dit d'Internet que « ça permet d'avoir beaucoup d'informations ». À la question de savoir s'il en utiliserait pour ses propres publications scientifiques, il rétorque que cela dépend du caractère scientifique de la publication. Il faut en effet qu'elle soit reconnue par le milieu scientifique. Car, explique-t-il, « tout le monde va sur Internet », y compris les journaux de la presse écrite tels que *Fraternité Matin.* Pour lui, malgré tout, publication électronique et Internet sont étroitement associées

Quelques personnes enquêtées déclarent ne connaître aucune publication électronique. La plupart des enseignants et chercheurs disent ne pas connaître les publications électroniques. Pour certains, « je ne savais même pas que ça existait », « tu viens de m'informer ». Pour d'autres, le propos itératif est ainsi décliné : «j'utilisais ça , mais je ne savais pas le nom ».

Cette méconnaissance de l'objet revue électronique nous semble la chose la mieux partagée à l'université de Cocody (mais cela demande encore des vérifications), aussi bien chez les « jeunes » enseignants et chercheurs, que chez les plus âgés, quelle que soit leur discipline d'origine. Après quelques explications, somme toute, difficiles, certains se rendent compte qu'ils ont déjà plus ou moins eu contact avec ces fameuses revues électroniques mais n'en savent pas le nom. Les doctorants sont les plus loquaces. La tendance chez eux, c'est visiter les sites web pour pallier les difficultés de documentation auxquelles ils sont confrontés.

Chez la plupart des doctorants interrogés, les publications numériques et les TIC d'une manière générale ne sont pas citées spontanément comme moyen de trouver de la documentation. Dès que l'on évoque les TIC, les réponses restent souvent stéréotypées : « j'y trouve beaucoup de choses ; tu introduis ton thème et ça te sort tous les documents qu'il y a dessus ». Pour d'autres encore, « on utilise ça mais on ne connaît pas le nom ». D'autres enquêtés enfin, réalistes, semblent conscients des lois du marché de l'édition :

> C'est utile pour la documentation. Par exemple, les classiques en sciences sociales, il y a certains textes qui sont téléchargeables d'autres pas. C'est

pas encore les (textes des auteurs) contemporains. Il faut voir que s'il y en a trop en ligne les gens ne vont pas acheter (les versions classiques papier).

Les revues électroniques comme moyen de communication scientifique

Les avis des enquêtés sont encore très partagés sur les publications électroniques. Après un laïus sur les autoroutes de l'information, le collègue interrogé (un juriste) a évoqué l'expérience française de mise en réseaux de bibliothèques, notamment à Paris et Marseille; en fait, il décrit une expérience d'*open access* sans en évoquer le nom. Pour ceux qui savent ou osent s'en servir, Internet reste la porte d'accès privilégiée à la publication électronique, non en tant que producteurs mais en tant que consommateurs. Pour d'autres, échaudés, les trouvailles sur Internet, y compris les publications scientifiques électroniques, sont progressivement accueillies avec méfiance. Ce témoignage subsume bien cet état d'esprit :

> Au début, je croyais que les publications sur Internet c'était le top ! Les génies ! Mais j'ai été déçu de découvrir des fautes d'orthographe, de grammaire, des erreurs de construction des projets de thèse. Je me suis rendu compte que l'on peut balancer n'importe quoi sur Internet. A partir de ce moment là j'ai commencé à me méfier.

D'autres collègues restent enthousiastes et estiment au contraire qu'Internet, rapide, facile et confortable a changé en bien leur « méthode » de travail :

> Cela a changé ma manière de travailler dans le bon sens. Avant, il fallait aller lire, recopier, faire des photocopies, etc. (il décrit la manière de travailler) maintenant, c'est plus facile de faire du copier coller ». (Mais il y a un risque, ajoute-t-il, celui de) « la perte du style classique d'écriture. On écrit plus de la même manière (…) avant, on écrivait, on gommait, on raturait, on reprenait. Maintenant ce n'est plus comme ça (…) le plus important, c'est la rapidité avec laquelle on peut comparer les informations.

Il a également cité une revue électronique qu'il a connue grâce au responsable d'un centre de recherche français avec lequel il est en rapport de travail et d'amitié. Il préfère les publications électroniques aux publications papier parce qu'il y a « un gain de temps » et parce qu'il y a « une ouverture sur le monde ». Au contraire, « les publications papier restent dans l'espace francophone ». Toutefois, estime-t-il, « si les articles des revues électroniques étaient rémunérés, ce serait bien mieux. Sur Internet, c'est pas rémunéré ». En fait, cet enquêté, qui a publié un article dans une revue qui l'a dédommagé, croit que toutes les revues (scientifiques) gratifient leurs auteurs.

Tel enseignant de médecine a retracé « le parcours pour devenir professeur »… c'est-à-dire « le nombre d'articles à publier pour changer de statut ». Il a déjà publié dans des revues « papier » disponibles sur le net. Il a cité une revue de la Société Panafricaine des Sciences Neurochirurgicales qui est maintenant on line. Il trouve « les vieux » enseignants-chercheurs « sclérosés » et que « le mandarinat ne rend pas service à la communauté savante ».

Beaucoup de clichés apparaissent dans les propos des personnes rencontrées, viennent construire les représentations des revues électroniques. La question de la publication scientifique électronique articule en fait deux éléments : celui de la publication scientifique d'une part et celui de la technologie d'autre part. Ensuite, elle peut être envisagée, soit comme moyen de documentation d'un travail, soit comme espace de publication, et donc comme moyen de publication du travail scientifique. Ce faisant, elle entretient des croyances de la communauté scientifique universitaire concernant les publications, tout en y ajoutant celles plus prosaïques des nouvelles technologies dont Internet est le fer de lance. De fait, dans la conscience des chercheurs interrogés, pour ceux qui savent à quoi cette expression renvoie, les publications scientifiques électroniques, c'est, d'abord et avant tout, les revues scientifiques sur Internet.

La grande appréhension

La procédure est très formalisée pour les revues scientifiques. Une publication cotée obéira nécessairement à certaines normes. L'évolution de la carrière des enseignants-chercheurs passe par la valorisation due à leurs publications (nombreuses et de qualité). « Un chercheur, dans le monde académique, n'existe que s'il publie. Sa carrière suivra le nombre et la qualité de ses publications. Son laboratoire sera évalué aux publications de ses membres. Le financement général de la recherche est corrélé à ce processus » (Chartron et Salaün 2000 : 32).

Mais beaucoup d'ignorance, de confusions et de craintes non fondées existent concernant la publication électronique qui, somme toute, demeure une inconnue. À son évocation, les collègues s'inquiètent immédiatement :

Est-ce que le CAMES reconnaît ça ? (les publications électroniques)

Est-ce que les revues électroniques connues… et cotées ?.

Publier sur électronique… je ne crois pas… parce qu'il y a le CAMES… Notre promotion passe encore par les supports classiques papier

Les pages web sont-elles reconnues par le CAMES ?

> En termes de recherche d'information les publications électroniques sur Internet oui… mais publier… il y a encore un retard ici (en Côte d'Ivoire)

> Il faut faire des recommandations au CAMES pour qu'il tienne compte des publications électroniques remplissant les critères requis d'une revue scientifique.

L'interconnaissance favorise la diffusion de rumeurs persistantes dans la communauté universitaire. Par exemple, les renseignements sur le CAMES ne se prennent pas au CAMES, ou de responsables de cette institution, mais auprès d'un collègue qui y a réussi quelques temps plus tôt. Cet informateur devient ainsi détenteur d'un certain pouvoir sur son collègue (exerce une certaine domination). Or, les dispositions arrêtées par les CTS évoluent… [et notamment qu'ils tiennent compte désormais des publications électroniques]. Ils ignorent également qu'ils peuvent trouver les informations dont ils ont besoin sur le site du CAMES, que, par ailleurs, personne n'a évoqué. Les enseignants-chercheurs interrogés ignorent en outre que des revues électroniques ont des comités de lecture, des numéros d'ISSN, tandis que des revues papier censées être cotées n'en possèdent pas. Enfin, chez bon nombre d'enseignants-chercheurs rencontrés, prédomine la vision utopique d'un monde universitaire numérique : l'effondrement des coûts de publications[19], la disparition de la médiation de l'éditeur, la modification de l'écriture académique, la disparition de la formalisation. La véritable question en ce qui concerne les revues électroniques est : faire de la recherche et publier ont-ils encore un sens positif pour les acteurs du champ universitaire ?

La production d'ouvrages et d'articles scientifiques ne semble plus avoir de sens positif pour les acteurs sauf, lorsque ces derniers en espèrent un changement de grade et donc une promotion à court terme. De nombreux responsables de revues universitaires déplorent le fait que « c'est au moment de présenter le dossier du CAMES que les collègues envoient des textes ». Chez les « jeunes » chercheurs confirmés, qui escomptent bien un changement de grade, la pensée de publier électroniquement est accueillie positivement. Mais leurs craintes tournent en fait autour des « règles de validation scientifique » et finalement de la « bonne pratique scientifique » : de telles publications sont-elles « cotées » et « reconnues dans les évaluations pour les promotions et les titularisations » ? Dans la conscience des collègues, la cote d'une revue est confondue à la visibilité et peut-être à la notoriété que lui confère sa présence sur la « toile ». Or, Internet devient un moyen d'évaluer la réputation d'un enseignant chercheur, à tout le moins d'affirmer son existence dans le cyberespace public

scientifique. Cette donne transforme leur perception de la publication scien-
tifique elle-même. Mais l'idée ineffable qui sous-tend leurs propos est
celle de la publication « utile », rentable « immédiatement », celle qui ren-
dra leur dossier d'évaluation solide et qui donc servira à la carrière. La
publication électronique est encore suspecte. Les revues électroniques ne
leur semblent pas *a priori* « profitables », car ils croient que leurs
évaluateurs n'en tiennent pas compte. C'est surtout pour cela qu'ils hési-
tent. La logique du calcul n'est donc pas absente de cette attitude. Les revues
papier ont donc plus de prestige à leurs yeux et sont surtout moins risquées.

Enfin, certains enquêtés, étudiants comme enseignants, ont évoqué le
danger du plagiat, regrettable pour tous les travaux universitaires. Ce ris-
que est favorisé à la fois par la facilité à « copier-coller » certains textes
et par l' « illectronisme » des professeurs. Cette pratique n'est pas racon-
tée comme un danger, mais comme faisant partie des trucs et astuces
pour se tirer d'affaire, éblouir les maîtres et réussir. Mais, dans le même
temps, ils sont convaincus qu'il peuvent utiliser, voire plagier des textes
sans être pris, et donc qu'ils peuvent abuser leurs professeurs et passer
pour géniaux… Cette débrouillardise contient donc un effet pervers : un
risque de dérive vers la mystification et la falsification serait un très grave
corollaire direct de ce manque d'information. Cet effet pervers touche à
l'éthique en matière de recherche scientifique tant que leurs évaluateurs
et examinateurs (les maîtres) seront dépassés par la technologie…

Conclusion

La perspective des logiques individuelles que nous avons adoptée permet
d'entrevoir certains pans de la réalité complexe des effets de l'utilisation
des TIC sur les individus sur eux-mêmes. L'Université, qui concentre
l'essentiel des scientifiques ivoiriens, a de faibles moyens matériels et
financiers, peu d'infrastructures adaptées, un nombre élevé d'enseignants-
chercheurs et d'étudiants. Plutôt que d'aider à reproduire des marginalités
ou à produire de nouvelles inégalités, l'enjeu de l'utilisation des TIC est de
construire une communauté scientifique forte valorisant les productions
africaines et faisant de ses chercheurs moins des consommateurs que des
producteurs de connaissances.

L'intégration des TIC dans l'activité d'enseignement et de recherche,
diverse, multiforme, sur laquelle repose de nombreux espoirs, a des effets
plus importants sur la documentation, la recherche d'information que sur
les procédés pédagogiques. Pour l'heure, la tendance suivante semble se
dessiner : l'ordinateur connecté à Internet est utilisé comme un outil de
transmission et de réception du courrier permettant d'acheminer des arti-

cles et accessoirement d'organiser le travail ; les enseignants-chercheurs utilisent surtout des publications numériques pour se documenter et non véritablement pour publier. Ainsi, on peut estimer qu'Internet a un certain rôle à jouer quoique timide dans l'accès aux informations scientifiques et à leur diffusion. Là encore, les TIC et notamment Internet ne font que reproduire une tendance déjà existante : l'accessibilité aux revues papiers des pays du nord est difficile aux collègues africains.

Certes, la plupart des enquêtés n'ont pas le sentiment que leur travail a changé et beaucoup d'entre eux expliquent, même de façon péremptoire, que « la démarche scientifique reste la démarche scientifique » et que les TIC ou « les publications électroniques ne peuvent pas changer cela ». Il est donc encore tôt pour dire si l'utilisation des TIC bouleverse les pratiques de recherche. Mais d'ores et déjà, certains estiment qu'Internet commence à déranger l'Université, même si le rythme paraît lent. Des fenêtres s'ouvrent sur la « société de l'information » et le petit monde universitaire ivoirien n'est pas exclu du cyberespace public scientifique. Comme des leçons bien apprises dans les médias, les collègues savent presque tous dire que l'enjeu véritable des publications électroniques est de permettre l'accès aux résultats de la recherche et la diffusion des travaux à un plus grand nombre de chercheurs.

Quant aux perspectives du « marché » de l'édition électronique, le problème semble être celui du financement. Deux voies se présentent : « soit concurrencer les revues existantes par des publications électroniques à moindre coût » ; « soit faire supporter les frais de publication par les auteurs ou les institutions ». Le retard actuel de l'Université ivoirienne est un défi à relever, en pensant d'emblée les problématiques actuelles et en évitant les erreurs et écueils de l'économie du système traditionnel des publications scientifiques. Les chercheurs, laboratoires, centres de recherches et UFR devront certainement supporter une partie des coûts d'évaluation et de publication électronique. Les éditeurs proposeraient alors des versions électroniques des publications qu'ils gèrent. Pour les bibliothèques, la solution se trouve peut-être dans l'*open access* par les campus de Côte d'Ivoire. L'Université ivoirienne doit re-donner à l'information scientifique une place centrale et, en cela, à la bibliothèque nouvelle on doit donner comme tâche non seulement « encaisser » les informations mais aussi savoir les suivre. À cette université de s'engager dans la digitalisation et de participer à des regroupements locaux, voire sous-régionaux en Afrique de l'Ouest. Le contrôle de l'édition scientifique par l'Université devient alors un atout. Il s'agirait de stocker systématiquement une copie électronique de chaque mémoire, thèse, article, livre, etc. Les publications

électroniques permettraient de créer des supports didactiques adaptés aux réalités locales.

Pour qu'Internet change quelque chose, il faut que les différents acteurs du domaine de l'enseignement supérieur et de la recherche s'investissent dans les nouvelles situations d'usages qui se profilent (Agbobli 2002 : 13). Mais attention : les TIC, qui entrent subrepticement dans le champ universitaire, vont prolonger et amplifier des usages existants, des manières d'échanger entre collègues. S'il n'y a pas une volonté de départ, une dynamique de création d'équipes locales de recherche et de publication des travaux, l'usage des TIC ne changera rien. Si les échanges sont quasi nuls entre collègues, ils ne s'intensifieront pas plus avec le *mail* : les échanges par courrier électronique « ne permettent pas de créer *ex nihilo* une communauté de recherche, mais de resserrer des liens existants » (Hert 1996 : 100). L'Université, qui est très conservatrice, doit faire sa mue et changer en profondeur ses valeurs et sa culture. Peut-être n'a-t-on pas su jusque là s'ouvrir aux partenaires extérieurs ou, tout au moins, nouer des partenariats propices au financement et au développement des instruments de diffusion de la connaissance scientifique. À l'Université ivoirienne de trouver sa voie et d'y mettre les moyens. Dans ce domaine, les bonnes idées sont plus abondantes que les bonnes volontés.

Notes

1. Le champ est un système de positions se définissant les unes par rapport aux autres, dont l'existence est « corrélative de l'existence d'enjeux et d'intérêts spécifiques (…) L'intérêt est à la fois condition du fonctionnement d'un champ (...) en tant qu'il est 'ce qui fait courir les gens', ce qui les fait concourir, se concurrencer, lutter, et produit du fonctionnement du champ » (Bourdieu 1987 : 124-125). Le champ scientifique est, comme tout champ, un lieu de rapports de forces dont un des enjeux est le contrôle des ressources du champ (Bourdieu 1980 : 113-114).
2. Elle s'est déroulée de février à avril 2004.
3. Nous regroupons sous ce terme, et sans distinction, les « chercheurs » et les « enseignants-chercheurs ».
4. L'Université de Cocody compte environ 1200 enseignants permanents tous grades confondus (dont 18% de femmes), 500 personnels administratifs et techniques et 50000 étudiants (source : Vice Présidence chargée de la Planification). Nous envisageons ultérieurement, d'étendre les enquêtes aux universités d'Abobo-Adjamé et de Bouaké (actuellement déplacée à Abidjan). L'Université de Cocody à Abidjan, concentre l'essentiel des acteurs concernés par l'étude. Elle préfigure la « vieille » université ivoirienne. Les deux autres Universités font figure d'institutions universitaires « jeunes » du double point de vue de leur création en 1996 et de l'âge moyen de ses

enseignants (surtout quadragénaires) contre des quinquagénaires de l'Université de Cocody). Par ailleurs, en raison de la situation de guerre que connaît la Côte d'Ivoire, l'Université de Bouaké est déplacée à Abidjan, et ne fonctionne pas dans des conditions optimales pouvant justifier de figurer dans le corpus d'une telle étude.

5. Au Service Informatique de l'Université de Cocody (SINFUC) il faut compter 2 personnes dont le premier responsable de cette structure, 3 responsables de bibliothèques universitaires et 2 personnes travaillant dans l'édition universitaire. Ces praticiens et experts personnes sont censés être des informateurs issus des autres catégories d'acteurs du champ universitaire mais qui sont indispensables au développement du travail de recherche.

6. Nous avons articulé des entretiens individuels semi-directifs et des entretiens non structurés (voire des données d'observations flottantes le cas échéant).

7. Dans le corps de cet article, nous présentons certains de leurs propos entre guillemets et en italiques.

8. Le « cadre d'usage » présenté plus haut devra nous aider à comprendre l'ajustement personnalisé de l'utilisateur dans le rapport entre l'individu et l'ordinateur (Flichy 1995).

9. Voir Université de Cocody [http://www.ucocody.ci] ; Université d'Abobo-Adjamé [http://www.uabobo.ci].

10. La production de textes scientifiques, par les enseignants et chercheurs eux-mêmes, reste faible même si les « prospects » sont a priori nombreux. Il existe certainement une corrélation entre cette faible production de textes et la maigreur de l'édition universitaire.

11. De ce point de vue, les revues Kasa Bya Kasa (Institut d'Ethno-Sociologie) et Géotrope (Institut de Géographie Tropicale) sont les plus célèbres parmi nos revues érudites.12. Syndicat National de la Recherche et de l'Enseignement Supérieur.

13. Bon nombre d'enseignants-chercheurs interrogés utilisent le terme « enfant » pour parler des étudiants et y compris des doctorants.

14. Dès 1998, le Ministère de l'Enseignement Supérieur de Côte d'Ivoire, dans une vision subsumée par « un enseignant chercheur, un ordinateur » a tenté d'améliorer l'accès aux NTIC à l'université en initiant le Projet Dragados. Cofinancé par la Coopération espagnole et le Ministère de l'Enseignement Supérieur, ce projet permettait aux enseignants-chercheurs, moyennant 100 000 FCFA de participation, d'acquérir un ordinateur et, à terme, de pouvoir se connecter. Le Service Informatique de l'Université de Cocody assurait le contrôle technique des machines ; le SYNARES en établissait les critères de distribution. Ce projet, à notre connaissance n'a pas encore été évalué. Qu'ont fait les enseignants-chercheurs de ces machines ?

15. Il est donc urgent de procéder à une évaluation véritable de cette première phase du Projet Dragados même si, bien souvent au cours des entretiens, on peut estimer que les militants du SYNARES s'en disent satisfaits.

16   Les enseignants-chercheurs répondant aux critères établis par le SYNARES,
      au moment de l'achat, s'engageaient par écrit à ne pas faire un autre usage
      que celui prévu pendant au moins cinq ans.

17.   Qu'ils n'y comprennent rien…

18.   Précisons que la numérisation démarre à peine à l'université d'Abobo-Adjamé
      qui propose quelques textes scientifiques téléchargeables au format Pdf
      [voir http://www.uabobo.ci].

19.   Les optimistes tels que par exemple l'initiative Leland ont largement contribué
      à répandre de telles idées.

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