

May 2011

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## Recommended Citation

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# **BENEFITS, CHALLENGES AND STRATEGIES OF AO AND REPOSITORY IMPLEMENTATION IN SEVENTH-DAY ADVENTIST UNIVERSITY LIBRARIES: AN INTERNATIONAL PERSPECTIVE**

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## **Abstract**

Open Access and institutional repositories are rapidly making their way into the scientific communications pipe line. Many universities are implementing their own intellectual production repositories using open access strategy and technology as a means for maintaining and accessing these archives. With this trend, libraries and researchers have free access to an abundance of subject, institutional and author access points. The literature is becoming robust in presenting the results of research depicting benefits from its use and the challenges libraries face implementing such initiatives. This research investigated 92 university and technological library directors from 66 different countries regarding their perspective on OA and institutional repository's benefits as well as the main challenges they face to implement such initiatives. Thirteen library directors from 10 different countries answered the survey. These results were then compared to the data reported in the literature of the area. Eleven benefits were reported. The main ones were: expands the circulation of scientific work; creates global visibility for an institution's scholarly works; maximizes research; accelerates the dissemination of research information; provides access to archival literature and allows digital copies to be posted in subject-specific institutional repositories. Thirteen barriers or challenges were presented. The main ones being: technological infrastructure; lack of budget or funds; lack of specialized personnel, and lack of implementation and maintenance quality control system.

## **INTRODUCTION**

A revolution is taking place in the scientific publishing. To take advantage of the alternative possibilities of electronic publishing and the Internet, many journals are making the scientific literature more freely accessible online, radically changing the publishing scenario.

According to Eysneback (2006) the development of the Internet has provoked changes in the way researchers conduct and share scientific research. Open access publishing has become a growing trend for the possibility of expanding the circulation of scientific work and maximizing the research. Accumulating evidence has shown that open access articles are cited more quickly and more frequently than non-open access article published in the same journal.

Although other studies do not confirm these findings, they could well be the reason why there has been an increasing interest from traditional journals in adopting open access as their new way of publishing. (Lai, 2009)

Open Access is free online research outputs available unrestricted to all without any restrictions on use commonly imposed by publisher copyright agreements. It refers to scholarly articles in full-text format made accessible to any user to read, copy, download, and distribute over the Web free and unrestricted.

In their article, Houghton, Rasmussen and Sheehan (2009, p.1) include the source of funding in their definition of Open Access. They state that “Open Access publishing refers to journal publishing and includes situations where authors, their employing or funding organizations or other supporters contribute to the costs of publication in open access journals in the form of submission and/or publication payments, and/or sponsor and support the operation of journals that are free to both readers and authors.”

Open access initiatives, in general, can be of two natures – green or gold. *Green Open Access* has been used for a long time by many authors, posting their own papers on their own website, which is much easier than sending out copies to a publisher. The author can self-archive as he/she has the option of simultaneously send out a copy to a publisher. The material is completely independent of journals.

On the other hand, in the *Gold Open Access* format, the material is sent to a publisher by the author or institution. In this case, a fee is generally paid by either one. This material is made available free at the “point of access” by the publisher. A typical example is electronic publishing, where the article or material is published in a journal comprised entirely of OA articles.

According to Houghton, Rasmussen and Sheehan (2009, p. 9), self-archiving “Refers to the situation where authors deposit their work in OA institutional repositories and/or subject repositories.”

Scholars met in different occasions and venues to define and establish principles and structure for Open Access initiatives. The most significant of these were the Budapest Open Access Initiative, which convened in Budapest by the Open Society Institute (OSI) on December 1-2, 2001 and produced a working paper in February of 2002. The purpose of the meeting was to accelerate progress in the international effort to make research articles in all academic fields freely available on the internet. There is also the Bethesda Statement which is a set of principles drafted during a one-day meeting held in April 2003 at the Howard Hughes Medical Institute in Chevy Chase, Maryland and released in June of 2003, and the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities, which is a major international statement on open access/open knowledge. This meeting was hosted in Berlin, also in 2003, by the Max Planck Society.

The Budapest Open Access Initiative concludes that:

It's free availability on the public internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself. The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited (Suber, n.d., p.1).

The Bethesda Statement holds that:

The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, perpetual right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship, as well as the right to make small numbers of printed copies for their personal use (Bethesda, n.d.).

The Berlin Declaration of October 2003 states that “We define open access as a comprehensive source of human knowledge and cultural heritage that has been approved by the scientific community. In order to realize the vision of a global and accessible representation of knowledge, the future Web has to be sustainable, interactive, and transparent. Content and software tools must be openly accessible and compatible” (Max Planck Society, n.d., p.3).

The open access and open archives movement, the need for changes in scholarly communication to remove barriers to access, and the increasing awareness that universities and research institutions are losing valuable digital and print materials have begun driving the establishment of institutional repositories (Drake, 2004).

Institutional repositories are created to manage, preserve, and maintain the digital assets, intellectual output, and histories of institutions. Institutional repositories are digital collections of the outputs created within a university or research institution. Librarians are taking leadership roles in planning and building these repositories, fulfilling their roles as experts in collecting, describing, preserving, and providing stewardship for documents and digital information.

Therefore, the main purpose of the institutional repositories is to provide Open Access to the institution's research output (Jeffery, n.d.). Swan (n.d.) reports that there were over 1300 institutional repositories around the world at the beginning of 2009. Institutional repositories can be made of a gamut of materials, such as: free, online copies of peer-reviewed journal articles; conference papers; technical reports; theses and working papers; research raw data files; presentations; original scientific research results; source materials; digital representations of pictorial and graphical materials; scholarly multimedia material; course materials; departmental databases; audio and video files; and institutional records, among others.

## **OBJECTIVE AND METHOD**

The main objective of this study was to identify the opinion of directors of Seventh-Day Adventist university libraries around the world regarding the advantages of OA as well as the main challenges they face for the implementation of an institutional repository. A questionnaire related to the objective of the study was sent 3 times to 92 university libraries representing 64 different countries around the world.

A literature review about benefits, advantages, and challenges regarding OA and institutional repositories was also conducted. The authors' opinions and insights were then compared to the results obtained from the surveys which were answered by Seventh-day Adventist university libraries' directors around the world.

## **LITERATURE REVIEW**

Institutional repositories initiatives based on OA strategies seem to be in the rise. The literature attests to its growth. More and more authors agree that Open Access corpus will represent an increasingly large proportion of the scholarly literature (Swan, n.d.); Musakali & Rotich, 2009; Corrado, 2005; Lai, 2009; Swan & Chan, 2010).

The delivery of repository services is increasingly becoming a crucial function of research libraries. Libraries deploy repositories to support open access; but also to collect, preserve and provide access to a broad range of content produced by the university community (Swan, n.d.).

One of the main concerns about the implementation and sustainability of OA initiatives is related to the costs involved and its impact on the community of scholars. Is it really worth the price? Corrado (n.d., p.3) seems to think it is. He states that:

The growth of the open access movement is partially in response to the enormous costs of many scholarly journals. With traditional journal publication methods, institutions are paying twice for the same article. They pay scholars to produce the work and then the institution's library pays to purchase the work back from the journal publisher.

It is Houghton's, Steel's, and Henty's (2004) opinion as well as Houghton's (2005) that the existing system of scholarly publishing evolved over many years to serve the needs of disciplinary research in specialist institutions in a print-based environment. As a direct result of this trend, Houghton and Sheehan (2006, p.2) explain that "the existing publishing system no longer serves well the needs of researchers for uninhibited access to the research findings of others, or the needs of their funders for cost effective dissemination of findings in order to maximize the economic and social returns to their investment in R&D. Therefore, repositories will form a permanent and critically important part of the scholarly communication process, according to Swan (n.d.).

For Anderson (2004), journal price inflation is itself the central problem and open access is the solution. The establishment of competitive open-access journals will force commercial publishers to moderate their profit-seeking behavior.

Musakali and Rotich, (n.d., p.4) emphasize that librarians who have openly supported Open Access believe that this structure of scholarly communication "promises to remove both the price barriers and the permission barriers that undermine library efforts to provide access to the journal literature."

The volume of published knowledge is growing exponentially and will always grow faster than library budgets, asserts Suber (n.d.). In that sense, he continues, "OA scales with the growth of knowledge and toll access does not. We've already reached the point at which even affluent research institutions cannot afford access to the full range of research literature. Priced access to journal articles would not scale with the continuing, explosive growth of knowledge even if prices were low today and guaranteed to remain low forever" (Suber, s.d., p. 9).

Technological development has a poignant role to play, enhancing the possibilities and opportunities for the implementation of OA initiatives considering the cost/benefit concerns. Houghton & Sheehan (2006, p.1) observe that:

New technologies offering new opportunities, changing research practices demanding new capabilities, and increased focus on research performance are changing the environment in which research is being conducted and disseminated. An important issue facing us today is are there new opportunities and new models for scholarly communication that could enhance the dissemination of research findings and, thereby, increase the returns to investment in R&D?

Suber (n.d., p. 7) supports this point of view. Commenting on the purpose of OA, he asserts that "Even though journal prices have risen four times faster than inflation since the mid-1980's, the purpose of OA is not to punish or undermine expensive journals, but to provide an accessible alternative and take full advantage of new technology – the internet – for widening distribution and reducing costs."

Libraries and scholars need to take advantage of the benefits technology brings to the scholarly communication process as well as the budgeting opportunities brought about by the low costs involved. Not only this, but also they need to take in consideration the services which these initiatives can provide.

Houghton; Rasmussen and Sheehan (2009) present key characteristics of OA Publishing. They are:

- "The focus of coverage is primarily scholarly journals articles, although OA book publishing is also emerging;
- Much of the content is being peer reviewed prior to publication enhancing quality control;
- Toll-free reader access to the online version of journal articles or books to anyone with Internet access;
- Authors, their funders or supporting institutions may be required to pay publication fees (e.g. in the 'author-pays' model), although often they are not; and
- Less restrictive conditions are placed on use, although practices vary depending on publisher choice – with some publishers demanding copyright while others adopt more flexible licensing alternatives."

The literature (Swan, s.d., p. 2) highlights services which institutional repositories can generate which traditional publishing services cannot, at least at the same level. These are services such as:

- a usage-reporting service;
- download articles to the researcher's CV;
- organize content in certain ways;
- aid the institution in assessing the institution's research program;
- report data to government or for other statutory requirements;
- collect articles from the institution's authors when they are ready for peer review and a peer review service will collect them from the repository for processing.

For academic and research institutions this means focusing on the advantages in having an instrument that can increase the usage and impact of its research and output, as well as maximize the visibility of the results obtained. It also contributes in providing a management information system for monitoring and assessing the academic production and research developed by researchers and faculty of the institution (Swan, n.d.).

The possibility of taking advantage of these services creates large expectations and it is seen by the scholarly community as a great opportunity to become more visible by disseminating one's research results to a wider audience.

Jeffery (n.d., p. 1) presents other strong motivations for the adoption of Open Access:

- "Ethics: There is an ethical argument that research funded by the public should be available to the public. Since research is an international activity, this crosses national boundaries.
- "Research Impact: Modern harvesting techniques and search engines make it possible to discover publications of relevance if they are deposited in an OA repository with a particular metadata standard.
- "Costs: There is concern over the hindrance to research caused by the cost of journal subscriptions, whether electronic or paper. These costs run well above the rate of inflation with the result that libraries with restricted budgets are no longer providing many journals needed by researchers.
- "Just reward: There is a concern that in traditional scholarly publishing, most of the work (authoring, reviewing, editing) is done freely by the community and that the publishers make excessive profits from the actual publishing process."

These are all valid reasons favoring the adoption of Open Access and institutional repositories. For these initiatives to be effective, however, Musakali and Rotich (n.d. p.3), alert their readers that Open Access contributions must satisfy two conditions:

1. "The author(s) and copyright holder(s) grant(s) to all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly, and
2. A complete version of the work and all supplemental materials, including a copy of the permission as state above, in an appropriate standard electronic format is deposited in at least one online repository using suitable technical standards that is supported and maintained by an academic institution, scholarly society, government agency, or other well established organization that seeks to enable open access, unrestricted distribution, inter operability, and long-term archiving."

Not every institutional repository is the same. There are basically four different types depending on its nature and institutional source. Jeffery (s.d, p. 1) and Armbruster (s.d., p.1) categorize them as:

A) THEMATIC –Authors deposit in a central repository where relevant material on a subject area is collected. (e.g. ArXiv) (Jeffery, s.d.; Armbruster, s.d.).

B) INSTITUTIONAL – "Authors deposit in a repository maintained by their institution thus collecting together in one place the research output of the institution enhancing the visibility and impact of the

institution". Open source systems for "green" repositories: ePrints, DSpace, Fedora and ePubs (Jeffery, s.d.; Armbruster, s.d.).

C) RESEARCH – "Normally sponsored by research funding or performing organizations to capture results. Contains high-quality output because its content is peer-reviewed multiple times (e.g. grant application, journal submission, research evaluation, etc) and the production of the results is well funded" (Armbruster, s.d.).

D) NATIONAL – "Are designed to capture scholarly output more generally and not just with a view to preserving a record of scholarship but also to support teaching and learning in higher education" (Armbruster, s.d.).

In regards to the public, that is, individuals, groups, or institutions which benefit from OA initiatives and institutional repositories, independent of its category, Swan (s.d, p. 1) and also Suber (s.d., p. 8) present a list of beneficiaries.

- Researchers/Authors – Brings increased visibility, usage and impact for their work worldwide (Swan, s.d.).
- Research Institutions – Enjoy the same benefits as researchers in aggregated form. Besides, they acquire an information management system that enables them to assess and monitor their research programs and a marketing tool that enables them to provide a shop window for their research efforts (Swan, s.d.).
- Nations – Increases the impact of the research in which they invest public money resulting in a better return on investment (Swan, s.d.).
- Society – Research is more efficient and more effective, delivering better and faster outcomes for everyone (Swan, s.d; and Doyle; Gass, & Kennison, s.d.).
- External Research Funders – Same benefits as the research institutions who needs to be able to access and keep track of outputs from their funding and measure and assess how effectively their money has been spent (Swan, s.d.).
- Readers – Increases reader reach and retrieval power. Gives barrier-free access to the software they use in their research (Suber, s.d.).
- Teachers and students – OA puts rich and poor on an equal footing for these key resources and eliminates the need for payments or permissions to reproduce and distribute content (Suber, s.d.). Eliminates the fear of misusing the material, eliminating also delays, doubts, or fees. No more fair-use judgment calls, fear of liability, and painful decisions to err on the side of caution and non-use.
- Libraries – OA solves the pricing crisis for scholarly journals. It also solves the permission crisis (Suber, s.d.). They serve a fiduciary function: the parent institution supplies them funds to provide for the most useful provision of library materials and service to their constituents.
- Universities – Increases the visibility of their faculty and research, reduces their expenses for journals, and advances their mission to share knowledge (Suber, s.d.).
- Journals and publishers – Makes their articles more visible, discoverable, retrievable, and useful. It can use this visibility to attract contributions (Suber, s.d.).
- Funding Agencies – Increases the return on their investment in research, making the results of the funded research more widely available. Provides fundamental fairness to taxpayers or public access to the results of publicly-funded research (Suber, s.d.).

- Governments – As funders of research, governments benefit in all the ways that funding agencies do. Promotes democracy by sharing non-classified government information as widely as possible (Suber, s.d.).
- Citizens – OA gives them access to peer-reviewed research, most of which is unavailable in public libraries, and gives them access to the research for which they have already paid through their taxes (Suber, s.d.).

With such a diversified group of people and institutions which benefit from OA initiatives, it is no surprise that the literature abounds with a large corpus of advantages and benefits resulting from OA and institutional repositories.

Eysneback (2006); Lai (2009); and Swan and Brown (2004) demonstrate that there is a citation advantage over non-open access articles. Eysneback (2006) indicates that policy makers and end-users in the health field are more likely to read it then order it and also that its adoption may increase the chance of cross-discipline fertilization. Swan (s.d., a) suggests that research published in OA repositories increases the university's impact on the scholarly community and points that Open Access collection is the institution's shop window for its research activities and a strategic marketing tool.

Swan (s.d., a); Swan (s.d., b) and Suber (s.d.) defend that OA increases the institution's visibility and its impact and presence on the Web. Swan (s.d.,a) and Swan (s.d., b) state that OA opens a complete record of the research output of the institution to the world in easily accessible form and also provides the means for the institution to manage and measure its research and teaching programs more effectively.

For Lai (2009), Jeffery (s.d.) and also Swan and Brown (2004), institutional repositories accelerates the dissemination of research information and provide maximum access to scholarly communication. Jeffery (s.d.) suggests that it is possible to crosslink the publication to any research datasets and software used in producing the paper and that OAI-PMH links OA repositories so that all repositories obeying the protocol can be harvested and their contents are available freely.

Swan (s.d.,b) demonstrates that OA showcases the university to interested constituencies – prospective staff, prospective students and other stakeholders; collects and curates digital outputs; provides a workspace for work-in-progress, and for collaborative or large-scale projects; enables and encourages interdisciplinary approaches to research; and facilitates the development and sharing of digital teaching materials and aids. It also supports student endeavors, providing access to theses and dissertations and a location for the development of e-portfolios.

In another article, Swan (s.d.,b) states that OA allows for better management and assessment of research and provides the material on which the new semantic web tools for data-mining and text-mining can work, generating new knowledge from existing findings.

For Suber (s.d.), one of the greatest advantages of OA and institutional repositories is because it is inexpensive. Swan (s.d.,a) and Swan and Brown (2004) reminds its readers that OA moves research along faster. For Schroter; Tite and Smith (2006) it is easier to search and quicker to disseminate to a wider audience. Schroter; Tite and Smith (2006) and Corrado (s.d.) asserts that OA reduces costs in terms of time savings, photocopying, interlibrary loans and subscriptions and also provides more equitable access.

Swan and Brown (2004) assert that the readership is larger than for subscription-based journals. And finally, Corrado (s.d.) defends that OA and institutional repositories are better prospects for long-term preservation of scholarly works.



Although the literature is robust in pointing out the advantages of OA and institutional repositories, several authors also point many challenges these initiatives present. Jeffery (s.d) presents several barriers and shortcomings for the successful implementation of OA and institutional depositories. They are: loss of publisher income where publishers and learned societies fear the green OA threatens their business viability; copyright requirements where copyright agreements between authors and publishers may inhibit the "green" route; filtering and censorship barriers where many institutions want to limit what the user can see; language barriers, where most online literature is in English and some countries have different official languages; handicap access, where most web sites are not yet as accessible to handicapped users as they should be.

Difficulties with connectivity are another barrier mentioned in the literature. Swan and Brown (2004) affirm that the digital divide affects billions of people, including millions of serious scholars around the world. For Musakali and Rotich (s.d.) the problem is the inequalities in access to the internet, extent of use, knowledge of search strategies, quality of technical connections and social support, ability to evaluate the quality of information, and diversity of uses. The lack of academic or political willpower to encourage growth in Information Communication Technologies is also mentioned as a barrier by Musakali and Rotich (s.d.).

Schroter; Tite and Smith (2005) emphasize the economic constraints which countries and organizations face. Many countries or institutions lack the technological infrastructure to handle OA materials. They also state that economic constraints can increase the financial burden on authors and institutions to publish their material. Many lack funds to pay for the publication of their material.

Swan and Brown (2004) also repute that OA has low prestige, low impact, diminishes chances of winning grants, adversely affect chances of appointment or promotion, adversely affect career, adversely affect the viability of scholarly societies and that there is a lack of author's confidence on stability and sustainability of OA initiatives.

These are more than enough challenges to create resistance on the part of institutions and scholars, creating resistance to change. There are many librarians, researchers, readers and authors who have resisted the change to the e-world.

## RESULTS

A four question survey was sent to ninety two directors of Seventh-day Adventist university libraries. These libraries are located in sixty six different countries around the world. Two of the questions intended to identify the director's opinion about the benefits of Open Access and institutional repositories and the challenges related to its implementation. The objective of the other two questions was to find out how many libraries have implemented an institutional repository and how many were planning to do so.

Three emails were sent to the 92 librarians (or libraries). Twenty-eight addresses failed to reach their destination as undelivered. Thirteen librarians from ten countries answered and returned the questionnaire. This result is displayed in Table 1 – Participating Countries.

**Table 1 – PARTICIPATING COUNTRIES**

<b>COUNTRIES</b>	<b>F</b>
USA	4
Australia	1
Congo	1
Costa Rica	1
Italy	1
Kenya	1
Philippines	1
Serbia	1

Spain	1
Taiwan	1
TOTAL	13

As Table 1 above demonstrates, three countries from Europe participated in this survey, two from Asia, two from the American continent, two from Africa, and one from Oceania.

Only one library has implemented an institutional repository, and another was implementing at this time. Seven libraries plan to implement in the near future and five others have no plans or intentions of doing so at the present moment. Two of them intend to implement this type of initiative within the next two years.

Question one stated: "In your opinion, please mark all of the following benefits your library will experience through Open Access and academic/institutional repositories." The respondents presented twelve benefits and advantages of OA and institutional repositories. Table 2 presents the results.

**TABLE 2 – BENEFITS AND ADVANTAGES OF OA AND INSTITUTIONAL REPOSITORIES**

<b>ADVANTAGES AND BENEFITS</b>	<b>F</b>
Expands the circulation of scientific work.	11
Creates global visibility for an institution's scholarly research.	10
Accelerates the dissemination of research information.	10
Maximizes research.	09
Provides maximum access to scholarly communication.	09
Provides access to archival literature.	09
Allows digital copies to be posted in subject-specific institutional repositories.	08
Eliminates financial or permission barriers.	07
Enhances the speed with which articles are cited.	06
Provides for unlimited space for tables.	05
Allows for figures and video footage.	04
Allows for collaboration with researchers around the world.	01

The results tabulated in Table 1 indicate that the majority of the respondents presented enhanced access and research visibility as the main advantages of OA and institutional repositories, followed by the elimination of financial barriers and citation speed.

The literature reviewed is also prolific in pointing out the ease of access and the variety of access points that OA provides, mainly, because it is accessed at no cost for the user. Since it is free and can be self-archived at the point of its production in a very speedy matter, its visibility is augmented. The literature reviewed above also emphasizes this point.

Question two stated: "In your opinion, what are the obstacles, challenges and possible disadvantages faced by your library when Open Access and academic repositories initiatives are considered for implementation?" The respondents indicated thirteen obstacles and challenges they feel affect the implementation of OA and institutional repositories. Table 3 presents these results.

**TABLE 3 - OBSTACLES AND CHALLENGES OF OA AND INSTITUTIONAL REPOSITORY IMPLEMENTATION**

<b>OBSTACLES AND CHALLENGES</b>	<b>F</b>
Technical infrastructure	09

Lack of budget or funds	08
Lack of specialized personnel	05
Preservation of content and sustainability of services	05
Implementation and maintenance of quality control system	05
Copyright issues	04
Enticing scholars to deposit	04
Long term preservation and access	04
Institutional culture and/or support not adequate	03
Content not always recognized as authentic	03
Challenges to make content visible	02
Lack of political or academic will power	02
Identification and deposit of material that is of relevance and interest in scholarly communication	01

As can be observed from Table 3 above, the main obstacles the participating libraries face are related to technical infra-structure, budget constraints, lack of specialized personnel and preservation and sustainability concerns. One library director from a library situated in the African continent wrote extensively about the problems the students face due to the instability of the Internet connections and lack of technological support, hindering hundreds of students and avoiding the efficient use of OA directories.

Most of the libraries also reported the lack of funds to support the implementation and maintenance of institutional repositories, thus discouraging researchers and scholars to archive their academic production as an OA publication. The lack of budgetary provisions also affects negatively the potential for personnel training. The implementation of such an endeavor requires specialized knowledge and skills, and in many countries there is real shortage of personnel with such competencies, thus the need for specialized training.

## CONCLUSION

Much attention have been given to and it impact on scholarly communication. It is of great significance to the research community, to research funders, to scholarly publishers and, ultimately, to the public. The way research is disseminated and used is and will also change drastically. New modes of use and access will emerge with the emergence and development of OA and institutional repositories. The publishing scenario will also change fast (Swan & Brown, 2004).

The fact that libraries have to pay for access to scholarly materials is acceptable, but prices are high and are increasing at an insupportable rate; “the establishment of competitive open-access journals will force commercial publishers to moderate their profit-seeking behavior” (SPARC, s.d., p. 2).

Anderson (2004, p. 10) is of the opinion that:

The problem is not that journals cost money, but that the institutions that provide the content have to pay excessively for access to the very content that they created. Then there is the question of whether access to information that has been created with the support of public funds should be restricted at all.

Institutional support is crucial for OA sustainability. According to Anderson (2007, p.84),

This support might be in the form of sponsorships that could give a discount on author costs or print subscriptions for an institution. Institutional support of journal publishing has always been important and generally has taken the form of subscription funds in the library budget. Universities and companies are

recognizing the benefits to them of open access and are beginning to support OA journals. It is critical, too, for the major granting agencies to embrace OA.

The implications for libraries and their organization are significant. It is most likely that libraries will have to reconsider strategies in order to remain relevant to its community of users. This is mainly because patrons can access the library and its contents without the library's participation. According to Schmidt; Sennyey, and Carstens (2005, p. 415) "With the onset of electronic publications, and now OA publications, the scholarly communication based on printed sources paradigm is bound to change." This trend will most probably require changes in the scholarly communication process, thus challenging librarians to change also. The authors mentioned above still note that "It is worth noting that the emergence of the OA initiative shatters the myth that there are no alternatives to the traditional publishing model. What libraries do with the opportunities that the OA movement offers will depend on librarian's resourcefulness and creativity."

The findings of this study demonstrated that although librarians are aware of the potential and benefits brought about by this new mode of research dissemination and accessibility, OA and institutional repositories are far from being totally implemented in SDA university libraries around the world. These libraries face, what it seems in the present moment, insurmountable challenges and difficulties in specific parts of the world. Several librarians reported difficulties with technological infra-structure and resources as well as with the lack of funds necessary to train highly specialized personnel.

Another important factor which prevents to adoption of such initiatives is the lack of an adequate organizational culture focused in enhancing the scholarly communication process. However, we can expect this to change in the near future since several participants indicated that they are planning to implement OA and institutional repositories in their institution in the near future.

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