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MANAGEMENT OF UNIVERSITY RESEARCH OUTPUT IN DIGITAL ERA: A CASE OF STRATHMORE UNIVERSITY LIBRARY.

ABSTRACT

Today scholarly information is being produced in digital format unlike few years ago when scholars used to present their work in a hard format.Kanyengo (2009) notes that creators of knowledge and publishers of knowledge and everyone who is involved in the production of knowledge prefer the electronic format.A lot of digital content is now being produced in the scholarly world and this has brought serious and pressing issues in the access, preservation an dissemination of the content. This paper will highlight Strathmore university's experience in using institutional repository to manage their research output, the benefits and the challenges they faced.

INTRODUCTION

The advent of information communication and technology (ICT) and electronic publishing has changed the way institutions produce and distribute their Research Output (RO).ROs are created and shared in a digital format.Scholars have been using the peer reviewed journals to showcase their work.There are many channels now where scholarly communication can be permanently archived and disseminated freely to a wider audience; where the publication will get more research impact, more readership and increased visibility.Institutional repositories are now the new channels that academicians and research institutions are using in the management and dissemination of their intellectual output without having to go through the normal constraints of high cost of subcription to various commercial databases that may offer them the service. Scholars are disastified with the current model of scholarly communication and Prosser (2003) supported this by saying that, even the wealthiest institutions cannot afford to purchase all the information which is required by the researchers and as such open access institutional repositories are the way to go.

OPEN ACCESS

Open access (OA) is a term that has been widely used and it has gained a lot of support world wide. In the scholarly world OA refers to accessing online literature freely at no charges or restrictions (copyright and licencing). The Budapest Open Access Initiative (BOAI) defined the concept as literature which is freely available in the public internet which can be read, copied, downloaded, distributed, or any other lawful purpose without financial or technical barriers (BOAI, 2002).

Access to information has been categorised amongst the basic needs of a person.Due to economic hardships, access to this essential commodity has been a dream to many.Access to online literature is very costly and this has made institutions of higher learning to come together to form consortiums so that they can negotiate the costs of the online resources as a unit.Three initiatives (Bethesda (2003) , Budapest Open Access Initiative (2001), Berlin declaration (2003)) have since come up to support or to initiate the free access to online literature to all without restrictions.

Open access initiative supports dissemination of knowledge freely or at an affordable cost to a wider audience. The initiative is pushing for scholarly output to be freely available in the public internet so that those institutions or scholars who cannot afford the subscription or licence fees can have access to knowledge from rich or developed countries. For a publication to be regarded as open access, The Berlin declaration as cited by (Christian, 2008) stated that the author(s) of the publications must grant all users free, irrecoble, worldwide, right access and licences to copy, use, distribute, transmit and display the work publicly and a complete version of the work should be deposited (published) in one online instituional repositories.

Knowledge in open access platform attracts many benefits to the author and to the institution.The authors work will be cited more and this will add some impact on his field or research and for the preprint, the work will be seen by many people who will criticize and also get alot of feedback on how to improve the quality of the final work (Christian, 2008). Scholarly literature can be accessed freely through an open access journal or institutional repositories.

HOW UNIVERSITIES MANAGE RESEARCH IN DIGITAL ERA

Many universities are now rated on the basis of research that has been done and its findings should be shared widely. Universities have set up research and developmnet offices which

will oversee the research processes in the instituion.According to Sekhwela (2011) research office main responsibility will be to formulate and implement reseach policies that will provide for research capacity, quality and management by providing funds and training.

Universities have challenges in managing their RO. Research are done but the findings are kept with the owners because of the economic constraints.Many scholars have been communicating and disseminating their work through commercial publishers. Due to high costs of journal subscriptions, universities only subscribe to very few titles that they can afford.Academic libraries in Kenya have formed a consortium, Kenya library Information Services Consortium (KLISC) where they come together and share the cost of subscription. A lot of useful content is being left out because the consortium cannot affort to subscribe to everything.

Content that has not been published in the commercial sites cannot be accounted for by the creators.The work is normally stored in the computer drives which are prone to viruses, and institutional websites which are later removed.In that case the ROs are scattered everywhere and one cannot know what has been previously researched on.With advances in technology, there are many new ways which have come up that universities can use to manage their RO. Also the open access initiative has brought a lot of changes in the scholarly world.Early 2000 the development of open access institutional repositories emerged. Crow (2002) has defined institutional repository as the "digital collections that captures and preserves the intellectual output of university communities". Institutional repositories will have all the work of an institution in a central place.University libraries are now implementing institutional repositories.

Lynch (2003) noted that "The development of institutional repositories emerged as a new strategy that allows universities to apply serious, systematic leverage to accelerate changes taking place in scholarship and scholarly communication".

STRATHMORE UNIVERSITY EXPERIENCE IN DEVELOPING INSTITUTIONAL REPOSITORY

One of the top ranked private university in Kenya, Strathmore University (SU) was established in 2002 by Universities Act (CAP 210B) .It offers both undergraduate and postgraduate programmes.It has a population of 5000 students.For several years now webometrics has listed SU among the top 100 universities in Africa. It became the first amongst all the private universities in Kenya, 2nd amongst all the universities in Kenya and 37th and 1382 position in Africa and the whole world respectively in the January 2013

ranking ("Africa | Ranking Web of Repositories," 2013).This ranking was based on research outputs, visibility of the university nationally and internationally, volume of scholarly materials that was created and published, size and the impact of the web presence.

Strathmore University library was the first University in Kenya to implement an institutional repository called SU+, using an open source software called Dspace. SU+ has been listed in the "open- doar" service. Statistics from the open doar shows that there are 64 registered repositories in Africa and only 5 in Kenya **("OpenDOAR - Charts - Africa," 2013.)** viz:

1. KARI e-repository,
2. Kenyatta University
3. ILRI,
4. Lake Victoria Basin Commission Repository
5. Strathmore University
6. University of Nairobi

("OpenDOAR - Summaries - Kenya," n.d.).

Most of these institutional repositories have been developed using open source software.

MANAGEMENT OF RESEARCH OUTPUT AT STRATHMORE UNIVERSITY:

Development of an open access instituional repository at SU library was initially faced with many challenges.There was a lot of resistance from the faculty level and as (Burris, 2009) noted that success of an IR will largely depend on the participation of the faculty.An IR without content is like a library with empty shelves.The resistance was as aresult of SU scholars being concerned with the copyright issues of their work, metadata creation, contracts with their publishers for the articles that have already been published and also their concern was with those deposits that were in the disciplinary repositories, they felt that depositing the same in an institutional repository is redundant and they prefered their work being in the discipline repositories.

After the implementation of the software (Dspace) in 2007, the next step for SU librarians was to come up with policies that cover the content and the copyright issues.The policies were approved by the university's top management and this gave librarians 'a go a head' to implement the IR.The library came up with the strategies of getting the content from the faculty members.Liaison librarians were assigned the task of going to meet with the faculty on their own capacity and speak their language and even during departmental meetings they provided information about the benefits of the IR and how its was to be used.IR has so many

benefits to the scholars and according to Burris (2009) there are standard arguments that can be used to persuade the creators of the work which include: wider dissemination of the research, permanent archiving of the scholarly output, and being indexed in search engines such as google scholar and all these from the literature have not been of any success.

Persuasion didnt bear much fruit but the library decided to work with they few who were willing to deposit their work or give their work to the library staff to deposit for them.To provide more support to the faculty after submitting their work, the librarian will have to complete the metadata and assign the deposits to the correct collection.

Three years later, the content in the IR was still very low and the library had to re-think of other strategies to that effect.The new strategy still with the use of liaison librarian and with the help of research office was to ask the faculty members to state the preference of what they would want from an IR and from their response, the following were the features that they would want to see from the IR.

- Where they can organize their work (Files and folders)
- Researcher page
- Where they can safely store the work in progress
- A system where they monitor their work

The current Dspace software does not support the above features and the library had to re-think of either upgrading Dspace or adopting another open source software that would provide these new features.2011 the library opted for another software called irplus.Irplus software is an open source software, it was developed by Rochester University.The software has all the features that our faculty members had recomended.The new software has attracted so many faculty members.Since its adoption in 2012 the membership has doubled (263) compared to the previous membership.Faculty members are now calling the library requesting for their accounts to be set up and trainings on how to submit their work.

Since adoption of the new system, Strathmore library has seen a tremendious growth from 147 items to the 490 publications and the downloads are also going up at high rate as of 27th July, 2013 the downloads are 35110.They are also in the process of migrating the content from dspace to the new platfom.

FACULTY MOTIVATIONS

Faculty contributions has been considered as one of the successful factors for an IR and from the literature there is low rate of faculty submissions (Kim, 2007).From Strathmore experience the following are what motivated the faculty to contribute their work to the IR .

Work accessible through google scholar

Creators of the work are very impressed when they see their work being accessed through google scholar.It harvests the metadata of the publications that has been submited to the IR's.After submitting the work the members are curious to see their work in google scholar immediately but scholar takes like a week or two so as to index or capture the metadata.

Dissemination and Permanent archiving

 Faculties have been disseminating their scholarly output through publication in a print or online journals and access to such publications was only through a subscription. Advent of the internet has opened the way for the academic community to share their work in the open access platforms such as the open access journal or an IR.According to Hawkins (as cited by Casey, 2012), an IR was used to preserve the intellectual output of an instituion, disseminate, stewardship and long term preservation.

Downloads of their work

The current system that strathmore has adopted monitors the number of downloads of publication.Faculty members get alot of motivation since every day they can tell/know how many times work has been viewed by other people and this encourages them to write more and deposit in the library.Through that they become popular and even the publishers will be conducting them requesting if they can publish the work in the prestigious journals.

Depositing of work in progress

Subjectplus software allows one to deposit their work in progress.Through this the work can been critisized and the author will get comments and how to improve the final write up.

Organizing their work in folders

Faculty members can manage their work through the folders.The same work can be accessed in a different locations or different machines by just login and accessing it through the

uniform resource locator (URL).You dont have to carry your work in other memories.Also from the researcher's page one can organize his work for instance create a folder for conference publications, published works and other works.

Financial rewards

Research office is providing financial rewards for any article that will be published in the prestigious journal and this has motivated the faculty members to write more papers.They are also supported financially when they are going to present papers even outside the country.

Promotions

Academic staff are now being promoted depending on the number of papers that they have published.In the academic world, research is mandatory if one has to climb the ladder.University has reduced the work load of their Faculty staff so that they can get enought time for their research.

CHALLENGES OF MANAGING INSTITUTIONAL REPOSITORY

From Strathmore experience, there are certain challenges which they face with the management of their IR.Below are the challenges:

Digitization

Scanning of print publications such as theses and dissertations is very expensive in terms of time and money.The scanned documents have to be converted from image to a format that can be harvested by the search engines.During that process of conversion the software used will distort the document which means editing has to be done from page to page.The whole exercise is tideous but at the end of it all you will be assured of submitting quality full-text to the IR.

Cross checking the publishers policies using SHERPA/RoMEO

Before you submit any publication to the repository especially the publishers copy or those that has been accepted for publication, you have to check the policy of the publishers if they allow the pre-print, post print or the publishers version for submissions.SHERPA/RoMEO has listed the publishers copyright and self-archiving policies.Not all publishers policies have been listed.You have to go an extra mile of conducting the publishers before you submit the work.

POSSIBLE SOLUTIONS TO THE ABOVE PROBLEMS

- Library with the help of research office have to come up with policies that requires every student of SU before they are cleared with the library, they should submit their soft copy of their theses and disertations.

- Librarians to convince top management on the need for having IRs and development and approval of relevant OA policies. Unless the management buys into the idea of OA, the library can do very little, therefore there is need to engage them and show the benefits to be derived in adopting OA publishing of ROs of the institution.

- Librarians to meet with faculty members and share/showcase real benefits of publishing in OA. From the few deposits in IRs, show the faculty on hw they can benefit, for instance increase of downloads, increase in citations.

- Library to be on the forefront to capture all ROs in the university, for instance presentations, conference papers during conferences and workshops. There is alot of information exchange in universities. Libraries should take a proactive position to know all the conferences, symposia, public lectures and workshops happening in the institution and make an effort of collecting the information presented for archiving.

- Library should use student leaders/student ambassadors to market the repository to their faculties.Strathmore university library has been using students to promote the use of journals thus the same students can be used to approach their lectures and share with them the usefulness of having their work in the repository.

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CONCLUSION

Success of an institutional repository can only be achieved through the support of the the top management and at the faculty level.An advice to the institutions who are in the process or have developed an institutional repository, they should take into consideration the needs of the faculty and also the motivation factors should also be considered. Librarian management should consider other mechanisms of marketing the repository to the faculty level.

Abbreviations:

SHERPA/RoMEO : **Publisher copyright policies & self-archiving**
IR : Institutional repository

RO: Research Out puts

OA:Open Access

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