Institutional Repositories for Open Access; The Ghanaian Experience

Abednego Corletey
KNUST Library, Ghana
cyber4ac@yahoo.com; acorletey.lib@knust.edu.gh

ABSTRACT

In 2008, the Kwame Nkrumah University of Science and Technology (KNUST) implemented the first Institutional Repository in Ghana. Six month later and with 560 postgraduate theses entered, KNUST appeared 52nd on the webometrics ranking for 100 best universities in Africa. This success resulted in the Consortium of Academic and Research Libraries in Ghana (CARLIGH) and International Network for the Availability of Scientific Publication (INASP) helping four academic institutions to implement repositories. The repositories' managers promised using it to showcase research from their institutions, starting with graduate theses/dissertations.

Aims: This paper looks at how these repositories have met the challenges of technical support, content provision, qualified personnel, institutional backing, achievements and lessons for other institution thinking IRs

Method: In depth interviews, observations, checks from the websites, reports and secondary documents obtained from the Libraries were used to collect data for the paper.

Result: All four institutions had problems with their repositories. While two were completely out, two were uploading some content but their platform was only visible within the library. The absence of policy legalizing the operation of the repositories made it difficult for the managers to request for equipment, content and qualified staff to run the repositories. Useful recommendations are made for CARLIGH, INASP and other bodies that seek to support such enterprise with resources.

Keywords

Institutional repositories, Electronic theses, Ghana, Open access, Knowledge sharing.

INTRODUCTION

Knowledge has always been created based on the experience and information available. The researcher always researches into the unknown but initiates the process by considering the available facts and /or knowledge. Ngulube (2007) asserts that "scholars use research findings to generate further research, models and archetypes." Thus findings accruing from research should be made available for others to build upon and for the society to gain from. Institutional Repository has been hailed by many authors as a step in the right direction to aid the dissemination of such local research findings to the local community where the research was carried out, and for whom the findings will be more relevant. Prosser (2003) posits that "IRs provide a means for institutions to create archives and make available their wealth of knowledge." Shearer (2003) adds that "IRs provide access to scholarly material without the economic barriers that currently exist in scholarly publishing." The implication is that while IRs will provide open access to knowledge, it will also bypass the subscription problems that many researchers face on the African continent. This restriction has led in part to the dearth of research findings emanating from the African continent and available for the African scientist. Gutam et al. (2010) state that "research output published in peer-reviewed journals is not able to reach other peer groups working in the same field in India and the world." This has led to the duplication of effort and several attempts at re-inventing the wheel instead of making it run more smoothly by improving upon the already existing knowledge.

It was in this light of making such research findings available to the research community of Kwame Nkrumah University of Science and Technology in particular and the country in general that the Library set out to establish an institutional repository. The effort resulted in the creation of a platform for the wider dissemination of the research findings coming out of the University. But many more benefits were added than was bargained for! The impact was felt even outside the walls of the

university as it greatly improved the standing of the university among the international web rankings. This egged on some other academic institutions within the country to set up their own repositories. To move them from being isolated islands of knowledge to a globally connected and unified source of information, these institutions sought help from the Consortium of Academic and Research Libraries in Ghana, (CARLIGH). CARLIGH had been in the lead negotiating access to electronic resources for its members and getting support for training programs to enhance the professionalism of the staff of member institutions. CARLIGH with support from the International Network for Availability of Scientific Publication, (INASP) enlisted the help of a Systems Analyst to set up institutional repositories and provide training for the institutions. The installation and training program went smoothly in spite of some hitches that came up. And all the platforms were running at the time of handover.

What is the situation presently? What are the challenges? What are the achievements? Are there any lessons to be learnt? The paper reports the challenges from the set up stages to the present and provides useful lessons for others in the process of replicating the efforts.

THE INSTITUTIONS

The four institutions that benefitted from the initiative are listed below. The first two are all Public funded institutions, the third is public and self-sustaining financially, the fourth is a private institution owned by the Methodist Church, Ghana

1. University of Cape Coast, Ghana (UCC)
2. University of Education, Winneba, Ghana (UEW)
3. Ghana Institute of Management and Public Administration, (GIMPA)
4. Methodist University College, Ghana, (MUCG)

Of these institutions only GIMPA and MUCG could acquire brand new servers to be used for setting up their repositories. These two had no back-up servers to fall on, in the event of their new servers malfunctioning. All the four institutions had problems with bandwidth. All the libraries lacked public IP addresses to allow them to be live on the Internet with their research content. There was no existing institutional policy to give legal backing and budgetary support, considering the fact that the IR operation will involve some running cost. GIMPA and UEW Libraries had a staff each with some level of IT expertise to act as technical support staff. All the libraries had some collection of theses/dissertations resulting from the research carried out by students in their institutions. But these were hard copies.

UNIVERSITY OF CAPE COAST (UCC)

The University of Cape Coast, one of the rare sea front universities in the world was established in October, 1962 as a University College. The College attained the status of a full University on October 1, 1971, with the authority to confer degrees, diplomas and certificates by an Act of Parliament - The University of Cape Coast Act, 1971 [Act 390] and subsequently the University of Cape Coast Law, 1992 [PNDC Law 278]. Its original mandate was to train graduate professional teachers for Ghana's second cycle institutions and the Ministry of Education, in order to meet the manpower needs of the country's accelerated educational programme at the time. Today, there is diversification of programmes. From an initial student enrolment of 155 in 1963, the University of Cape Coast now has a total student population of over 35,922. The breakdown is as follows: 14,815 Regular Undergraduate Students, 2,146 Sandwich Students and 18,018 Distant Learning Students. The University of Cape Coast admitted a total of 4,251 students into its various programmes for the 2009/2010 Academic Year. These were selected from a total of 11,730 candidates who applied for admission to the University.

The server for the UCC crashed barely a week after setting up the platform. This was an old server that was not being used. Coupled with this was a fire outbreak at the Network Operation Centre (NOC) of UCC. The effect was that the repository became almost "still born". The public procurement act of the country leaves the minimum time to acquire a good server at three calendar months because of the price tag. The challenge was when the University was to re-tool the UCC NOC and also get a new server for the library.

Fortunately the presence of a young and talented National Service Personnel – whom the Library rightfully retained through employment - was to say the least very instrumental in turning the tables around. Although having his first degree in the arts he was very talented in IT. This person "revived" the old server and used the set up instruction left behind installed a more

current version of the platform than was previously installed. Uploading of the theses content began again but access is restricted to within the library. Although the University has provided a new server and restored the services of the NOC, the repository still lacks a public IP address. There are about 436 full text theses/dissertations on the platform, and more are being added daily. The issue of copyright has not been resolved and there is no policy in place to govern the operations of the repository.

UNIVERSITY OF EDUCATION, WINNEBA (UEW)

The UEW was originally established by PNDC Law 322 (1992) as the University College of Education of Winneba (UCEW) through the amalgamation of seven diploma awarding institutions and later became the University of Education, Winneba by Act 2004, Act 672 on May 14, 2004. The University was charged with the responsibility of producing professional educators who will spearhead a new national vision of education aimed at redirecting Ghana's efforts along the path of rapid economic and social development. The mission is to train competent professional teachers for all levels of education as well as conduct research, disseminate knowledge and contribute to educational policy and development

The situation here has not been different from that of UCC. An old server that was used crashed and has not been revived nor replaced. The IT personnel at the IR section have been rescheduled to another office. The platform is not operational and institutional repository service is clearly suspended. The library still has no public IP address. Interestingly the UEW Library has pushed through with their policy and is now at the final stage seeking approval from the Academic Board for implementation. The repository manager has also been working on the side to advocate the submission of electronic copies of theses alongside the hard copies. The response from the graduate students has been welcoming. The library now has in its possession some theses/dissertations which will be used as the foundation when the platform goes live again

It is not known when the service will be revived, but it is hoped that very soon the academic board will give its assent to the policy and make it binding on the institution. When this is done the repository will be in a position to request for a new server, the services of qualified IT personnel and make it mandatory for the students to submit soft copies of their theses to the library for uploading to the repository. This line of action in getting the policy in force before the platform should have been the first line of action.

GHANA INSTITUTE OF MANAGEMENT AND PUBLIC ADMINISTRATION (GIMPA)

 Named the Institute of Public Administration, GIMPA was established in 1961 as a joint Ghana Government/United Nations (UN) special fund project to develop the public administrative system, and produce civil servants with administrative and professional competence. At the end of the joint project the UN handed the Institute to the Government of Ghana and was then re-designated Ghana Institute of Management and Public Administration in 1969 to reflect its expanded functions. Over 49 years, five successive mandates have been enacted to guide GIMPA's activities with the last being the GIMPA Act, 2004 (Act 676). Today, as an independent public tertiary institution GIMPA offers training in Leadership, Management and Administration, Policy Analysis, Consultancy and Research, Distance Learning, Gender and Development programmes. GIMPA has contributed to the national development efforts by building the much-needed capacity development.

The repository at GIMPA has also been very successful. The copyright of the theses/dissertation from the institution by default belongs to the institution. Thus students have no rights over theses/dissertations they submit as part of the requirement for the award of their degrees. This arrangement has been beneficial to the repository since it has taken out the copyright problem and aided the uploading of theses/dissertations unto the repository. GIMPA does not have a public IP and so access is restricted to the confines of the library. There is a talented young man who is IT inclined and who has been providing wonderful support. The repository has over 300 theses/dissertations currently on display mostly from the undergraduate and sandwich programs and a few postgraduate ones.

The other challenge is that the Repository Server is located in a library room where all appliances are shut down at the close of work, thus restricting access to the platform to between the working hours, that is if it even operates. There is no policy in place to guide the operation of the repository.

METHODIST UNIVERSITY COLLEGE, GHANA (MUCG)

The Methodist University College Ghana (MUCG) was granted accreditation by the National Accreditation Board in August,

2000. Its application for affiliation to the University of Ghana was approved in October, 2002. MUCG started academic work in October, 2000. The first batch of students reported for lectures in November, 2000. The College is in its eight academic year. Student enrollment has grown from 213 students in 2000, to a total number of 3743 students at the end of the 2008/2009 academic year. That was made up of 1,872 males and 1,871 females a 50:50 male-female ratio showing good gender balance. Although some abstracts of postgraduate theses have been loaded onto the repository, it is not running smoothly and the server was actually shut down at the time of the research interview.

One big challenge comes from the fact that the library is located outside the main campus and does not have a direct network connection to the NOC at the main campus. Although the library has access to the internet it does not have a public IP address to allow it to host the repository. This arrangement does not allow the library to display what is available on the platform to the entire community, and the repository is only available to users within the library premises. The Library does not also receive soft copies of the theses/dissertation and since it does not have a scanner to convert the theses to electronic form it is impossible to have the theses on the repository at present. A policy to govern the operations is still lacking though there are some efforts at putting one in place that has not been achieved. Advocacy has not made much impact and more needs to be done to improve the consciousness of the faculty and students as well as the administration.

Observations

The following challenges seem to be recurring in all the libraries

- All the libraries had a problem getting public IP addresses so the platform could be seen on the internet. This meant that they could not be seen on the Internet.
- All lacked mail server services which made it impossible to allow others to register apart from the administrators who were added at the time of setting up the platforms. This was because their Internet Service Providers, (ISPs) were either unable to provide them with mail services or unwilling to do so for free.
- Locating the repository platform in the libraries did not help much in the provision of a 24/7 service to the community. This was because the servers were shut down at the close of the day's work along with all other electronic/electrical equipment as a rule. This defeats the purpose of providing greater access and impact through the platform.
- Involving the staff of NOC of the institutions help gained their confidence and support for the platform; and they had since provided support as best possible to the platforms.

Another observation was that the Libraries that had people other than core IT graduates working as IT support staff fared better although other problems had prevented their platform from being visible.

RECOMMENDATIONS

Experiences from the four institutions show that the lack of a clearly defined policy governing the operations of the repository is greatly affecting the operations of the platforms, and making it difficult to get full and committed support from their authorities. From these experiences, institutions that seek to set up repositories are strongly encouraged to begin their preparations by drafting a comprehensive policy that will cover the operations of the repository. As soon as the draft policy is ready, it should be submitted to the authorities for approval. Such a policy should be pushed through for approval and acceptance from the administration to get them fully committed to the operations of the repository. This will support request for the purchase of needed equipment and other things that will be necessary for the smooth running of the repository.

The policy should among others include a clear statement on the following areas;

1. An introductory statement on the objectives of the policy itself and indicate the scope of coverage
2. The objectives of the Institutional Repository and its benefits. The scope of coverage should also be stated, i.e. the items to be held in the repository. Information on benefits of the IR to the institution, the faculty and other staff, students, and the country at large available from the repository project site (http://rsp.ac.uk) and the webometrics world of university rankings (http://www.webometrics.info)
3. A clear statement on who constitutes the stakeholders.

4. The formation of a management committee to oversee the implementation of the policy (If possible the head of institution or his deputy should be chairing that body). Specific meeting times should be indicated for the committee, e.g. have monthly or quarterly meetings.

5. A request for at least one IT support staff. This should preferably be a non-core IT person. The experience shows that core IT persons have a high turnover rate. It should be a person with a keen interest in IT and who can do some level of "tweaking" and "scripting" of computer programs.* A library could also look internally to see if any of its staff could be further trained to take up that responsibility.

6. A clear statement on the equipment required to run the platform. This should include at least two new servers, one high-end and a medium-end server. The mid-end server will provide back up if the main server fails. A book scanner and at least one computer. If two servers cannot be purchased at the same time, arrangements to purchase the second one should begin immediately after the acquisition of the first one to avoid undue delays

7. A clear statement indicating that the repository server should be provided with a public IP address and a dedicated bandwidth so that users can access it easily. The server should also not be a shared one. (i.e. have other programs running on the server)

8. That the servers should be provided with adequate security against both hackers and virus attacks. The importance for a backup of the records offsite should be clearly stated.

9. A statement on the location of the repository server. It is suggested that this be located at the Network Operation Centre instead of the library and a link to the server provided for the library. That way a 24/7 power supply and service is assured. (This will also make it easier for the NOC staff to manage the server when there is a problem since they will not need to trek to the library in such a circumstance) But in all situations the access/control of the server should be under the Library and this should be captured in the policy.

10. Statement on the standard format that all theses/dissertations should meet. This should include such things as form i.e. digital, pdf, arrangement of parts etc. Theses/dissertations should have abstracts and keywords provided by the author of the work and approved by the supervisor before submission.

11. Statement that students should submit their final and corrected theses to the library and be cleared by the library before they are graduated. (This will prevent the case where students submit works that have not been corrected, CDs with improperly arranged works, those that cannot be accessed, CDs with musical works, and outright blank CDs as their finished work).

Any institution therefore that seeks the support of CARLIGH, INASP or any supporting institution should be required to provide an approved and signed policy statement showing the commitment of the institution to the repository platform. Institutions that provide support must make sure that the policies are clear in their objectives and should make inquiries/input to help fine-tune policies before committing resources. Furthermore, no institution should accept to run the repository on a second hand server that the NOC might offer pending the purchase of a new one. An old server is prone to crash and all the work done will be lost. Once the authorities commit to the repository the library should make request for a new server before the installation of the platform is done. Needless waste of time will be prevented as the experience from the two universities showed.

Then again a desk should be set up at the library purposely to check the submitted works and make sure the soft copies meet the standards outlined in the policy. The soft copies should then be labelled and properly shelved as an extra back-up after the contents are uploaded onto the repository platform. The libraries should then provide clearance for the students to graduate. This will instill some discipline in the students to make them submit the right documents to the libraries. The libraries should continue to do advocacy and promote their repositories. Promotions should be done both formally and informally. Students should be introduced to the platform during their user orientation programs. Students preparing to write their theses/dissertations should be reintroduced to the platform and the standard format of presentation restated to them. Information about the IR should be presented in the library's user manual if such a document exists. Posters and flyers should be designed and used to support the promotion of the platform. Half day workshops could also be set up to introduce the faculty and other staff.

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*The misconception that all computer science graduates will be able to support or run a repository should be debunked. IT is a wide field of study and there are several branches where IT graduates specialize. One can thus have web designers, system analyst, database manager, network administrators and programmers. Therefore caution is needed when selecting / employing one to support a repository. Whoever is employed should also be able to support the other platforms of the library. If a library already has an IT support person, such a person should be given some more training in other to support the new platform

CONCLUSION

Institutional repositories are proving to be very good means of providing access to research findings to the communities where such research were carried out. These communities most times also happen to be the ones that need such information greatly. Academic institutions are bedrocks for undertaking research and for the Ghanaian academic institutions that graduate upwards of 10,000 postgraduates students each year, not to mention undergraduates, all of whom are required to do a research and present a report in the form of theses / dissertation, the volume of research findings that can be made available on such platforms cannot be overemphasized. But it is sad to say most of these findings are never made to have any impact as they are relegated to dusty shelves and drawers. Making such knowledge visible could promote more research into the same areas to increase knowledge. IR could also help to reduce plagiarism. When people know that their findings will be visible to the world via the internet they will be more cautious of pirating other peoples works since they could be challenged. On the other hand it will encourage quality research since findings could also be challenged for their authenticity or otherwise. The public exposure of the works will also encourage supervisors/advisors of such works to be more committed to their supervisory roles since they indirectly get publicity on the internet. But most importantly it will move the institutions from being islands of information/knowledge to a global community of knowledge creators/managers through their interconnectedness courtesy of their repositories.

CARLIGH and INASP should not relent in its efforts at seeking establishment of more of such platforms. Academic institutions which are yet to set up such platforms should be encouraged and if possible helped with policy preparation if they lack the expertise to do so. CARLIGH and INASP should also do advocacy and promote such platforms to the authorities of academic and research institutions to get them to support their libraries set up IRs. Overall the concept of IRs for all research generating institutions should continue to be of interest to all, for the country stands to be the ultimate beneficiary of such an enterprise. This view is supported by Shearer (2003) who states "If successful, IRs holds the promise of being very advantageous to researchers everywhere, especially those in the developing world." Chan (2004) adds that "research institutions and universities have the primary mission of creating, sharing, and disseminating knowledge, which are public goods. Open access through institutional repositories is a low cost and low barrier strategy for achieving this mission." It is in this vein that the institutions that CARLIGH/INASP supported to set up IRs are encouraged to make this mission possible and to have their IR services up and running again. What is hoped for now all depends on the institutions of higher education and research. Their collective will and their determination to see to the free and open distribution of the intellectual works coming from their backyard is what should be the focus. All libraries within the members of CARLIGH are strongly urged to initiate proceedings in getting a policy and seeking approval to make it implementable. That first step will be the very solid move towards setting up a repository and contributing to the wealth of knowledge available to the world.

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