Best practices and policies in institutional repositories development: The Ktisis case

Alexia Dini-Kounoudes[1] and Marios Zervas[2]

[1]Library and Information Services, Cyprus University of Technology
[2] Library and Information Services, Cyprus University of Technology

Abstract Libraries worldwide have realized the importance of institutional repositories in the intellectual life and output of an institution. Institutional repositories are now clearly recognized as essential infrastructure in the digital world. An institutional repository is a means for the institutions to manage the product of their academic research and to increase accessibility to that product. Generally, institutional repository development is still in the process of establishing guiding principles and best practices, through established cases which can be used to learn development options and risks. This paper begins with a brief description of the implementation process of Ktisis, the open access institutional repository of the Cyprus University of Technology, and continues to describe the set of activities used in the strategic plan of Ktisis. Among those activities was the definition of the promotional plan, the engagement in the international community and the definition of the Ktisis policy of use.

1. Introduction

Since the early 1990s libraries have worked on digitization projects to provide access to and preserve unique materials in their collections. Digitization raises the profile of the institution as users worldwide access its collections remotely.

During the last few years academic libraries worldwide have realized the importance of institutional repositories in the intellectual life and output of an institution as these are considered to be supporting tools in the dissemination of the scholarly output. Institutional repositories have emerged through the Open Access movement in order to promote free, online access to the research product of the institution. Most university libraries have built or are currently building their own institutional repository in order to capture, preserve and provide access to the intellectual output of its academic members.

The demands of the development of an institutional repository are still evolving and are different for each case. Therefore there are no specific guidelines to follow in order to ensure success. This type of work is highly technical, requiring design and implementation of robust information infrastructure and functional systems, but it is also managerial, requiring continual planning, prioritizing, and coordinating with respect to the expectations of various stakeholders, including faculty, university administration, and publishers, as well as academic librarians already serving in established professional roles (Palmer, C. L,Teffeau, L. C, Newton, M. P., 2008). Successful repositories involve good planning, commitment and focus on the project.

2. The need for Institutional Repositories

At the most basic and fundamental level, an institutional repository is the means to prove that the product of the research activity of a university will be represented, documented and shared in a digital form. For universities, institutional repositories can be used as marketing tools used to demonstrate the faculty and student research.

Moving beyond their initial functions, institutional repositories no longer serve as place to centralize, preserve and provide access to the content. They have also helped to create a new infrastructure of a global system of distributed interoperable repositories that provides the foundation of this new infrastructure.

The creation of an institutional repository has become very common in academic libraries, due to the availability of a number of open source software platforms that allow for simple implementations. Libraries decide to undertake such projects because they have realized that these can be used as a venue for the centralization, storage and long-term curation of all types of institutional output. It is also a way of

maximizing availability, accessibility and functionality of the research product at not cost to the user (Johnson, 2002; Pickton and Barwick, 2006; Lyte et al, 2009).

3. Getting started with the implementation of IR

As mentioned earlier successful repositories involve good planning, commitment and focus on the project. However since there are no established guiding principles and practices for the development of institutional repositories, in this study we have used examples from repositories created in other universities worldwide in order to define a few practices that may ensure success.

Experience has showed that before development begins it is important to think about the purpose of the project. This is necessary in order to define what an institutional repository is and what should be placed in it. There are a few questions that have to be asked in advance, such as "Who will manage the repository?", "What is the collection policy?". Early decisions which can be revisited later regarding the scope and vision of the repository help establish the services that will be provided.

A major consideration that needs to be taken beforehand is staffing. This is important to know from the beginning as the number of available staff will help decide if there is enough staff to develop and customize the repository. The number of available staff will provide answers to two important questions that need to be asked at this stage:

- How will the system be supported?
- What will be the response time to problems and changes?

Copyright issues are important prior to begin submitting one's work to an institutional repository. We need to think about copyright policies in advance. A good practice to follow is to create copyright forms for the authors to complete and sign before they submit content to the repository.

Another important issue is the overall look of the repository. The interface has to be customized in order to be appealing to the users and have a visual identity. A good interface implies that the library has fully committed to the project and is very interested in promoting the faculty work.

In establishing repositories there are a variety of decisions to make regarding policies. Policies should cover the scope of the repository, the content, access levels, legal rights, standards, sustainability.

4. Good practices for success

Each individual repository project has different objectives and goals, therefore determining if existing repositories are successful or not is a not a straightforward task. Nevertheless we can define a number of strategies for success if we gather information from different repositories worldwide.

Sometimes it is not enough to make the people involved aware of the institutional repository existence. This does not mean that because they know that the repository exists they will also use it. The academics and the students must understand and believe that the repository offers them useful services. Awareness can be increased through training, presentations, workshops etc. The authors need to understand the values that the repository offers.

Usually, the academics ask for administration services and consultation as this saves time for them. A good practice to follow is to give them the option to use the self-archiving process or to forward their work to the Library staff and upload their work for them. Academics are also looking for opportunities to create original content. Therefore it is good advice to widen the definition of the content and think about what kind of content will be valuable in the institutional repository.

Librarians are not just responsible for keeping the repository up and running; they must also act as promoters. They must be able to communicate with the academics and understand their needs. Subject librarians have a close relationship with the academics. Therefore it is advisable to involve them in the process to generate new content ideas together with the academics and also to locate new content to be added to the repository. The promotion of the repository should be high in the list of priorities.

5. The Ktisis Case

The Library and Information Services of the Cyprus University of Technology has embraced the Open Access movement and moved on to develop its own institutional repository, Ktisis (http;//ktisis.cut.ac.cy). Ktisis is an open source institutional repository gathering any digital material relating to the various activities of the University especially original research material produced by the members of the University. Defined in this framework, Ktisis demonstrates the intellectual life and the research activities of the University, preserving, spreading and promoting the scientific research to the local and international community. Ktisis was named after the symbol of the Cyprus University of Technology depicting Ktisis, the spirit of creation.

5.1. Ktisis implementation

The first stage of the implementation process was the evaluation of the available open source content management systems. In 2008, following the directions of DRIVER (Digital Repository Infrastructure Vision for European Research, (http://www.driver-repository.eu), the Library and Information Services decided to set up Ktisis using the open source software DSpace (http://www.dspace.org). DSpace is an open source software developed by the MIT Libraries and Hewlett-Packard Company that enables open sharing of content. DSpace follows the national standards such as the Dublin Core (http://www.dublicore.org) and is compatible with the OAI-MPH protocol of metadata harvesting. It enables capturing the data in any digital format – text, video, audio, and data files. DSpace indexes the digital content, so users can search and retrieve the material. It also distributes the digital content over the World Wide Web and it preserves the material over the long term. Dspace provides the capability to the user to update the digital collection (self-deposit), It also distributes the digital content over the World Wide Web and it preserves the material over the long term.
The main Library goals for the creation of the repository were:

- To gather and disseminate the output of the academic research of the university in many different formats
- To promote open access to the Cyprus University of Technology
- To guarantee long-term preservation and access to the data
- To promote interest and involvement in the digitization process and preservation of cultural heritage material

In September 2008 work for the deployment of DSpace began. One of the first tasks that had to be done was the preparation of the translation files for the Greek language. Concurrently the user interface was changed in order to meet our own requirements. After that we activated the use of the Creative Commons licenses in DSpace in order to provide copyright protection to the items submitted to Ktisis. At the same time the Governing Board of the University adopted the Library's proposal for the mandatory submission of the PhD and postgraduate theses in Ktisis through the self-archiving procedure which has been suggested as the strategy for achieving open access during the Budapest Open Access Initiative in 2001.The repository was made available to the public and it was announced to the academic community of the university in November 2008. The members of the academic community of the university received an email asking them to deposit their work to Ktisis either using the self-archiving method or by sending their work to the Library staff by email. Several reminders were sent out to the academic staff about this issue in the following months.

Between December 2008 and March 2009 the Library staff worked on the digitization and submission of 161 undergraduate theses belonging to the School of Health Sciences. The year 2009 was the year of consolidation and expansion of the Ktisis content. Our goal was to increase the number of submitted items to the system and also to digitize content of cultural importance. The Library collaborated with several organizations in Cyprus for the digitization and archiving of material of cultural heritage importance belonging to those organizations. The product of this collaboration was the creation of three digital

collections containing photos starting from the year 1891 and scanned images of caricatures from the cartoon newspaper "Satiriki Epitheorisi" ranging between 1967 and 1981. Also in order to achieve our goals, we defined a number of measures that would help us promote Ktisis, increase awareness and get in touch with owners of items of cultural importance, such as photos, newspapers, etc. These measures included presentations, seminars, attendance to European conferences, creation of flyers etc.

By the end of 2010 the number of submitted items (either by the authors themselves or by the library staff) in Ktisis was around 800. This number does not include the items belonging to the digital collections.

5.2 Ktisis evaluation

After a few months of use, the Library staff realized that the number of items submitted to the repository is low. This is why the Library decided that it was necessary to review the strategy used in the promotion of Ktisis, to identify what the problems are and to find new ways to promote Ktisis.
After discussions with many academics we came to the conclusion that the academics find the self-archiving process to be complex and slow. They do not want to spend a lot of time submitting their work to Ktisis. Their main fear is that the self-archiving method means more work for them. Another issue that they brought to our attention was the copyright
Based on these findings it was decided that the best way to evaluate Ktisis and promote it further was to prepare a questionnaire about Ktisis, which will be given to the academics to complete. This is a process scheduled for late 2011. In addition to this it was decided that we need to develop a promotional plan for Ktisis that will make the academics more aware of what Ktisis is, its values, the services it offers and also to make them more aware about Open Access in general. This has to be communicated to the academics and also to other institutions with the help of presentations, papers, promotional material, flyers, websites etc, as well as by participating actively in meetings, conferences and projects related to Open Access and Dspace.
Another step of the new promotional strategy was to develop information services for the authors and the users of Ktisis. Since the academics are very concerned about intellectual property issues regarding their own work, it is good practice to educate them about copyright and the way it is handled in Ktisis using help pages, user guides, flyers, etc. The academics have to realize that the repository helps to boost their image both within the institution and the outside world
Academics need to understand the benefits that the institutional repository can offer to them. It is important that the librarians make them realize that the repository offers them increased dissemination and impact. This increased dissemination allows for enhanced professional visibility of their work. They also need to believe that the repository provides a more effective and personalized search and discovery facility, addressing the problem of information oversight (Jain, P., 2011).
The most effective measure that the Library undertook was the definition of a managing policy for Ktisis.

5.3 Ktisis managing policy

The Ktisis managing policy starts by defining what Ktisis is and its goals. It continues with the definition of Ktisis content, making it clear that the articles published in Ktisis are freely accessible by anyone using the internet. Content that can be submitted in Ktisis is: research work produced by the members of the academic community of the university and members of the administrative community of the university, research worked produced by academic staff that had been elaborated in other institutions, PhD degree theses, MSc theses, BSc theses, etc.
The policy also defines that the Governing Board of the University decided that all the members of the academic community must be informed about the mandatory submission of all their research work to the Library. Additionally, it states that it is mandatory that all students submit their undergraduate, postgraduate or PhD theses to Ktisis.

In order to deal with copyright issues, the policy makes it clear that any research work whose rights do not fall within the open access policy will not be made available fully. Instead their bibliographic metadata and the electronic address of the item will be made available to the public from Ktisis.

For the submission procedure, the Library has decided to continue with the two existing available methods for submitting an item to Ktisis, either by sending the work by email or my using the self-archiving method.

For example, the self-archiving method for a postgraduate thesis has to be done by the student himself through Ktisis following the next few steps:

- Submission of the description data for the thesis
- Selection of the Creative Commons license
- Acceptance of the License for the Electronic Disposal of the content
- Submission of the abstract of the work

The full text of the thesis is sent to the relevant Faculty for further checks. When the thesis is checked properly it is published in Ktisis. At this stage the item receives a permanent URL which does not change even if the system changes. When the submission procedure is finished, the student has to sign the License for the Electronic Disposal of the content at the Library. Accordingly the full text of the thesis will be available or not in Ktisis not according to the restrictions imposed by the author. The Ktisis policy of management will be operational later in 2011.

6. Indictors of success

All the good practices discussed earlier in this article contribute to the success of an institutional repository. The main indicator of a repository's success is the number of submissions. A high number of submissions, the frequency of submissions, and an obvious increase in the submissions, are all indicators of success. Also if it is proven that there is a broad representation of all the levels, i.e. academic staff, BSc students, MSc students, PhD students, etc. this can be an indicator that the institutional repository is serving its purpose properly.

The number of users of the repository, both new and returning can show if the repository is successful. Additionally, the type of content used and the nature of its use can act as a success indicator. For example if articles published in Ktisis are actively cited in reports and publications, this means that the Ktisis content is usable. Keeping track of item visits and file downloads, we can measure the ability and success in offering online access to the content. Another indicator of success is the online visibility of the repository in search engines.

In order to make institutional repositories more successful and lasting, it is recommended that we follow a comprehensive promotion and publicity of the benefits of the repository. In addition, it is necessary to provide clear policies of copyright issues and ownership. The development of a repository is ongoing and it should be considered as an ongoing project. Last but not least it is recommended that the academics are given incentives to encourage them to publish their work in the institutional repository.

7. Conclusion

The implementation of an institutional repository can be a very demanding process not only due to the technical issues that may arise, but mainly because a repository interferes with the academic community and the research output of its members. Once the repository is set up it is required that all the research product of the academic community is placed there in order to boost the institution's image.

The most difficult task is to make the members of the academic community believe in the repository's values and services and therefore submit their work in it. Success will come eventually but the staff working on the repository must stay committed on the job in order to ensure it.

It is important that institutions recognize the institutional repositories as serious and long term commitment to the academic community. Repositories can be very powerful and if properly developed they can advance a big number of goals and address an extensive range of needs. If there is proper collaboration between the academic community and the Library, repositories can change the landscape of academic communication.

References

Palmer, C. L,Teffeau, L. C, Newton, M. P., (2008). Strategies for Institutional Repositories Development: A case study of three evolving initiatives. *Library Trends, Volume 57, Issue 2, Fall, 2008, pages 142-167.*

Lynch C.A., (2003, Institutional repositories: essential infrastructure for scholarship in the digital age. *ARL: A Bimonthly Report, no. 226.*

MIRE (2009). The institutional repository in 2010…and beyond, (2009*). Online Information Conference, 2009.*

Drake,M.A., (2004). Institutional Repositories:Hidden Treasures. *Information today Inc..*

Bankier, J.G. ,(2008). Institutional Repositories:Strategies for the Present and the future. *Strategy session, NASIG 23th annual Conference.*

Ferreria, M., Baptista, A. A., Rodrigues, E., Sraiva, R., (2008). Carrots and sticks. Some ideas on how to create a successful institutional repository. *D-Lib Magazine, January/February 2008. Volume 14 Number 1/2.*

Vij, R., Soni, N. K., (2010). Institutional Repositories Movement in India: Tips & strategies for success in the challenging times. *7th convention PLANNER.*

Koelen, M. Th., Shafack, R.M., Ngum,H. (2009). Think Big Start Small. Institutional Repositories: policies, strategies, technological options, standards and best practices. The case of the University of Buea. *First International Conference on African digital libraries and Atchives, Ethiopia.*

Jain,P., (2011). New trends and future applications/directions of institutional repositories in academic institutions. *Library Review, volume 60 issue 2.*

Johnson,R.K. (2002). Institutional repositories:partnering with faculty to enhance scholarly communication. *D-Lib magazine, Vol. 8 no 11.*

Pickton,M., Barwick, J. (2006). A librarian's guide to institutional repositories. *Loughborough University, available at http://magpie.lboro.ac.uk/dspace/handle/2134/1122.*

Lyte,V., Jones, S., Ananiadou, S., Kerr, L. (2009). UK institutional repository search: innovation and discovery. *Available at http://www.ariadne.ac.uk/issue61/lyte-et-al/.*