

Full Length Research Paper

Scholarly communication: The value of repositories and e-portfolios at the University of Namibia (UNAM)

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The study looked at scholarly communication with great emphasis being placed on the value of institutional repositories (IR) and electronic portfolios (EP) at the University of Namibia. The methodology adopted for the study was a qualitative design which included interviews and content analysis of relevant literature. The study provides an insight into key terms such as scholarly communication, open access (OA), institutional repository (IR) and electronic portfolios. The authors argue that IRs and e-portfolios complement each other as tools for a scholarly communication process since their role is to provide open access literature, and provide a platform of a usage-reporting service which gives authors and their institution information on how the content of the repository is being used. In the discussion, the study describes the implementation of the Scholarly Communication in Africa Programme (SCAP) at the University of Namibia which was spearheaded by the Faculty of Humanities and Social Sciences and highlights some of the challenges faced which include absence of a dedicated institutional intellectual property (IP) policy, lack of interest by academics to share their artifacts or publications and limited skills and capacity on the part of personnel working on the project.

Key words: Institutional repositories, open access, scholarly communication, scholarly materials.

INTRODUCTION

Institutional repositories (IRs) and electronic portfolios (e-portfolios) have become a crucial subject in this information age, and this has seen a lot of academic institutions in the past ten years setting up repositories (Dora and Maharana, n.d).

The Registry of Open Access Repositories (ROAR) registered more than 1,300 IRs and these will continue to increase in future since they have become indispensable tools for information and knowledge sharing (ROAR, 2014). This growth of information and publications

outputs has its underlying pillars at the highest strategic level in respect of national development plans and prompted a lot of institutions to focus their attention on the development and implementation of repositories.

In Namibia, scholarly communication is being impacted by a number of factors which include the strategic Vision 2030. According to the former President of the Republic of Namibia, Dr Sam Nujoma, the "Vision presents a clear view of where Namibia would want to be by 2030. It is a vision that will take Namibia from the present into the

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future; a vision that will guide the country to make deliberate efforts to improve the quality of life of its people” (Republic of Namibia, 2015). The vision is also designed to promote the creation of a knowledge based society where great emphasis is placed on research which is key to creating a diversified, open market economy, with a resource-based industrial sector and skills development.

The University of Namibia’s research policy (2014) also supports the national agenda of Vision 2030, and is aimed to increase research output of high quality that has potential relevance to national and societal development objectives. Kiangi (2005) argues that academic institutions today are undertaking heavy investments in order to create improved research profiles and they should continuously pride themselves of the quality and excellence of research, which foster a culture of academic enquiry and innovation. For research activities of a University to be meaningful, there is need to maintain a focused approach in core research disciplines, by increasingly facilitating a more collaborative and interdisciplinary approach to research initiatives. Thus, this study looks at the value of repositories and e-portfolios in scholarly communication with particular emphasis to the University of Namibia.

METHODOLOGY

This study adopted a predominantly qualitative single case study research design approach in which interviews were conducted with Scholarly communication in Africa programme (SCAP) SCAP project staff, and data was also collected through content analysis from project reports and relevant literature. The sample consisted of three project staff purposefully selected and literature on e-portfolios and electronic repositories. The instrument used was an interview guide to collect data which was analysed using content analysis and coming up with various themes (Creswell, 2003).

Institutional repositories and e-portfolios

In order to gain a conceptual understanding and demystify the concepts, the authors would like to zoom into the following definitions as highlighted in this study, and taking a stance in repositioning the key definitions for this study. Therefore, the paper will be guided by the following definitions.

Dora and Maharana (n.d.) define an institutional repository (IR) as a digital archive of academic institutions’ research and intellectual output. The authors further explain that it is an open access tool which collects, documents, preserves and makes accessible a range of research materials created by a faculty, which includes; academic and research staff and students of an institution.

Thus, its contents may vary from e-prints, peer reviewed articles, monographs, teaching materials, databases and other ancillary research materials which include, conferences papers and electronic dissertations and thesis, etc. Li and Banach (2011) opine that digital preservation is the managed activities necessary for the long term maintenance of a digital copy (including metadata) sufficient to reproduce a suitable facsimile of the original document which is kept for continued accessibility of the document contents through time and changing technology.

E-portfolios, according to Lorenzo and Ittelson (2005), are a

digitised collection of artefacts including demonstrations, resources and accomplishments that represents an individual, group or institution. This collection can comprise of text based, graphic or multimedia elements archived on a website or on other electronic media such as a CD-ROM or DVD.

An e-portfolio can also serve as an administrative tool which is used to manage and organise work created with different applications in order to control individuals who have access and privy to the academic work (Lorenzo and Ittelson, 2005). Thus, e-portfolios encourage personal reflection and often involve the exchange of ideas and feedback, in most cases between academics and students. E-portfolios can take different forms and shapes considering the purpose or context. Contextually, for the purpose of this study, the authors will consider teaching and research portfolios.

Value of IRs and e-portfolios to scholarly communication

Scholarly communication is the process whereby academics, scholars and researchers share and publish their academic work so that they are available to the wider academic community (such as university academics) and beyond (Trotter et al., 2014).

Li and Banach (2011) define scholarly communication as the system through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. The system scholarly communication can take different shape; that is, both formal means of communication, through publication in peer-reviewed journals, and informal channels, such as electronic listservs.

A number of models on scholarly communication have been adopted, and one of such model is the Microsoft model on “Scholarly Communication Life Cycle”. The scholarly communication life cycle according to Microsoft (2014) involves multiple steps in the life cycle, which starts with initial concept of collecting data and doing analysis, then putting forward a hypothesis. The second phase is authoring, or writing stage, which is then followed by the third phase of publication/dissemination that ranges from blogging to publishing an article or a monograph to presenting a paper at a conference. The fourth and final phase is storage or archiving the material, with an intent and goal to preserve it for future posterity.

These four steps form the basic scholarly-communication life cycle as opined by Microsoft (2014); it is imperative to increase these four phases with two additional concepts so that they become six phases. One is discoverability, which is the pervasive need to search and find information during the process. The other concept is collaboration, which is the need to partner and work with other authors, editors, librarians, or research scientists over the course of the entire life cycle. This is shown in Figure 1.

Institutions of higher learning and research institutions are experiencing an information overload and this has necessitated them to find suitable ways in which knowledge and information can be managed effectively so that it can be easily made available through their IRs (UNAM, 2014). Crow (2002) states that the benefits of IRs to institutions are numerous, and have also been described in brief by Dora and Maharana (n. d) as follows:

1. Fulfils a university’s mission to stimulate, encourage and disseminate its scholarly work and to enable to compile a complete record of its intellectual output
2. Ensures the long term preservation of an institution’s academic output;
3. Increases the public services value of the institution;
4. It can also be used as a marketing tool to increase visibility and prestige of the respective institutions and also helps to attract new funding sources, including producing well qualified graduates.
5. For individuals, the IR acts as a central archive for their research

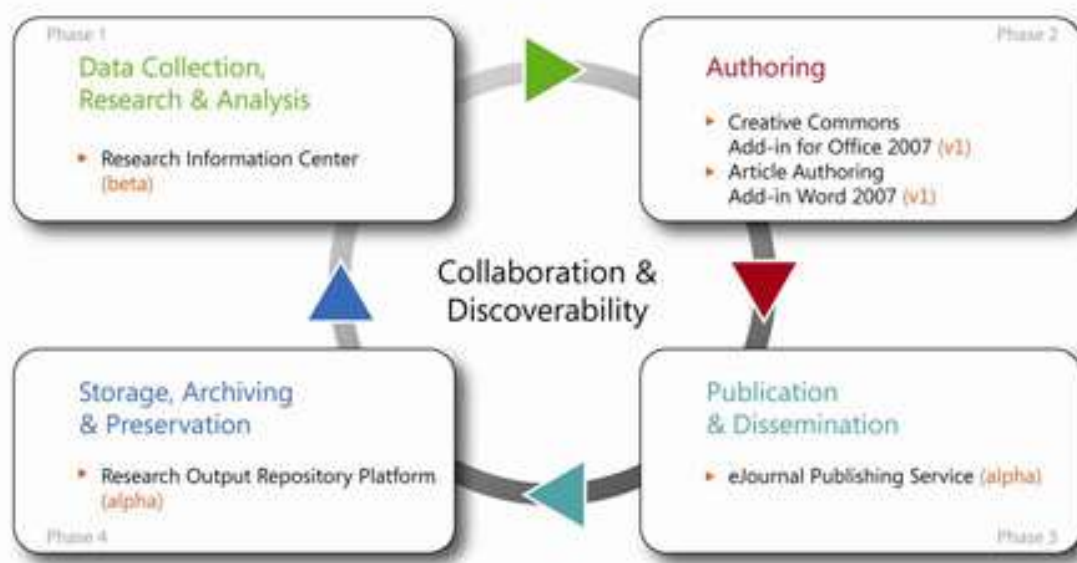


Figure 1. The scholarly communication cycle (Source: Microsoft, 2014).

work since it is open access; it therefore increases the dissemination and the impact of their work.

6. Researchers also benefit through citation of their research papers (bibliometrics)

7. The cost of establishing an IR is modest as compared to other library initiatives

8. An institution can mandate self-archive across all subject areas, and

9. Gives a huge credential to the institution to link their repositories to others which are in the platform of OAI-PMH.

The Eberly Centre for Teaching Excellence (n. d.) argues that the portfolio is an important tool in two folds firstly, it is essentially a reflective activity. The very process of writing down one's teaching philosophy and corroborating it with the appropriate evidence automatically causes an individual to reflect on his or her teaching. Secondly, portfolios are also used by the administration for the assessment of an individual's teaching performance. Therefore, the portfolio is meant for both for personal use and for an external audience, for the purposes of self-reflection and summative evaluation (Paul, 2004). Whatever the direction chosen, the portfolio is a dynamic document, and it will evolve over the course of your career. Ultimately, it should demonstrate commitment to and/or impact on the following (Eberly Centre for Teaching Excellence, n. d.):

1. Teaching. This section aims to demonstrate that the instructor is engaged in an ongoing reflection about his or her teaching.

2. Progress of students. There is no teaching without learning. The best teachers inspire, motivate, and create an environment where learning can occur.

3. Colleagues, peers in the department or institution. Teaching takes place in a broader context than the classroom. Therefore, it should be informed by and inform the department's curricular goals and by the institution's pedagogical mission.

4. Discipline or teaching in general. The best teaching is also informed by a broader scholarship, whether disciplinary (for example, Science Education), cross-disciplinary (for example, First Year Programs) or specific pedagogies (for example, Service Learning).

Against this backdrop, the following section highlights the value of IRs and e-portfolios. IRs and e-portfolios according to Lorenzo and Iltelson (2005) constitute a permanent and an important part of the scholarly communication process, of which their first role is to provide Open Access literature.

Additional services may be added to repositories to provide extra functionalities which can be tailor-made to suit an institution. Enabling Open Scholarship (EOS, n. d.) argues that institutional repositories provide a platform of a usage-reporting service which gives authors and their institution data on how the content of the repository is being utilised.

A search service may help users find specific items more easily including a service that organises content in specific ways may help authors, for example, to download a list of articles into their curriculum vitae (CV), so as to aid institutions in making assessments of their research programme or for reporting data to governments or for other statutory and or policy requirements.

Strivens (2007) observes that e-portfolios help to foster an independent and autonomous way of thinking in academic institutions. Today, many students use social multimedia such as Facebook, Twitter, Instagram, etc. and texting which are all informal platforms and e-portfolios, on the other hand, are more formal platforms or settings where students and academics apply both their knowledge of how the web works and the message they want to convey (Lorenzo and Iltelson, 2005).

Lane (2007) argue that many universities are currently working to make sure that students and academics gain practice and experience with e-portfolios so that they are able to use them effectively and to the best of their ability. For example, Strivens (2007) mentions that students at Michigan University can earn the Michigan Certificate of Outstanding Achievement in Teaching Technology (MCOATT) for submitting an e-portfolio which demonstrates evidence of technology being used in the classroom. It is acknowledge that such an initiative is aimed to make Michigan one of the leaders in integrating technology into the training of young professionals.

E-portfolios have evolved over the years from paper-based portfolios and became popular because they provide the opportunity to review, communicate and give feedback in an asynchronous manner. In addition, e-portfolios offer open access to

resources of the academic community which includes students who would want to consult their lecturers' portfolios including resources which are being used for teaching and learning purposes such as class notes, previous exam papers and published works which their lecturer or tutor has contributed to the academic world (Edutopia, 2014).

According to a study on open access conducted by Jones et al. (2006), the findings reveal that open access papers are read more widely and as a result are cited more frequently. This however, shows that open access materials have greater impact and higher *h*-index. The *h*-index attempts to measure both the scientific productivity and the scientific impact of a researcher. The index is based on the researcher's most cited papers and the number of citations that they have received in other publications. The index can also be collated and applied to the productivity and impact of a group of researchers, scientists, or academics such as a faculty or university or country.

Swan et al. (2015) posits that repositories can 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. Signs of such things happening exist in this information age and some scholarly societies and publishers are encouraging authors to notify them when a paper has been deposited in a repository and when it is ready to be peer reviewed and published (UNESCO, 2013). Some university presses are working hand-in-hand with the repository when publishing books by institutional authors.

Repositories adhere to an internationally-agreed set of technical standards that means that they expose the metadata (the bibliographic details such as author names, institutional affiliation, date, titles of the article, abstract and so forth) of each item in their contents on the Web in the same basic way (UNESCO, 2013).

In other words, they are 'interoperable' meaning that data can be shared using a common protocol to which they all adhere called the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH). The contents of all repositories are then indexed by Web search engines and making them accessible through Google and Google Scholar and thereby creating online Open Access databases of freely-available global research. As the level of self-archiving (the process by which authors deposit their work in repositories) grows, the Open Access corpus will in future represent an increasingly large proportion of the scholarly literature.

RESULTS

The intended purpose of this study was to find out the value of the IR and e-portfolios at UNAM, and how widely the scholarly communication project is being implemented. However, the results from this study presented a bag of mixed feelings as indicated in the subheadings below:

Awareness of IR and e-portfolios

From the interviews conducted, the researcher discovered that academics with few years of services at UNAM were aware of the purpose of the IR as compared to the ones who have served the institution for a long time. It was further mentioned that there is likely going to be continuity in terms of appreciation of the IR concept and purpose amongst junior academic staff.

The researcher further discovered that new UNAM academic staff members are more willing to deposit

scholarly materials in the IR than senior academic staff with long years of service and it is not clear what could be the reasons behind that. In terms of the e-portfolios, the study also revealed a similar trend like the institutional repository in that junior academic staff found it easier and are more willing to create their e-portfolios as compared to senior academic staff. The e-portfolios seem to be not popular with some academic staff and in most cases technological challenges were cited.

The study also noted that there is a gap in terms of depositing of materials in the IR amongst faculties. Furthermore, it was noted that the highest faculty in terms of depositing materials was the Faculty of Humanities and Social Sciences which is supported by the notion that there is a gap in depositing and participation by faculty staff in depositing their scholarly outputs in the IRs based on their period of service in academic institutions (Covey, 2009).

The study also discovered that academics are depositing scholarly articles, dissertations, conference papers and examination papers in the repository. This is similar to the University of Pretoria's repository which receives deposits mostly in form of thesis and dissertations as well as historical and archival materials donated to the University (Van Deventer and Piennar, 2008).

In the same vein, e-portfolios used for teaching purposes included in their collections of lecture notes, study guides, activities and links to referenced articles (some of which are in the repository)

Value of IR and e-portfolios

Among the SCAP project staff who participated in the interview, they agreed that academics perceived the IR and e-repositories as very important tools for scholarly communication. The respondents concurred that the IR is important since it improves the university ratings, make UNAM research visible to the outside world thereby encouraging publishing by academics and the research community and the IR becoming a silo of information and knowledge to service the information needs of Namibia.

In comparison, the study conducted on the importance of IR by Nyambi and Maynard (2012), showed that respondents do not understand why they should deposit their works in the IR even though it is important to deposit scholarly materials. The same sentiments were also mentioned that UNAM staff although they regard the IR as important but they do shun it and deposit their materials elsewhere.

Therefore, to increase the motivation of depositing scholarly materials in the UNAM's IR, academics need more exposure and information regarding the importance of depositing scholarly materials in the repository. Furthermore, academics need to know that the more they are exposed to the mode of depositing scholarly materials and methods of depositing scholarly materials,

the more their profiles will be elevated not only at UNAM but internationally. It is also imperative that UNAM provides clear guidelines on how issues of copyright will be safeguarded in both the IR and e-portfolios.

Usage of IR and e-portfolios

The study revealed that academics face challenges and difficulties in depositing and searching for scholarly materials in the IR. The study findings matches with the study by Fullard (2007) on institutional repositories in South African research community which found out that the success rate for accessing and using articles in the IR was extremely low due to reluctance of staff members to deposit materials and technological challenges.

The researcher discovered that the challenges of using and depositing materials into the UNAM's IR could also be attributed due to lack of incentives and technological challenges amongst academics. In order to increase the access and usage of UNAM's IR, there should be recognition of academics who deposit materials in the repository. Additionally, a user-friendly IR platform for academics which can make life easier for them in retrieving, disseminating and depositing materials should be adopted. Training is needed for faculty academics to enable them to deposit scholarly materials in order to reduce the challenges faced in accessing and using the IR and e-portfolios.

In order to increase more records by way of depositing in the UNAM's IR, the library management should encourage academics and perhaps build recognition awards given to the academics who deposit their materials frequently in the repository (Dulle and Minish-Majanja, 2011). As noted by Cervone (2011), these faculty members may serve as allies or friends of the repository, such that the content provided by them may serve as good models for other academics.

DISCUSSION

The ROAR lists two OA repositories in Namibia: UNAM Scholarly Repository at the University of Namibia Libraries and Ounongo Repository of the Polytechnic of Namibia, now known as the University of Science and Technology (NUST). UNESCO (2013) wrote that the Polytechnic of Namibia and University of Namibia Libraries signed the Budapest Open Access Initiative which is a major declaration in support of Open Access.

By signing the Budapest Open Access Initiative, the University of Namibia started to make collaborations by participating in the Scholarly Communication in Africa Programme (SCAP) which was a three-year, IDRC-funded initiative aimed at increasing African universities' contribution to regional and global knowledge production. This initiative was jointly hosted by the Centre for

Educational Technology and the Research Office at the University of Cape Town. The project used four African universities (University of Namibia, the University of Cape Town, University of Mauritius and the University of Botswana) as study sites that worked in close collaboration with the Southern African Regional Universities Association (SARUA) in order to improve the status of institutional repositories where they existed and to establish one where there was none.

Trotter et al. (2014) note that UNAM administration recognised the potential of OA scholarship through its UNAM Research Strategy document of 2005. In the document, the implications for OA to further the interest of national development were made clear, but since that time, there has been little movement in integrating that sentiment into policy. UNAM's ratification of a new communications policy that places OA commitment at the centre of its dissemination strategy (UNAM, 2014) was crucial because, even though most UNAM scholars supported OA, they lacked funding, capacity or incentives to ensure that their own work is disseminated in an open access system.

UNESCO (2013) states that researchers from Namibia publish articles in international Open Access journals which cover various topics such as medicine, microbiology, pharmacy, agriculture, social science, etc and some of these articles have been published in Public Library of Science (PloS) Open access journals: PloS ONE, PloS Genetics, PloS Biology, etc.

In 2006, an international repositories initiative partnered with UNAM to install an institutional repository in the library also known as the Information and Learning Resource Centre (ILRC). UNESCO (2013) reports that this initiative was overseen by the Library's ICT department at the time and it was populated with some digital objects, mostly electronic theses and dissertations, as well as back issues of the Namibia Development Journal. However, since the repository was installed in isolation; that is, without reference to the broader institutional policy environment – it essentially functioned as a static archive and failed to fulfill its mandate of being recognised as an institutional resource serving the university's research objectives. This ultimately resulted in limited uptake by UNAM academics since the repository's value was never demonstrated to them.

Trotter et al. (2014) wrote that all activity around the UNAM's repository ceased with the restructuring of the ICT department in the library which was responsible for managing it and the server remained dormant until early 2011 when the university investigated the prospect of resurrecting it and salvaging its content. It is noted that external consultants were hired to ascertain the state of the server of which they reported that it had been irreparably damaged by power surges due to the absence of load balancing and disaster recovery mechanisms thereby making all content on the server to be lost. Trotter further notes that the desires by the

UNAM community of reviving the IR initiative through the SCAP programme's intervention focused on reviving the institutional repository for the purpose of making publishing to be the core function of the university, increase scholarly outputs that could address national developmental issues and providing academics with a platform through which they can share their scholarly work such that they improve their visibility.

In 2011, UNAM partnered the SCAP programme, which provided the initial resources to pilot an institutional repository project in collaboration with library under the guidance of the systems librarian. The pilot stage involved the Faculty of Humanities and Social Sciences (FHSS), which shared a broad range of information resources that promote the institutional reputation and making sure that mistakes that led to the previous repository failure are not repeated by commissioning the implementation process comprised five phases which were as follows;

1. Identification of institutional stakeholders
2. Planning and strategic document formulation
3. Technical development and hosting strategy
4. FHSS content collection and finally policy development.

The following UNAM partners were identified and these included; the ILRC (Library), Computer Centre, UNAM Press, Department of Information and Communication Studies (DICS), Research and Publications Office. The ILRC (library) provided technical support and contributed as a key partner in terms of being the host of the previous repository and the Computer Centre, as the university's ICT service provider; the UNAM Press because of its publishing mandate and experience in support of the institutional research agenda, but also in developing channels for engaging with the academic society; the Department of Information and Communication Studies (within FHSS), provided input on the collection and collation of the content and the Research and Publications Office (RPO), the institutional body involved in the management and promotion of research (Trotter et al., 2014).

The institutional repository started by running on D-Space and being populated by the library staff with technical assistance provided by academic staff in the Faculty of Humanities and Social Sciences (FHSS). The Department of Information and Communication Studies through the assistance of two academic staff were responsible for ensuring quality by editing the e-portfolios, with a specific focus on teaching and research portfolios and publications collected from members of staff. Student assistants were engaged in order to create e-portfolios and collect data from staff members, which then served a dual purpose to the D-Space repository.

The repository and the e-portfolios are linked from the UNAM website where they are sitting in different servers

administered by the Computer Centre. The e-portfolios are created by an application called WiX or Mahara whereby links are provided to resources seating in the IR. Figure 2 shows the structure of IR as shown in the UNAM's Current Research Information System.

The success of the implementation of the SCAP initiative at UNAM was due to its alignment with both institutional and national strategic focus areas and commitment shown by the stakeholders. The University management supported the SCAP programme throughout its entire three-year period of engagement, with administrators, academics and other partners who demonstrated interest in the programme's potential to advance the scholarly communication agenda.

The high-level stakeholders facilitated a smooth relationship and the UNAM research coordinator; being the Dean of FHSS was also instrumental in bringing executive weight to the implementation initiative (Trotter et al., 2014). With all these factors in place, it helped this initiative move beyond the pilot stage at a Faculty level to a full-fledged engagement at the institutional level and the institution now boasts of a full-fledged scholarly communication policy.

Challenges faced by UNAM's IR and e-portfolio initiative

Although setting up of this initiative raised the success bar, also important are some of the setback or problems faced during the implementation period. These will be discussed in detail in the following paragraphs.

One setback of the SCAP programme was the lack of and absence of an institutional intellectual property (IP) policy. It has been observed that IP is often one of the most challenging components (Trotter et al., 2014) especially when an institution takes a step to share its research content openly. The absence of an IP policy at UNAM was thus problematic and raised a lot of concern not only for the academic community but for any form of scholarly communication activity, especially when attempting to develop new practices that require engagement with a wide range of outputs.

Secondly, the engagement of the academic community was another greatest challenge in order to sustain repository development since the growth of the IR depended more on their support in depositing academic work. While many academics expressed interest and promised support in the SCAP initiative, it took considerable time and effort to get them to share their research and publications for the repository.

Ferreira et al. (2008), Finch (2012), Geiseke (2011) and Harnad (2009) cited lack of time, rewards or incentives as some of the challenges faced by academics when sharing their outputs. The IR at UNAM was no exception to these challenges and the lack of incentives hindered academics' interest in making the effort to submit and

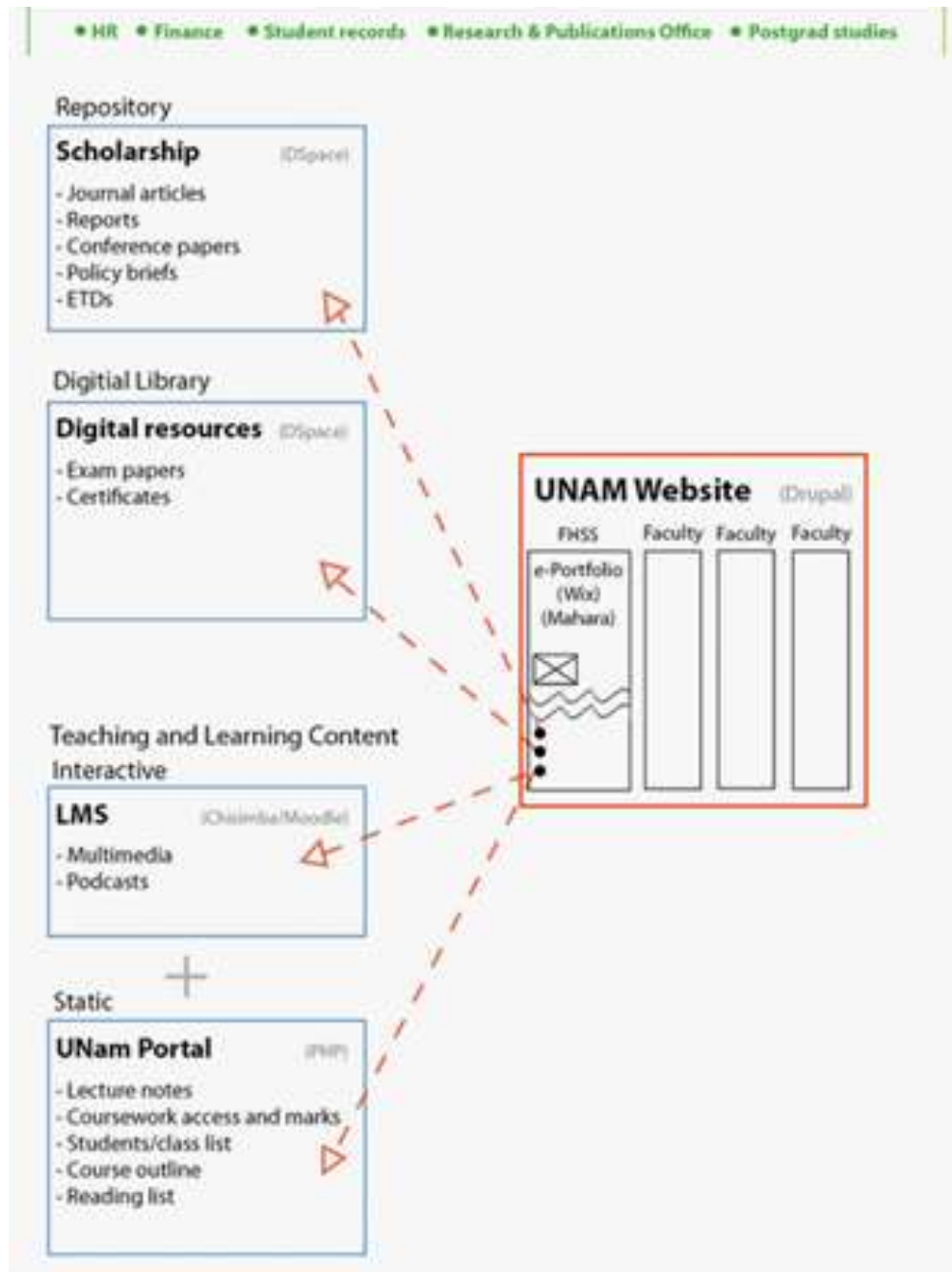


Figure 2. Current research information system (CRIS) (Source: Trotter et al., 2014).

deposit their materials to the repository. This situation mirrors an international phenomenon in non-mandated OA repository work, where deposit rates have continued to be very low.

The limited skills available also posed as a big challenge in terms of sustaining the SCAP programme after its inception phase. Trotter et al. (2014) argue that the development of e-repository or any e-infrastructure needs to be supported by developing human capacity. It has been noted that in the ever changing world of IT- and

Internet-driven communication; implementers of information and communication programmes should guard against the temptation to focus on investing more on technology and new e-infrastructure, while ignoring the human capacity development. It is important to make sure that university personnel placed in new scholarly communication roles should not only receive the training required to provide new services to the academic community, but also that they should have a sense of purpose and scope of the work they are doing.

Conclusion

The responsiveness of UNAM in correcting their previous mistakes which they encountered with their initial repository and addressing its scholarly communication challenges through the SCAP programme shows that the institution will be able to leverage its cultural, technological and policy attributes and thereby being able to make significant contributions to regional scholarship and national development. It is envisaged that the scholarly communication through UNAM's IR and e-portfolios will open access to UNAM-wide research since the OA platform will remove a number of obstacles such as subscriptions, licensing fees, pay-per-view fees, copyright and licensing restrictions.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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