Seeking Impact and Visibility

Trotter, Henry, Kell, Catherine

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Chapter 6
The SCAP implementation initiative

SCAP's research design called not only for the collection of data from our various pilot sites, but the active stimulation of them through customised implementation initiatives (or "interventions") that sought to improve the state of scholarly communication within them. Five principle assumptions underpinned these initiatives. They would:

1. be treated as experiments
2. address a challenge articulated by project participants in pilot sites and other institutional stakeholders
3. be publishing-oriented, addressing content profiling and dissemination through new tools and technologies
4. utilise open approaches (including open source software and publishing platforms) wherever possible
5. yield insights that could be extrapolated to the rest of the institution, developed in line with current institutional strategy, e-infrastructure and international standards and protocols around interoperability.

SCAP scoped and fulfilled the implementation initiatives during our four site visits to the institutions. The first visit aimed to surface the contradictions in the scholarly communication ecosystem, while the latter three visits sought to create consensus about the nature of the initiative, identify stakeholders and policy frameworks, and implement the agreed-upon pilot process.

While the formulation process was participatory, the principal investigation (PI) team played a considerable role in interpreting and translating the desires of informants into a feasible intervention. This was due to two factors. First, while informants had a clear sense of institutional challenges, they were often unable to articulate desired solutions to them because they were unaware of the new technologies that might overcome these challenges. Second, the PI team also had the responsibility of protecting the funder's interests and ensuring that the implementation activity adhered to OA principles.

In this chapter, we examine the process and results of our implementation initiatives at the four pilot sites. We do so by identifying scholarly communication challenges at each

site, determining the focus of our interventions, putting the initiatives into action and considering what lessons were learned through these engagements.

UB Department of Library and Information Studies

The Department of Library and Information Studies (DLIS) served as the SCAP pilot site for implementation activity at the University of Botswana (UB). This was located within the broader Faculty of Humanities (FoH) which served as our main research unit concerning scholarly communication practices (as discussed in Chapter 5). We chose to work with DLIS because the administration had identified it and its 18 faculty members as engaged with some of the issues in which we were interested.

When we contacted DLIS and the broader UB community through a series of presentations, workshops and interviews in early 2011, the institution showed signs of having engaged with the open access debate and of developing a strategic engagement with scholarly communication practice, infrastructure and policy. UB had already established the University of Botswana Research, Innovation and Scholarship Archive (UBRISA)[123] institutional repository (IR) in 2009 which had a content focus that was in line with the SCAP approach of profiling a broad range of scholarly outputs, including "journal articles (preprints and post-prints), conference and seminar papers, technical and research reports, books and book chapters, data sets, images and audio visual material, research lectures, PhD and masters theses and some 'special' archive collections" (UB 2008c: 5). Moreover, "all content will be made available on an open access [OA] basis unless there are specific reasons and circumstances necessitating the restriction of access to the full text" (UB 2008c: 5).

Complementing this e-infrastructure was a number of policies and guidelines that aimed to regulate and promote research communication activity. Many articulated the need to utilise dissemination as a means of addressing local development imperatives. The University Research Strategy (UB 2008c: 6) states:

> *A new emphasis will be given to the impact of research on the wider society and the goal of ensuring that research has tangible public benefits, so that wherever possible new knowledge is turned into action, innovation, products or services. Thus encouragement and incentives will be given to research proposals that clearly specify how dissemination and application will be undertaken and impact achieved … The establishment of the digital research repository will provide scholarly access, visibility and usability to the University's research output.*

Challenges

While UBRISA and a scholarly communication policy framework were in place, academics, librarians and managers expressed a number of concerns about the scholarly communication environment during SCAP's first site visit.

123 UBRISA available at: www.ubrisa.ub.bw/

Quality

Key among these was the lack of publishing options and channels. At the time there were eight institutionally affiliated journals, of which many were published infrequently (once a year, or less) or were perceived by the staff as being of inconsistent quality. This concern for quality was central to SCAP's partnership with UB, and was even spelled out in the University Research Strategy (UB 2008c: 5) which states that, "The Office of Research and Development will continue to develop strategies for encouraging publication and promoting research quality assurance." Indeed, the UB Department Research and Publication Committee (DRPC) Terms of Reference (UB 2009a: 1) was issued as a response to this policy directive and articulated a process through which departmentally based committees would be formed to "facilitate and promote basic, strategic and applied research of the highest international quality within the Department." Two of the core functions of these committees included ensuring:

- peer review of proposals, research reports, conference travel and other outputs from the Department
- mechanisms for the approval and uploading of Departmental outputs onto the Digital Repository

But when SCAP started its engagement with UB, this process had never been put into action in any of the university departments. Because of this, many scholars reluctantly sent their research to be published outside Botswana because they felt that "at international level, quality is assured." They understood that this choice inadvertently reinforced the challenges of building quality into local publishing enterprises, with one lamenting that "we [UB academics] undermine our own excellence." Even worse, they sensed that this compromised the confidence that the government had in local research.

Open access

The UB pilot participants agreed that additional publication channels were required, leading them to favour the idea that SCAP's implementation initiative should focus on the development of an information management and library science journal within DLIS. One of the problems, however, was that not everyone agreed that such a journal should be open access, one of the key conditions of SCAP's engagement with the department.[124] While university managers tended to agree that "there is no doubt that open access is the way to go," DLIS academics were more cautious and worried "that they will be giving their knowledge away to the world" without any benefit accruing to themselves.

Resources

For the most part, academics felt that the UB library was well-resourced. But for the PI team – located at UCT – this high level of reported satisfaction with the university's library resources was difficult to reconcile with our knowledge that UB had only recently adopted the research mission[125] and that, compared to other, more established research

124 This hesitation about open access is discussed in greater detail in Chapter 5 where it is revealed that 25% of our FoH survey respondents either disagreed with or were unconvinced of the merits of open access publishing.

125 The UB Research and Development Policy was articulated in 2002, but consists primarily of aspirational statements, not an operationlisable plan for achieving it. Only in 2008 was the more comprehensive University Research Strategy ratified by the UB Senate.

universities in the region, its resources appeared quite small. So why did the UB scholars think their library resources were adequate? During our research, survey responses and interviews revealed that most UB academics engage in interpretive or derivative research, meaning that they do not require vast amounts of empirical data, but can rely largely on secondary or review literature (and any other data that they may have gathered from earlier in their careers, such as through their PhD dissertation research). In this context, they considered their library holdings as adequate. However, it is likely that, over time, the level of resources will need to grow as scholars embark on more original, empirical research, in line with an enlarged research mission.

Gatekeeping

Many scholars and librarians also identified the main UB website as being inadequate for profiling content, existing more to serve the management's objectives than those of the academic staff members and students. Academics complained about gatekeeping practices that made it impossible for them to have any input into the content that appeared on the website, and as a result felt that it did not speak to their own profiling needs. In a global context where the internet is seen as the predominant mechanism for information exchange, the UB website was seen as limiting scholars' visibility.

Buy-in

Lastly, academics complained about UBRISA because of long lag periods between content submission and deposit. Though the IR had been operating for two years by the time of SCAP's first visit, it was struggling to achieve a critical mass of outputs because of mismanagement and scholars' resulting lack of buy-in. One senior academic claimed that the content she had submitted more than a year earlier had still not been uploaded onto the repository, nor had anyone bothered to acknowledge receipt of her item. Because of such experiences, the UB scholars we interviewed believed that they were justified in resisting this administrative initiative because they saw it as a marketing exercise by the management, not something that would provide the academics with any real benefits.

Implementation focus

DLIS participants suggested that SCAP's intervention should support the development of a new journal produced from within the department called *Infotrends: An International Journal of Information & Knowledge Management.* DLIS had published the first (print only) issue of *Infotrends* in 2011 just as the SCAP pilot scoping process was getting underway. Facing uncertainties around financial and editorial sustainability, DLIS hoped that the SCAP initiative could bolster the journal and give it an electronic presence. In the wake of the first site visit, the SCAP PI team explored various options for how it might utilise UB's Open Journal System (OJS) set-up and establish a workflow process that ported content directly into UBRISA upon publication. However, despite our shared enthusiasm for this proposal, it had to be abandoned when it later emerged that the journal was not recognised by UB's Office of Research and Development (ORD) on its official list of UB-accredited journals, the founding editor-in-chief had departed, and the journal had no business model or publication plan in place to proceed to a second issue.

We therefore recommended that our intervention focus on piloting a sustainable workflow process incorporating quality assurance (QA), copyright clearance and uploading procedures so that more UB research could be profiled on the IR. This was in line with the UB Digital Repository Policy (UB 2009b: 8) which states that, "realisation of the UBRISA requires institution-wide effort, mainly at departmental levels where submission and management of collected research output will first occur. Ideally, senior academics should be appointed as collection manager(s) and reviewers(s) at each point of submission, which is the Department."

We proposed that DLIS select 20 research outputs from its faculty members to put through a process – involving QA, intellectual property clearance, repository deposit and content description/indexing – for uploading onto the repository.

To support the initiative, SCAP hired a South African-based libraries and metadata expert with experience in institutional knowledge management processes while the PI team drafted a QA workflow process that could be appropriated for pilot purposes. The resulting proposal was constituted by four phases.

Phase 1: Articulation of concept and gaining buy-in of institutional stakeholders

SCAP's institutional grant was utilised to bring on board a DLIS content coordinator (CC) to liaise with ORD, DLIS and UBRISA in order to coordinate the initiative locally. The CC was to get academics' buy-in to the initiative and ensure that the interests of all relevant parties were represented, and that institutional policies and protocols were adhered to. The CC was additionally responsible for articulating and managing the content workflow from submission through review and, ultimately, deposit in UBRISA.

Phase 2: Establishment of the DLIS Research and Publications Committee (DRPC)

It was proposed that DLIS establish its DRPC, as called for in the University Research Strategy Terms of Reference document. The DRPC was to be responsible for identifying the minimum 20 resources, putting them through a QA process and supporting the CC in liaising with authors.

Phase 3: Content initiative

The CC was to work with DLIS academics to identify 20 scholarly resources to go through the QA and IP-vetting process, as administered by the DRPC. The CC was to give regular feedback to the PI team so that it could monitor the results of the initiative and incorporate these changes into the final proposal given to UB which, it was hoped, would be scalable and implementable by other UB departments in the long term.

Phase 4: UBRISA deposit and metadata capture

Once content had been cleared for exposure on the IR, it would be published via the repository and the DLIS CC would work with the UBRISA manager, the PI team and the SCAP consultant in articulating a suitable process for future content deposit and description. In articulating this framework, there were three principal areas of concern:

- DLIS academics and managers might be reluctant to participate given the additional workload this process entailed and the fact that the previous proposal (to publish *Infotrends*) had been abandoned.
- The late proposal change might mean that our results were not meaningful due to a lack of time to pilot and monitor results.
- IP and third-party copyright considerations constituted a significant challenge in terms of sharing multiple genre outputs, requiring the DLIS pilot to follow best practice and adhere to local and national policy in this regard.

Despite these concerns, DLIS and the PI team embarked on the pilot initiative, the results of which are discussed below.

Implementing the initiative

Implementation activity was comprised of three steps: identifying resources for submission, the DRPC review process and the deposit of content to the UBRISA team.

Step 1: Identifying resources for submission

The DLIS pilot process got underway in October 2012 with the appointment of content coordinator (CC). He was a senior academic in the department, a former university librarian (at the main library and one of the satellite campuses), a regular participant in SCAP workshops and passionate about raising the visibility of DLIS research.

The UB CC started by requesting that the DLIS HoD circulate a memo to DLIS academics enjoining them to cooperate with the efforts of the CC and the SCAP initiative. He and the PI team understood early that it was important to involve the leadership structures in such initiatives if they were to be taken seriously by the academic staff. Thereafter, the CC embarked on a door-to-door campaign to engage the 18 members of the department in one-on-one meetings. This exercise generated the submission of 15 outputs: 11 journal articles with single or joint authorship and four reports or commissioned works. (This was fewer than the 20 outputs that we had originally hoped for, but due to time constraints, we agreed that 15 outputs would still be suitable for our purposes.)

Step 2: The DRCP content review process

The five-member DRPC then met in October 2012 to review the 15 resources, at which stage the CC briefed members on requirements of the pilot initiative and introduced them to the principles of SCAP's proposed QA process. According to this QA model, reviewers were asked to assess outputs according to three key criteria: methodological rigour, logical coherence and completeness. The process was meant to be transparent and light, with review duties done in rotation so that no one would be burdened in an unsustainable fashion.

The 15 pilot outputs went through a single review process (sometimes "blind", sometimes not, depending on the preference of the reviewer). Reviewer reports were sent to the CC, who then communicated their commentary to the authors. The PI team monitored this feedback process and found it to be thoughtful and robust, suggesting that

DRCP members saw this QA process as an opportunity to mentor some of the younger staff members through serious intellectual engagement.

However, in some cases, where the CC judged the comments to be too "blunt" (meaning that the tone communicated in the comments did not match the tone intended by the otherwise supportive reviewer), the CC used his discretion to "massage" some of the language of the comments so that the author did not feel attacked or upset by this (unremunerated) process. Though the PI team had not anticipated how important it would be for the process to be sensitive to authors' feelings, this ended up being crucial for one key reason: scholars were not obligated to participate in this QA process, thus if it to were to remain sustainable, they had to feel supported by it, not diminished.

In cases where a reviewer rejected an output for uploading, the output was to be sent to a second reviewer. Should the second reviewer also reject it, the authors would be given the opportunity to reassess it and resubmit it at a later date. But in cases where the second reviewer disagreed with the first reviewer (approving it for publication), the DRPC and CC would together make a decision about whether to submit the resource to UBRISA.

The collection and review process concluded in February 2013 with 15 outputs successfully reviewed – a significant achievement given the short time period. There were no cases of outright rejection, but where only minor revisions were required, authors made those revisions. However, due to the fact that no reward is given to those who publish their outputs in UBRISA, the authors of the two papers that required significant corrections did not bother to make them. Of the 15 outputs that were received, all but two were ready for submission by March 2013.

Step 3: Content deposit in UBRISA

Technically, this was where SCAP's implementation activity ended, with the delivery of quality-assured outputs to the UBRISA manager in the UB library. To that extent, the pilot implementation was a success. Unfortunately (as of time of writing), the final step in the actual deposit and uploading process – handled by the UBRISA management team in the library – had yet to occur. More than three months after the CC submitted the objects to the library, the outputs were still not uploaded onto UBRISA.

When the CC queried the library team why there seemed to be a delay, he received two different explanations. One was that UBRISA was "down" and that nothing could be uploaded onto the server. This indeed appeared to be the case at times, at least from the erratic presence the website had when SCAP periodically checked on it. On some occasions, the web page showed a "server error", suggesting technical difficulties. However, this appears not to have been a permanent state of affairs, but rather an occasional occurrence (similar to the periodic losses of electricity at the university).

Another library official offered a more revealing explanation, stating that s/he did not believe that it was appropriate to upload materials onto UBRISA that had "only" gone through a QA process run by the authors' immediate peers in their departments, suggesting that this might cause a conflict of interest and that it was not "blind" enough. Thus

s/he would not upload them until s/he had received approval from a higher authority than the CC and the DRPC. This response is revealing for four reasons:

- The librarian's statement directly contradicts the UBRISA workflow policy which identifies the department as the level at which an author's object gets quality assured, suggesting that s/he was either unfamiliar with these particular aspects of the policy or disagreed with them (UB 2008b).
- The librarian amplified his/her role as a UBRISA gatekeeper, withholding services based on a putative concern for quality that goes beyond his/her remit.
- Scholarly communication is not a politically neutral act. The library team has, for the last four years, been entrusted with identifying and "harvesting" UB scholars' journal articles and profiling them on UBRISA.[126] With the development of the QA process, in which departments are able to submit materials themselves, the importance of the library team would be correspondingly diminished. It would no longer control all facets of scholarly communication through UBRISA, but would be reduced to playing a more facilitative role. This power change is not insignificant.
- This exemplifies one of the key findings offered in this study about scholarly communication at UB, that while the university has made great progress in *articulating* useful scholarly communication policies, it has been less successful in *implementing* them, precisely because of disjunctures like this in what should be a coordinated process.

Unfortunately, experiences like this seriously erode UB scholars' confidence in UBRISA, making them want to avoid it. Many scholars expressed dissatisfaction with their interactions surrounding uploading materials to the IR, and this departmental experience appears to reinforce that perception.

Lessons learned

While this pilot initiative was located in a single academic department, the issues surfaced pertain to the entire institution, specifically as relates to the question of how to articulate institutional workflows for the profiling of a wide range of content outputs via an IR. Through this activity, SCAP was able to test a number of assumptions about QA workflow processes within the UB institutional context. The lessons that we learned about the process include the following:

126 To start the process of populating UBRISA, the library team initially "harvested" UB scholars' articles from journal publishers' websites and then uploaded them onto the IR, but in a slightly altered format. Unfortunately, this harvesting process was inefficient (and legally problematic). It was inefficient because it required library staff to search online for scholars' outputs themselves rather than to rely on scholars to submit them themselves. It went against best practice because many of the outputs were saved in formats that did not allow for search engines to crawl the text and identify them during searches. And it was likely illegal because many of the articles went through a "scrubbing" process, in which UBRISA members downloaded UB scholars' articles from publishers' websites, photocopied them while blanking out the copyright information on the article, and then re-presented them on the IR as if they were open access files. This process was not based on negotiation with or permission from the publishers, but more on convenience for the library team. Given the lack of participation by UB scholars, the UBRISA team's actions were understandable, though not sustainable or desirable. The workflow process needs to be revised going forward.

Lesson 1: Because UB FoH scholars do not see the value that UBRISA brings to them directly (either through increased citations, financial reward, etc.), they feel virtually no incentive to submit their outputs to the IR. This sentiment also determines the amount of energy scholars are willing to expend in revising an article that has gone through a QA process: where small revisions are required, scholars are likely to make the effort; where large revisions are required, scholars will not bother to make them.

Lesson 2: Scholars must be given financial, temporal or symbolic incentives for consistently contributing their outputs to the IR. They must be rewarded not just for publication (as they are currently are), but for broader dissemination activity (that is, ensuring that their outputs are also profiled on the UB IR).

Lesson 3: Academic departments and faculties can serve as powerful and efficient quality assurance entities. For them to remain sustainable, the workloads of the CC and DRPC will have to be relatively light (given their other commitments) and incentivised (with either PMS points or financial rewards).

Lesson 4: The success of the DLIS QA process relied on the motivation and wisdom of the content coordinator, who not only spent significant time trying to obtain the requisite number of outputs to put through the pilot process, but ensured that the experience was a positive and supportive one for the participating scholars. This required substantial time, interest and knowledge of the departmental environment.

Lesson 5: The UBRISA management team does not have the time, resources, incentives or capacity (yet) to run the IR in an efficient and responsive manner. The UB administration has assumed that IR management activities could be simply added to librarians' other duties, thus underestimating the IR's temporal and capacity requirements. For UBRISA to live up to its potential, it will have to be overseen by a staff member for whom it is the top, or only, priority.

Lesson 6: Any intervention into a scholarly communication ecosystem is fraught with political consequences. Even if the initiative serves to enhance scholarly communication, it may positively or negatively affect various stakeholders' positions within that ecosystem, creating new obstacles and challenges.

Lesson 7: The QA process opens a space for structured mentoring between senior scholars on the DRPC review panel and the junior scholars submitting their outputs for review. This presents a major opportunity for the university to strengthen its research culture.

UCT Southern African Labour and Development Research Unit

While the Faculty of Commerce served as SCAP's research site at UCT, the Southern African Labour Development Research Unit (SALDRU) served as our pilot site for implementation activity. As a highly regarded independent research unit which draws its members largely from the Economics Department, it offers a unique vantage into a "mode 2" academic entity (Gibbons *et al.* 1994) within the university. It is one of many at UCT, thus we hoped that our engagement with it would offer insights of value

not only to other comparable units, but to other departments and faculties across the institution.

In 2010, SALDRU underwent an external review (one year prior to the SCAP engagement) in which one of the critiques levelled at it was that it lacked online visibility. While the unit had a well-designed and functional website, it was falling short in terms of detailed search functionality and ease of use in content navigation. SALDRU's problem of online "findability" was compounded by the fact that, as a research unit tasked with engaging government and civil society in the poverty alleviation debate, it produced a wide range of outputs besides journal articles and book chapters (content that would traditionally be available through publisher websites) that were largely invisible online.

Challenges

The unit identified three main areas of activity that they felt could improve their scholarly communication:

- *Make content more accessible*. SALDRU had a great deal of research output to its name, but it was not visible on the internet. Even on the unit's website, content was often difficult to find. An important sub-component identified within this was the need for standardised staff profile pages. At the time, some staff members had profiles while others did not; some also shared varying kinds of content via their profile pages but this content was not centrally curated and was therefore not searchable. The sharing of content appeared haphazard.
- *Produce more popular writing about the unit's research*. This was a particular challenge in the SALDRU structure given the diffuse nature of the unit and its egalitarian management style. There was thus an absence of hierarchy-based managerial entities that could function as the "official mouthpiece" of the unit. This made delivery of a cohesive "SALDRU perspective" on a policy issue a challenge.
- *Boost informal communication amongst the SALDRU community*. Given the unit's cyclical grant funding structure and fluctuating staff cohort, the unit required a more regular internal communication system so that staff could be kept aware of the work in which their colleagues were engaged.

These activities were identified as allowing the unit's work to have a greater public impact. Participants in the first SCAP workshops highlighted the fact that, even though they wanted the unit to have a stronger public impact, this objective was not even reflected in its mission statement. Participants felt that this would need to be incorporated into the formal mission to shape and reflect the scholarly communication strategy of the unit.

During our research, SALDRU was one of 71 UCT-affiliated research units conducting work in a wide range of often niche and inter-disciplinary areas. These units enjoyed varying levels of support from the university administration, and while those units situated on any of the UCT campuses would receive the standard IT service provision afforded to the rest of the university, few (if any) received any centralised support aimed

at addressing content curation and visibility. SALDRU's challenge was therefore not unique, but a shared feature of many units, departments and faculties.

This problem was made more acute by the fact that UCT did not have an IR at the time of the SCAP initiative. If it had had this type of infrastructure, it would have provided an avenue for units such as SALDRU to profile their work online. The absence of an IR was, however, not identified as an explicit challenge by SALDRU participants because they had for some time been profiling their research via the Research Papers in Economics (RePEc) site, an online content aggregator designed to enhance the dissemination of research in economics. In the minds of many SALDRU members, they already had a repository in RePEc, a fact which accorded with their own disciplines, norms and practices. This, combined with the fact that they hosted and administered their own website, meant that they did not look to centralised institutional e-infrastructure for scholarly communication opportunities.

Implementation focus

Based on the input of SALDRU members, the PI team proposed a pilot intervention process comprising three core objectives, to:

- improve content curation to address the findability of SALDRU resources via internet search engines and the unit's website
- establish a round-table forum for developing an organisational perspective on policy issues and experimenting with various methods for engaging with policy discourse in a more coordinated manner
- develop internal communication tools (with particular focus on the website and an electronic newsletter).

Increasing findability and visibility through improved content curation

In an investigation into the online visibility of South African poverty alleviation work, Czerniewicz and Wiens (2013) found that much of it was comparatively invisible because it lacked metadata and IR connection that the more visible work enjoyed. This exemplified the importance of the relationship between research, publication, content curation and social development.

Our preliminary investigation indicated that there was a significant amount of SALDRU content online, but that it was hosted in disparate locations and poorly indexed. Thus, SCAP resources were utilised to bring a part-time content architect from UCT's Digital Libraries Laboratory (a postgraduate research unit in the Computer Science department) to function as an intermediary in translating the desires of the community, assess the affordances of current e-infrastructure and work with SALDRU stakeholders to implement new curatorial systems and processes. The content architect would also be tasked with ensuring that systems were as open and interoperable as possible.

This desire for interoperability not only revolved around linkages to international content aggregators and indexing services, but to institutional e-infrastructure and content services. SCAP saw itself as having an important role in brokering this improved cohesion, as SALDRU members appeared disenchanted with institutional systems

(according to their statements in the change laboratory workshops) and were reluctant to pursue any strategy that would make them beholden to institutional systems, particularly with regards to IT service provision.

Despite this legacy of disenchantment based on prior experience, SCAP re-opened the dialogue between SALDRU and the central ICT services based on the notion that the preservation and sharing of content via secure, institution-based infrastructure that could then be linked and shared elsewhere was preferable to the investment in building content collections with third-party organisations. The issue of depositing content in external or discipline-specific repositories such as RePEc would therefore be examined.

Intervention: OpenSALDRU

With the above objectives in mind, the SALDRU content architect was brought on board to conduct a situational analysis, to provide content description and indexing and to explore mechanisms for content profiling via the new content curation system.

Phase 1: Situational analysis

Because SALDRU had already been producing a wide range of outputs for over 20 years by the time SCAP engaged with it, it had accumulated a number of curatorial systems and e-infrastructure mechanisms to handle these outputs. There had been no prior imperative to deal with this strategically, therefore these systems had been developed in piecemeal fashion over the years, with certain areas functioning better than others. The presence of existing systems had the potential to be a positive factor in that legacy systems could serve as a foundation for new tools and operational systems; it could also prove to be a hindrance in that user communities might be invested in previous systems out of habit, making them reluctant to move to new systems, despite their benefits. As much as possible, SCAP wanted the pilot initiative to leverage the affordances of existing systems and e-infrastructure, and also to work with current stakeholders invested in those systems so that they felt a sense of ownership in the new process. The buy-in of the SALDRU community was seen as crucial in terms of ensuring that this remained sustainable beyond the duration of the SCAP intervention.

Our situational analysis revealed that the SALDRU website was run from the Joomla platform integrating a document archive (DocMan) that was used to store, manage and facilitate access to research publications. Five critical shortcomings were identified:

- Inconsistencies in how representational information was presented for collections
- Lack of use of controlled vocabulary for metadata elements such as author details and publication date (which generally led to inconsistencies on the front end)
- Absence of interoperability. Other than integration with RePEc, there appeared to be no provision for other machine-to-machine interoperability mechanisms such as the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)
- Insufficient metadata exposure. Important metadata elements such as author details were being embedded as hypertext mark-up language (HTML) elements rather than data in discreet fields. This would generally make it difficult to implement a browse feature

- Inadequate information discovery tools. Specifically, the search features associated with the website were rudimentary, and the lack of a corresponding browse feature limited the ease of finding information.

The purpose of the situational analysis was to derive a set of recommendations and a process for addressing Phase 2, content curation. But in order to proceed, we had to decide which content platform to use. The Joomla platform that was being utilised by SALDRU was a content management system (CMS), a tool for web-based content curation and sharing. But SALDRU's research-specific needs called for more control around metadata and preservation, which we thought was better handled by a DSpace repository system. DSpace is a free and open source repository platform that is currently regarded as the industry standard in repository software. We arrived at this determination after the content architect evaluated the suitability of the CMS (Joomla) versus the repository (DSpace) approach.

Table 6.1 Comparison of CMS vs repository benefit for SALDRU content curation

Feature/Attribute	Repository (DSpace)	CMS (Joomla Plugin)
Interoperability	OAI-PMH, OpenSearch, RSS, SWORD	Limited via RSS feeds
Metadata management	Flexible and comprehensive metadata scheme(s)	Limited metadata elements
Preservation	Standards-based metadata schemes	Free-form descriptive metadata
Resource discovery	Advance searching and browsing, with faceted features	Basic search available

Based on the outcomes of the evaluation exercise and consultation with institutional stakeholders, curation experts and SALDRU, our situational analysis concluded with a decision to invest in a repository-based system for the implementation initiative. Thus we started by replacing the Joomla CMS with a DSpace repository.

Phase 2: Content description and indexing

A significant amount of pilot activity was spent building the SALDRU DSpace installation. While its development can be undertaken in a matter of days or weeks, the process of engaging with SALDRU in its conceptualisation and design so that it reflected the nature and structure of the unit's work, was time-consuming. We decided that, while the DSpace instance would remain on local hosting infrastructure operated by SALDRU-appointed staff, its development would take place in line with institutional systems and policies. This was to ensure maximum interoperability with institution-based visibility-enhancing initiatives.

Phase 3: Explore mechanisms for content profiling

Once the DSpace platform was installed, the content architect consulted with SALDRU to develop a comprehensive set of metadata elements that would be used to identify the digital objects. This was done in line with the *Journal of Economic Literature* (JEL) classification codes used by RePEc and other economics content aggregators. This was important for maintaining interoperability with the RePEc portal and operating within disciplinary norms and standards pertaining to content curation. Following an extensive consultative process to articulate the metadata schema, content deposit could begin.

The process culminated in the launch of the OpenSALDRU[127] DSpace 1.8.2 repository in April 2013. At the time of writing, Apache Tomcat 6.0 was being used as the Servlet Engine, with PostgreSQL as the back-end database management system. The content architect based the site's appearance on the Mirage theme ("Mirage Configuration and Customisation") in collaboration with SALDRU content curation staff.

Intervention: Round-table policy forum

The first change laboratory workshop identified that the unit wanted to produce popular writing about its research in order to access policymakers and non-academic audiences, and to be able to develop consolidated policy perspectives for sharing with the public. As a first step in achieving these objectives, it was proposed that SCAP pilot activity incorporate a trial of a round-table forum on a pertinent issue on which there was a need for policy discourse. It was suggested that this process be piloted by choosing a topic central to the current SALDRU research agenda, aggregating results from the research it has produced in this area, deriving conclusions, producing policy recommendations (if necessary), and writing something in the form of a policy brief or press release.

Subsequently, the SCAP research coordinator facilitated further exploration of the concept by identifying the topic of teen pregnancy as a focus for the process. This would be undertaken in collaboration with a scientific writer who would participate in the round-table and produce a series of outputs in line with a SALDRU brief. The writer would ideally have familiarity with the subject and policy environment, though not be a SALDRU member.

Table 6.2 Phases in the SALDRU pilot round-table process

Activity	Description
1. Constitute a working group of SALDRU specialists in subject area	Research coordinator identifies stakeholder in the SALDRU community and invites participation.
2. Bring writer on board	SALDRU research coordinator identifies writer, briefs and commissions work.
3. First round of consultative interviews	Writer interviews working group for foundational perspective.
4. Round-table logistics finalised	• Date set • Panel convened • Venue arranged
5. Round-table meeting held	Closed, three-hour event, recorded for transcription.
6. Writer produces report proposing outputs (ideally to include press release, popular media article, policy brief, op-ed)	These ideally to include: • Conclusions of round-table forum • Policy recommendations
7. Outputs prepared	Syndication of outputs to produce a suite of materials for articulated purpose/audience.
8. Outputs used as trial	Showcases range of outputs on website in line with developments taking place in parallel stream of SCAP activity.

127 OpenSALDRU Repository, available at: http://opensaldru.uct.ac.za

The round-table process was initiated in November 2011 and completed by mid-January 2012. The final output was a policy brief called "Revisiting the 'crisis' in teen pregnancy: What is the impact of teen births on young mothers and their children?"[128] The process was completed with the assistance of an external team comprised of a scientific writer and designer based at another UCT-affiliated research unit – the Children's Institute – who had experience in producing policy briefs. Their expertise was central to the speedy completion of the exercise and the professional nature of the end product.

This activity represented a first layer of exploratory activity, with the feasibility and value of the endeavour being evaluated for case study purposes. While it was the unit's ambition that fora such as these be replicated in the future, the primary value of this foray was to track what resources were required and identify factors influencing success or failure in this domain. There are other areas that will need to be explored in order for the unit to further its experimentation with the popularisation of its research.

Intervention: Internal communication tools

Many SALDRU members noted to us that the unit's large, distributed, inter-disciplinary staff contingent made for a highly dynamic group, but one whose members struggled to communicate with each other regarding day-to-day SALDRU activity and research interest. Because of this, the unit proposed that SCAP pilot activity incorporate exploration of internal communication tools to enhance internal communication, specifically through an electronic newsletter. It was hoped that the newsletter could also play a marketing role and provide a means of communicating with the broader SALDRU community.

Lessons learned

While this pilot initiative was located in a single academic unit, the issues surfaced pertain to the multiple areas of the institution, specifically as relates to the question of how to articulate institutional workflows for the profiling of a range of content outputs via a unit-level content repository. The lessons that we learned about the process include the following:

Lesson 1: Because SALDRU has been producing a wide range of outputs for more than two decades, it has accumulated a number of curatorial systems and e-infrastructure mechanisms to handle them. Since there has been no prior imperative to deal with this strategically, these systems have been developed in a piecemeal fashion, with certain areas functioning better than others. Enhancing the visibility all of those outputs going forwards requires that they fall under a single, cohesive strategic curation and profiling system.

Lesson 2: In the absence of an institutional scholarly communication policy or platform, this pilot demonstrates the possibility of promoting decentralised dissemination models while providing an indication of the personnel investment required. In SALDRU's case, this called for the creation of a communications officer position.

128 Menendez A, Branson N, Lam D, Ardington C & Leibbrandt M (2011) Revisiting the 'crisis' in teen births: What is the impact of teen births on young mothers and their children? SALDRU Policy Brief, available at: http://opensaldru.uct.ac.za/handle/11090/7

Lesson 3: Research entities require significant internal capacity and careful coordination with institutional technical support staff in order to ensure that their communication activities adhere to institutional requirements and best practice. (This includes linking OpenSALDRU to other content-aggregating spaces and institutional e-infrastructure.)

Lesson 4: Most academics – including those at SALDRU – have varying levels of familiarity with new scholarly communication tools, technologies and practices (such as DSpace repositories), but they generally do not have the time or expertise to explore, evaluate and utilise them in a fashion that would optimise their dissemination activities. This requires specialists (such as content architects) who can advise and establish such technologies while training specific in-house staff members (such as communications officers) to maintain them.

Lesson 5: Third-party intermediaries can play an important role in helping academic entities to define a strategic approach to scholarly communication activity. Members of the SCAP team played this role at SALDRU, demonstrating the importance of engaging with the desires of the community (manifest in statements such as "we want a functioning website" and "we want our content to be findable online") and translating those into workable plans addressing content curation and scholarly communication activity.

UoM Faculty of Science

The Faculty of Science (FoS) served as the SCAP pilot site at UoM. It has consistently been one of the more prolific research-producing entities within the university, which itself is the most prolific research producer in the country. We hoped that an intervention promoting research visibility in one of the more productive faculties in the institution would provide an example to other faculties and units, promoting general visibility of Mauritian scholarship. Through our early change laboratory workshops, surveys, interviews and conversations at UoM, we aimed to establish what the primary scholarly communication desires and challenges within the faculty were. These would help us to determine the implementation initiative that we planned to pilot with FoS.

Challenges

During our research, we found that three challenges stood out for FoS members: collaboration, networks and profiles; low bandwidth levels; and low levels of existing dissemination activity.

Collaboration, networks and profiles

As discussed in Chapter 4, the Mauritian government aims for the island to become a "knowledge hub" in the region, a space characterised by dense collaboration and networking activities. This desire – which requires substantial investment in ICT – matches that of the university and FoS scholars. They recognise that virtual collaboration has become an academic norm through the globalisation of communication networks (Monge & Contractor 2003) and is crucial for future research activity in Mauritius (see Figures 6.1 and 6.2) where low numbers of scientific specialists require that they look beyond their borders for collaborative partners.

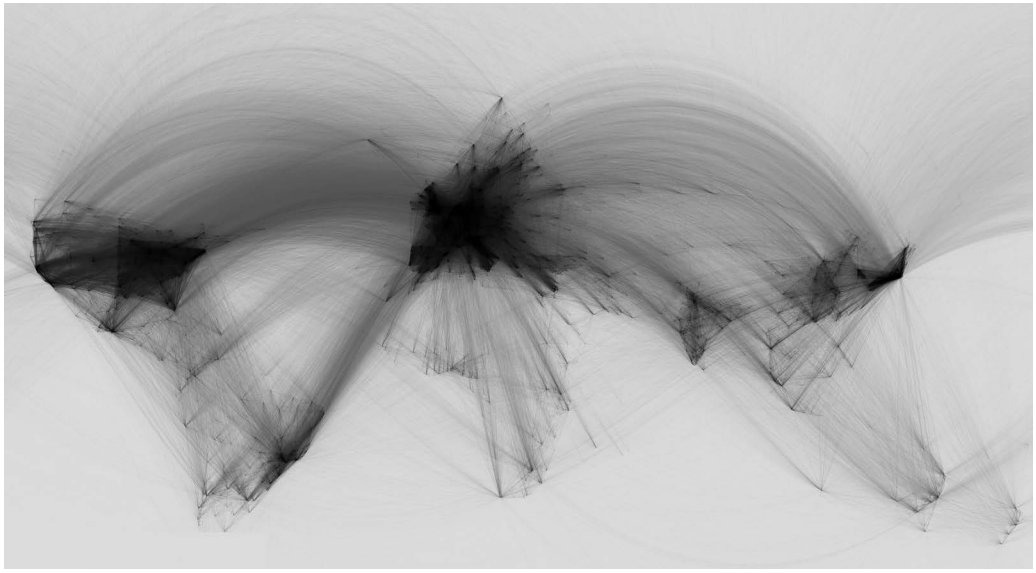

Figure 6.1 Scientific collaboration – global perspective (Beauschesne 2011)[129]

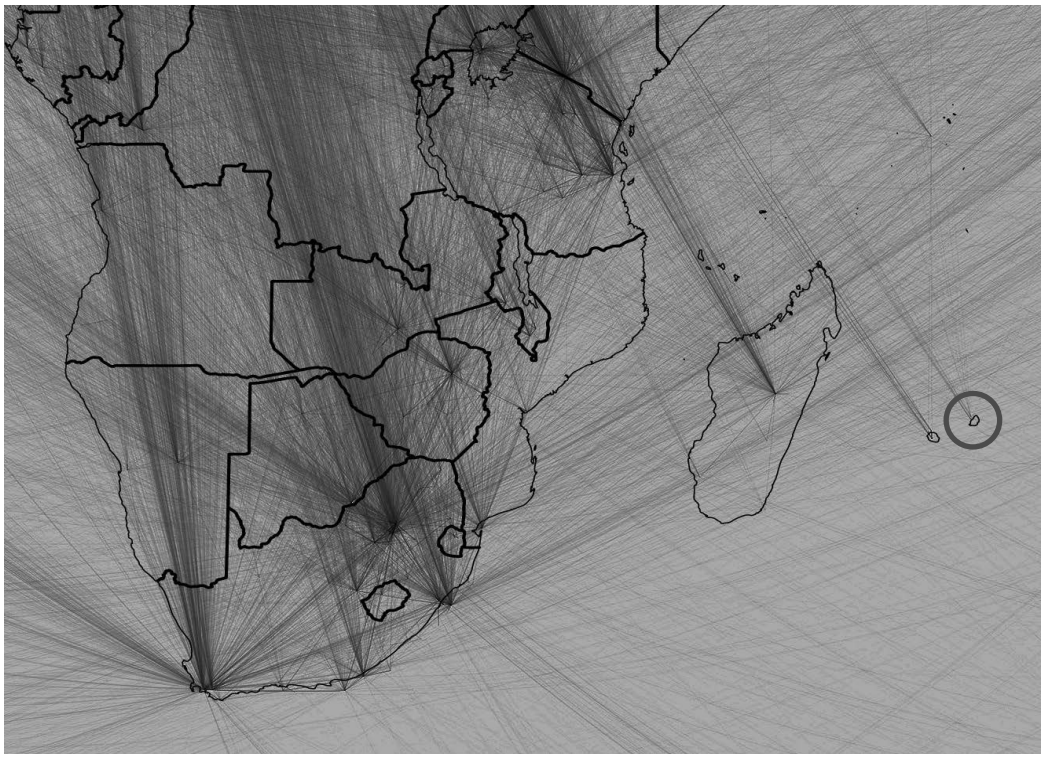

Figure 6.2 Scientific collaboration – Mauritius in perspective (Beauschesne 2011)[130]

129 Based on data compiled by Olivier Beauchesne who aggregated scientific collaboration between cities from 2005–2009 using the Elsevier bibliographic database. Olivier Beauchesne (2011) Map of scientific collaboration between researchers. http://olihb.com/2011/01/23/map-of-scientific-collaboration-between-researchers/

130 Ibid.

To be clear, collaboration occurs across *networks* of two or more people and, increasingly, is *virtually conducted* rather than face-to-face. This bears particular relevance for Mauritian scholars, given their geographic isolation and low funding for international travel. However, entry into a network is not always guaranteed or automatic; and networks are typically subject to the dynamics of the status and power relations of their constituents. The chances of gaining access to a network are typically increased if the aspiring entrant has something to offer/exchange (either to other constituents in the network or to the network itself) and if the aspiring entrant can provide tangible, verifiable credentials to confer his or her perceived value to the network (often expressed as "social capital" in the theory of social networks) (Bourdieu 1985; Lin 2001; Portes 1998).

From an academic point of view, there are five types of academic communication networks that are likely to be pursued for collaborative purposes:

1. *Academic networks*: scholar-to-scholar, for the purposes of knowledge sharing and creation.
2. *Academic–industry networks*: scholar-to-industrial partner, for the purposes of knowledge creation in the form of innovation.
3. *Academic-government networks*: scholar-to-government personnel, for the purposes of policy and development.
4. *Academic-civil society networks*: scholar-to-community, for the purposes of advocacy and development.
5. *Funding networks*: scholar-to-potential research funder (e.g. philanthropies, science councils, and national and supra-national agencies), for the purpose of initiating research projects.

Given the importance of collaboration to FoS scholars – many of whom need to collaborate with overseas scholars in order to share and compare data in their specialised fields – SCAP believed that an academic profiling exercise aimed at increasing their online visibility would assist scholars in finding collaborative partners in international research institutions, and in so doing enhance the possibility of accessing international scholarly networks. Once a network had been joined, it was hoped, academics participating in the proposed intervention would be able to collaborate more frequently and effectively with other regional and international researchers.

Limits on broadband connectivity

When SCAP initially engaged with UoM scholars, many complained about the low bandwidth that then prevailed on the island, jeopardising their research prospects and hindering the nation's desire to move towards a "knowledge economy". This situation improved during our three years of partnering with UoM, but the island's comparative bandwidth capacities still remain an issue if UoM is going to leverage its research for developmental gain. The Mauritian government reports that the ICT sector in Mauritius, until recently a nascent industry, is now the third pillar of the Mauritian economy with a GDP contribution nearing 6.8%, a turnover of USD1 billion and directly employing more than 16,000 people.[131]

131 Mauritius Ministry of Information and Communication Technology, ICT sector, available at: http://mict.gov.mu/English/AboutUs/Pages/ICT-Sector.aspx

In order to assess a typical telecommunications network, it can be divided into four parts: (1) international connectivity (typically via fibre-optic cable or satellite); (2) national connectivity (also referred to as the "backbone"); (3) the access network or "last mile" connection; and (4) the organisational network (in this case the on-campus network at the University of Mauritius) (Twinomugisha 2010).

In terms of international connectivity, Mauritius compares favourably with its SADC peers in terms of upload and download speeds (Figure 6.3).[132] However, it compares negatively to developed countries that have invested in the knowledge economy as a driver of growth and prosperity (e.g. Finland's average download speed in kbps in February 2012 was 13 times faster than that of Mauritius). Furthermore, Mauritius as an island nation remains dependent on a single cable for its international connectivity in the form of the South Africa Far East (SAFE/SAT-3) cable (see Figure 6.4).[133] This means limited international network redundancy because of the dependence on a single cable for connectivity.

Figure 6.3 Comparative international download speeds (kbps), January 2012[134]

In terms of the national backbone and last-mile connectivity, the Mauritian telecommunications sector is a duopoly of Orange (a subsidiary of Mauritius Telecom) and Emtel. Both offer 3G and ADSL connectivity to their customers.

132 See Ookla internet speedtest, available at: www.ookla.com/

133 The Lower Indian Ocean Network (LION) cable owned and operated by France Telecom-Orange (and its subsidiaries) connects Madagascar, Reunion and Mauritius, but still relies on the SAFE cable for global connectivity beyond the three island nations. LION-2 is planned for Q2 of 2012 and will link Mauritius to the EASSy cable network which makes landfall in Kenya. See: www.cablemap.info/

134 Source: Data from Net Index by Ookla, created on Google Public Data website, available at: www.google.com/publicdata/

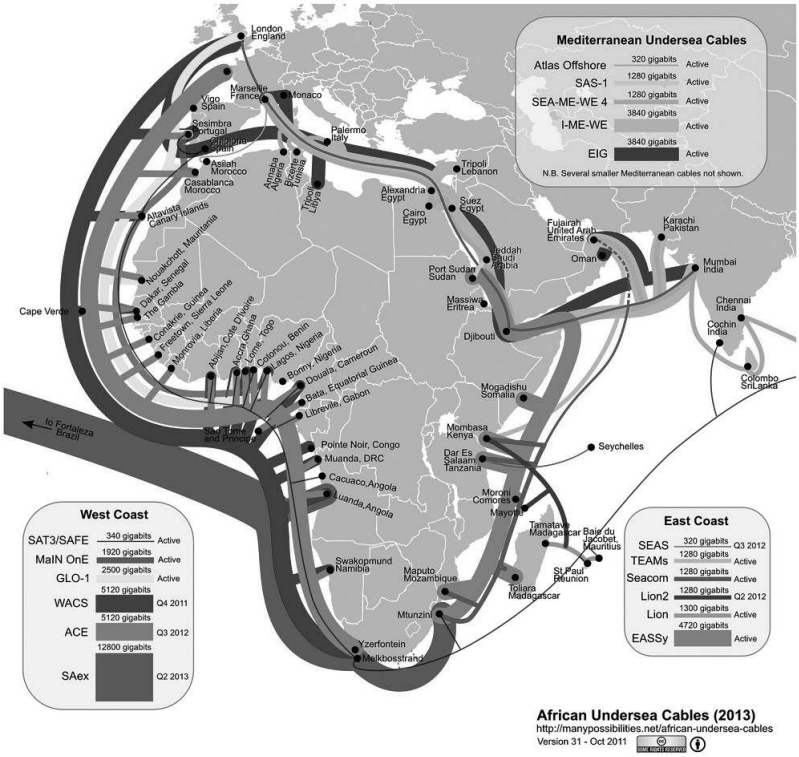

Figure 6.4 African undersea cables present and planned to 2013[135]

FoS scholars told us that, despite favourable access speeds compared to SADC peers, connectivity was not optimal at the institutional network level. The lack of computational power and limited on-campus internet broadband pose major obstacles at the university. In particular, the state of e-infrastructure inhibits collaborative research and causes delays in the production and dissemination of scholarly output. UoM's connectivity issues were especially pressing for researchers involved in high-performance computing and other intensive data-sharing research activity, common to the sciences. Some scholars indicated that they preferred to use their own personal internet connections for part of their work, due to the frustrating slowness of UoM's network.

Given the current duopoly in the Mauritian telecoms sector and the country's current dependency on the SAFE cable, what is encouraging is the Mauritian government's commitment (at least at policy level as expressed in its National Broadband Policy 2012–2020) to "to facilitate the provision of affordable, accessible, universal access to broadband infrastructure and services to promote the social and economic opportunities made available by broadband in order to ensure the best possible conditions under which Mauritius can grow further as a knowledge-based society" (Government of Mauritius 2012: 28). What is less encouraging is the absence of any policy goals to increase access at tertiary institutions – the policy document makes mention of policy goals in this regard

135 Steve Song (2011) African Undersea Cables in 2013, available at: www.flickr.com/photos/ssong/6220166808/in/set-72157625051406818. For continuous updates on the state of African undersea cables, see: http://manypossibilities.net/african-undersea-cables/

at primary and secondary schools but seems to restrict the role of tertiary education to training ICT professionals. This correlates with the claims of the Mauritian government's limited spending on infrastructural development at the University of Mauritius (Bailey, Cloete & Pillay 2011).

Low levels of existing dissemination activity

The faculty contained a number of internationally collaborative academics, many of them specialists in their fields. Due to the low absolute number of researchers and their divergent academic portfolios, an individual specialist would often be the only local expert in her or his field. Thus, collaborative networks, especially with researchers from Europe, America and India, were both desirable and necessary for academic workflow, especially with regard to multi-authored research publication, a norm in many scientific fields.

During our first change laboratory workshop, many FoS scholars questioned the value of open access publication practices because they believed they had personally been well-served by traditional scholarly communication activities. A number of scholars were already publishing in high-Impact Factor journals in collaboration with international experts. This was reinforced by the institutional performance assessment system which rewarded international publication more highly than local publishing channels (such as the *University of Mauritius Research Journal*).[136]

However, due to the disciplinary norms of some science fields, many scholars were already engaged in open sharing. They had deposited their papers in subject repositories such as arXiv[137] or were engaged in large-scale data sharing as, for example, astronomers. Thus, research and information-sharing had been a part of certain faculty members' scholarly practice prior to the implementation initiative, though they had not identified it with an OA ethic.

Implementation focus

During our first change lab in May 2011, FoS participants identified five possible areas of focus for an implementation initiative:

1. Proposing a new system for valuing research
2. Profiling research
3. Producing scholarly outputs for the broader public
4. Facilitating the development of a regional publisher
5. Developing a virtual research collaboration platform

At the heart of these proposals appeared to be a desire to remove some of the barriers created by Mauritius's isolated geographic location and to ramp up the extent to which regional and international collaboration with other researchers occurs.

136 *Research Journal of the University of Mauritius*, available at: http://vcampus.uom.ac.mu/rci/resjournal/. The journal's website refers to it as the *Research Journal of the University of Mauritius* and the *University of Mauritius Research Journal*, using both titles interchangeably. We have done the same here in this study.

137 arXiv.org e-Print archive, available at: http://arxiv.org/

Thus, we initially explored the prospect of establishing a virtual research environment (VRE) as a technological intervention. This was seen as a useful way to support scientific collaboration in the institution, both locally and nationally. We researched the prospects of installing a VRE and consulted a number of experts in this regard. We then engaged with the UoM ICT director and his colleagues on implementing a VRE, but it soon became clear that this intervention would be beyond the scope, feasibility and time frame of the project for the following reasons: there was no existing VRE expertise at UoM; the SCAP PI team did not have any prior experience with VREs; and VRE solutions are discipline-specific, meaning that it would not benefit the entire faculty, just certain departments.

We continued to explore other possibilities for addressing the needs expressed by FoS participants, and after further consultation with FoS members, we decided to implement a scholarly profiling initiative to facilitate greater international collaboration for the scholars, answering one of their key desires.

The Profiling Academics Online (PAO) initiative

SCAP's intervention focused on improving the visibility of participating FoS academics by enhancing their personal online profiles. The intervention therefore focused on profiling individual scholars and their research activities rather than the entire faculty. We did this, in part, due to the belief that empowering individual academics would facilitate a "bottom-up" scholarly communication engagement that would avoid straining the university's administration. We assumed that the institution would receive an indirect benefit from the increased visibility of its academics. In the long-term, we hoped that scholars with active online presences would be able to serve as models of networked scientific practice and act as local sources of expertise for helping other scholars to develop their own online presence.

The Profiling Academics Online (PAO)[138] initiative recommended that scholars engage with a suite of free online tools to enhance their personal visibility by creating personal academic profiles, using social media to engage with global scholarly discourse and to list their scholarly outputs. The following tools were selected based on their popularity and functionality within the international academic community, of which we asked FoS academics to those that they felt were most appropriate for their goals:

- *Mendeley* – a free reference manager and social network platform that assists academics in organising their research, collaborating with others online and discovering the latest research. Intervention: create a Mendeley profile and list all academic outputs.
- *Google Scholar* – the de facto online search engine for academic articles. Intervention: ensure that articles appear in Google Scholar search results and improve the rankings of these articles.

138 Francois van Schalkwyk (2012) Profiling Academics Online (PAO) Toolkit, available at: www.slideshare.net/scap_uct/pao-scap-toolkit

- *LinkedIn* – a networking platform for over 225 million professionals worldwide. Intervention: create a LinkedIn profile and list academic outputs as well as awards and achievements.
- *ResearchGate* – a professional network of researchers and scientists consisting of three million members. Intervention: create a ResearchGate profile and use the tools available to foster collaboration with other scientists.
- *Slideshare* – a website for sharing presentations, documents and videos.
- *Academia.edu* – a platform for academics to share research papers. Over 4.6 million scholars use Academia.edu to share their research, monitor analytics around the impact of their research and track the research of academics they follow. Intervention: create an Academia.edu profile and use the tools available to foster collaboration with other scholars (if this is more suitable than ResearchGate).
- *About.me*, *Wordpress* or similar – a simple, self-managed web page that will profile academics and act as a gateway to their other online profiles. Intervention: create a personal web page to list publications and describe research interests.
- Any other *new online technologies* that may emerge during the course of the project or to which the project participants may introduce the SCAP research team.
- *Social media* – sites such as Facebook, MySpace and Twitter allow scholars to reach out to other scholars at a social level and "push" their research through status updates, comments, likes, shares and tweets. Blogs also offer a similar potential, though requiring a greater investment in time.
- *Publications and other academic output* – integral to any academic's profile are the "traditional" publications they produce, be they books, book chapters, journal articles, conference papers or professional articles. In addition, SCAP acknowledges the potential value of other outputs: datasets, laboratory notes, interviews, creative works, etc.[139] Inevitably, therefore, creating a more visible online profile of any academic will entail introducing him or her to new online publishing channels in order to provide links from his or her profile to these academic outputs.

Due to capacity constraints – specifically the absence of an embedded scholarly communication professional in the institution – the PAO initiative was designed to accommodate no more than ten participants from the FoS. The research assistant attached to the UoM SCAP team acted as the primary agent in this process, supporting academics in the creation of their online profiles.

Phase 1: Articulation of concept and gaining buy-in of institutional stakeholders

During the third site visit in May 2012, FoS staff were invited to a seminar in which they were briefed on Web 2.0 technologies, open access concepts and practices and new forms of measuring scholarly impact.[140] They were then introduced to the PAO initiative, and volunteers were requested from the change laboratory participants. Ten members of the faculty signed up to participate.[141] A ten-step process was developed in conjunction

139 We suggested that if scholars lacked a platform for profiling their research outputs, they could use the free online service Figshare: www.figshare.com

140 Francois van Schalkwyk, presentation on tools and technologies for developing online academic profiles at the University of Mauritius, 8 May 2012, available at: www.slideshare.net/scap_uct/profiling-academics-online-12982575

141 The initial group of ten dropped to nine after one participant left the university. This group still constituted close to 20% of the FoS staff, however, and contained academics who were relatively active in publication compared to the faculty average.

with an external consultant, of which the first four steps were mandatory. They were also informed that the local RA would be available to assist them in the process of creating and maintaining their online profiles. The initial step in this process was providing an up-to-date curriculum vitae (CV) to the PI team and RA to serve as a reference document for uploading content to the appropriate platforms. Participants were asked to complete their profiles by the end of June 2012, and to update them and add content as regularly as was feasible.

Phase 2: Creation of online profiles and collection of baseline visibility metrics

The second phase of the programme began after the third site visit, in which the PAO consultant conducted an assessment of the existing online visibility of participants. This data was used as a baseline to help to track the progress of the initiative in improving visibility. The information was gathered via desk review during July and August 2012. Included in the baseline assessment were:

- the existence of a personal page on the university website
- existing profiles on LinkedIn, Google Scholar, Mendeley, ResearchGate, Academia.edu and other discipline-specific online platforms
- the existence of a personal web page or blog
- the number of publications indexed by Microsoft Academic and Google Scholar
- the existence of a Twitter account
- participants' position in the results of a Google search of their name and of keywords describing their field of expertise
- *h*-index scores and number of citations as calculated by Google Scholar and Microsoft Academic.

In December 2012 a second assessment was conducted using the same criteria as in the baseline evaluation in order to establish a change in each participant's online visibility. In addition to recording whether a participant had a profile on a particular platform, the December assessment also sought to measure whether there was any online activity during the six-month period.

Phase 3: Presentation of findings to FoS

During the final site visit in January 2013, the findings of the PAO initiative were relayed to FoS participants during the final workshop. At the same time, follow-up interviews were conducted with a selection of PAO participants as well as with some faculty members who attended the seminars but who did not participate in the PAO initiative.

Implementation initiative results

At the end of the programme, academics showed the greatest activity on LinkedIn (75%), ResearchGate (75%) and Google Scholar (66%). There was little to no engagement with Academia.edu, Twitter, departmental websites, personal web pages or blogs.

Four of the most prolifically published scholars were selected to assess the extent to which their publications were listed online and whether an increase in the listing of their publications (combined with their online profiles) led to an increase in their *h*-index

scores and number of citations. The determination of which four academics to include in this analysis was done based on the publication lists submitted by the participants to the PI team. Analysis through Google Scholar and Microsoft's academic platform, tools capable of tracking citations and *h*-index scores by academic, showed an increase in both counts for participating academics.

The scholars who volunteered for the PAO initiative were not proactive about creating their own online profiles. While an explanatory guide on electronic profiling was produced for their use, scholars were slower than expected in sharing their CVs and creating their own accounts. Numerous follow-up visits by the UoM RA were required for movement in this area. Time constraints were the only reason listed for the slow activity; at no point did participants express discouragement with the new technologies or find them difficult to navigate. When publication lists were acquired, they were typically incomplete, especially with regard to URLs and DOIs for online publication. This speaks to the inadequacy of current personal curation systems.

Scholars were selective in developing online profiles that spoke to a specific, identified need. For instance, participants created and maintained profiles on ResearchGate with far greater interest than on Academia.edu. This was due to the fact that ResearchGate appeared to cater better to the scientific community, with a proportionally greater representation of researchers in biology, chemistry and medicine whereas Academia.edu appeared better suited to those in the humanities and social sciences.

Lessons learned

SCAP was able to test a number of assumptions through this implementation initiative and yield important insights regarding the UoM FoS approach to scholarly communication. These include:

Lesson 1: Open access initiatives must work to develop a comprehensive understanding of a target site's historical and contemporary research activity before beginning open access advocacy. This is especially important in the case of small, geographically isolated or otherwise marginal institutions.

Lesson 2: Disciplinary communication practices strongly influence scholars' response to external stimuli (Reale & Seeber 2010) and may shape academics' behaviour even more strongly than institutional communication policies or strategies (as was the case with FoS academics).

Lesson 3: Not all academics are familiar with the concept of social profiling, nor are they necessarily proactive in developing their online presence. Thus it is advisable for intervention projects to embed capacity in the form of a content officer – such as a graduate student or IT-skilled personnel – who can assist scholars with this process.

Lesson 4: FoS academics find greater value in aiming their communicative activity at colleagues in related fields (through ResearchGate) than to the general public (through the UoM website) or non-discipline colleagues (through Academia.edu). This was

reinforced by their complete disinterest in blogs, personal web pages and Twitter – tools for mass (rather than directed) communication.

Lesson 5: e-Infrastructure constraints are not barriers to social media uptake. FoS scholars never cited inadequate bandwidth as an obstacle to engagement with online profiling tools which require very little bandwidth.

Lesson 6: Visibility is less important for FoS academics than networks. While participants were interested in collaborating and sharing with their peers, they were less concerned with the more abstract notion of visibility. Profiling platforms were not seen only in terms of their ability to promote visibility, but more as new paths for targeted collaboration or problem-solving. Furthermore, academics did not have an intuitive grasp of how to leverage their online profiles to maximise visibility (such as including high-impact key words to raise their page rank according to a given search string).

UNAM Faculty of Humanities and Social Sciences

The Faculty of Humanities and Social Sciences (FHSS) served as the SCAP pilot site for implementation activity at UNAM. It also served as our main research unit concerning scholarly communication practices (as discussed in Chapter 5). We chose to work with FHSS because it was nominated by UNAM in the light of the fact that the SCAP research coordinator was also the dean of the faculty.

The FHSS was ideally placed to contribute to SCAP's desire to showcase a range of outputs due to its production and existing profiling of a range of different scholarly outputs (journal articles, reports, videos, etc.). The developmental focus of much of its work was an additional motivating factor in collaborating with the faculty.

Challenges

Through our early change laboratory workshops, surveys, interviews and conversations at UNAM, we aimed to establish the primary scholarly communication desires and challenges within the FHSS. These were to help us determine the specifics of the implementation initiative that we planned to pilot with the faculty. During our research, we found that three challenges stood out for FHSS members: the young age of the institution; the absence of a policy regulating scholarly communications activity; and the fact that a previous IR installation had failed.

Age of the institution

UNAM is a relatively young institution, having only recently (September 2012) celebrated its 20th anniversary. Since its inception, its activities have largely been structured by a strong teaching mission. This sensibility was reinforced with the university's merger with the country's four teacher training colleges. The university absorbed the teaching staff of those colleges, adding even greater depth to its teaching-oriented staff complement.

However, in 2005 UNAM adopted a research strategy (Kiangi 2005) which aimed to increase the production and impact of its research. This, along with changes to the staff performance assessment and promotion review criteria (UNAM 2011b, 2011c), helped to signal the institution's growing research ambitions. In 2011, it also revived UNAM Press, a small but active publishing entity that serves not only the academic faculty, but writers and scholars around the world (who write about Namibian topics).

But the young age of the institution means that the FHSS has a nascent research culture. It is something that is being developed gradually, though scholars acknowledge that it will take some time to grow. While none saw this an insurmountable obstacle to improving research and communication activities, they understood that such improvements would have to be made in tandem with the strengthening and maturing of the institutional research culture.

Scholarly communication policy deficits

At the time of SCAP's inception and initial engagements with UNAM, the policy framework regulating scholarly communication activity was largely undeveloped. It had a useful research strategy, and the university acknowledged the importance of governance structures to drive and coordinate research and dissemination activity, but it had yet to formulate a policy for this activity. (This has since changed, as discussed in Chapter 4 and later in this chapter.)

Another area of concern for SCAP was the absence of an institutional intellectual property (IP) policy. IP is often one of the most challenging components in sharing research content openly. The absence of an IP policy at UNAM was thus problematic for any form of scholarly communication activity, especially when attempting to develop new practices that require engagement with a wide range of outputs. While the development of an institutional IP policy was not within SCAP's remit or authority, we were nevertheless committed to tracking any potential issues and offering support in addressing these issues wherever possible.

Failure of previous institutional repository

In 2006, an international repositories initiative partnered with UNAM to install an IR in the library, known as the Information and Learning Resource Centre (ILRC). Overseen by the library ICT director at the time, it was populated with some digital objects, mostly electronic theses and dissertations, as well as back-issues of the *Namibia Development Journal*.

However, because the repository was installed in isolation – without reference to the broader institutional policy environment – it essentially functioned as a static archive, never fulfilling its potential of being an institutional resource that the academic community recognised as serving the university's social mission. This resulted in limited uptake by UNAM academics as the repository's value was never demonstrated to them.

In 2009, all activity around the repository ceased with the departure of the library ICT director who had managed it. The server remained dormant until early 2011 when the university investigated the prospect of resurrecting it and salvaging its content. External

consultants ascertained that the server had been irreparably damaged by power surges due to the absence of load balancing and disaster recovery mechanisms. All content on the server was lost.

When SCAP discussed potential implementation opportunities at UNAM, the history of this repository failure loomed large for both UNAM participants and us. None of us wanted to revive a repository just for it to fail again. The lessons from that earlier experience had to be understood if they were to be avoided in future repository activity.

Implementation focus

The first change laboratory with the FHSS was hosted in June 2011 to initiate the process of mapping its scholarly communication activity system. In terms of identifying areas which its community sought to address, FHSS participants identified three core areas which they would have liked to have seen addressed in a possible intervention:

- A faculty website which could play the role of showcasing research output
- An electronic publishing platform that could facilitate production and sharing of research outputs
- An IR for the purpose of showcasing a broad array of outputs beyond formal journal articles

Since the university had already committed to exploring the installation of an online profiling (e-portfolio) platform – showcasing the biographies, research and teaching backgrounds of the UNAM academic staff – the development of an IR (to curate, profile and disseminate their research outputs) offered a very useful complementary tool for enhancing the university's research visibility.

Intervention

Given the desires expressed by workshop participants, the proposed intervention focused on reviving the UNAM IR for the purpose of:

- enhancing UNAM's strategic approach to dissemination, in which publishing is regarded as a core function of the university
- making visible scholarly communication outputs which can address national and development issues
- providing UNAM academics with a platform through which they could increase their scholarly footprint and online visibility.

This would be achieved by utilising SCAP programme resources to build a pilot IR in partnership with the ILRC under the guidance of the ICT director. It would also serve to engage UNAM managers and stakeholders to interrogate the philosophical principles underpinning UNAM repository development and how it could be leveraged to address institutional objectives. Lastly, it would also pilot a process in the FHSS of sharing a

broad range of outputs that promote the institutional reputation and address issues of national concern.

However, to assure that we did not reproduce the mistakes that lead to the previous repository failure, our implementation process comprised five phases: identification of institutional stakeholders, planning and strategic document formulation, technical development and hosting strategy, FHSS content collection and policy development.

Phase 1: Identification of institutional stakeholders

In order to establish a sound foundation for renewed repository development, SCAP engaged stakeholders who played a role in institutional scholarly communication. Based on a series of discussions that took place during our site visits, the SCAP PI team stimulated conversation and decision-making processes about who might be best positioned to function as the business and administrative owners for new repository infrastructure. The following stakeholders and were identified:

- The ILRC (library), which provided technical input and functioned as a key partner, being the previous repository host. The ILRC was at this time also transforming from a predominantly undergraduate teaching and learning service to supporting the faculty research endeavour.
- The Computer Centre, the university's ICT service provider. At the time of implementation, it was embarking on a process of bringing the ILRC into campus-wide backup and redundancy processes; the partnership of this entity was therefore crucial in terms of ensuring against infrastructure vulnerability.
- UNAM Press, launched in the first year of SCAP programme activity (2011), brought additional evidence of the university's new strategic vision for growing not only its research agenda, but also for developing channels for engaging with society.
- The *Journal of Studies in the Humanities and Social Sciences*, a new FHSS journal launched in 2012, constituted a locus for new scholarly communication activity, fulfilling a desire that scholars develop new publishing and dissemination platforms.
- The Department of Information and Communication Studies (within FHSS), which provided input on the collection and collation of the content for the pilot initiative.
- The Research and Publications Office (RPO), the institutional body involved in the management and promotion of research.

Phase 2: Planning and strategic document formulation

Given SCAP's ambition for the repository to be considered an institution-wide asset, we engaged with stakeholders from across the university in decision-making processes about the scope and function of the repository. During our meetings, we also aimed to identify parallel initiatives where there might be operational synergies in terms of interaction with the academic community or metadata integration. Examples of these included the e-portfolios initiative as well as a large-scale project to increase the curatorial functionality of the UNAM website.

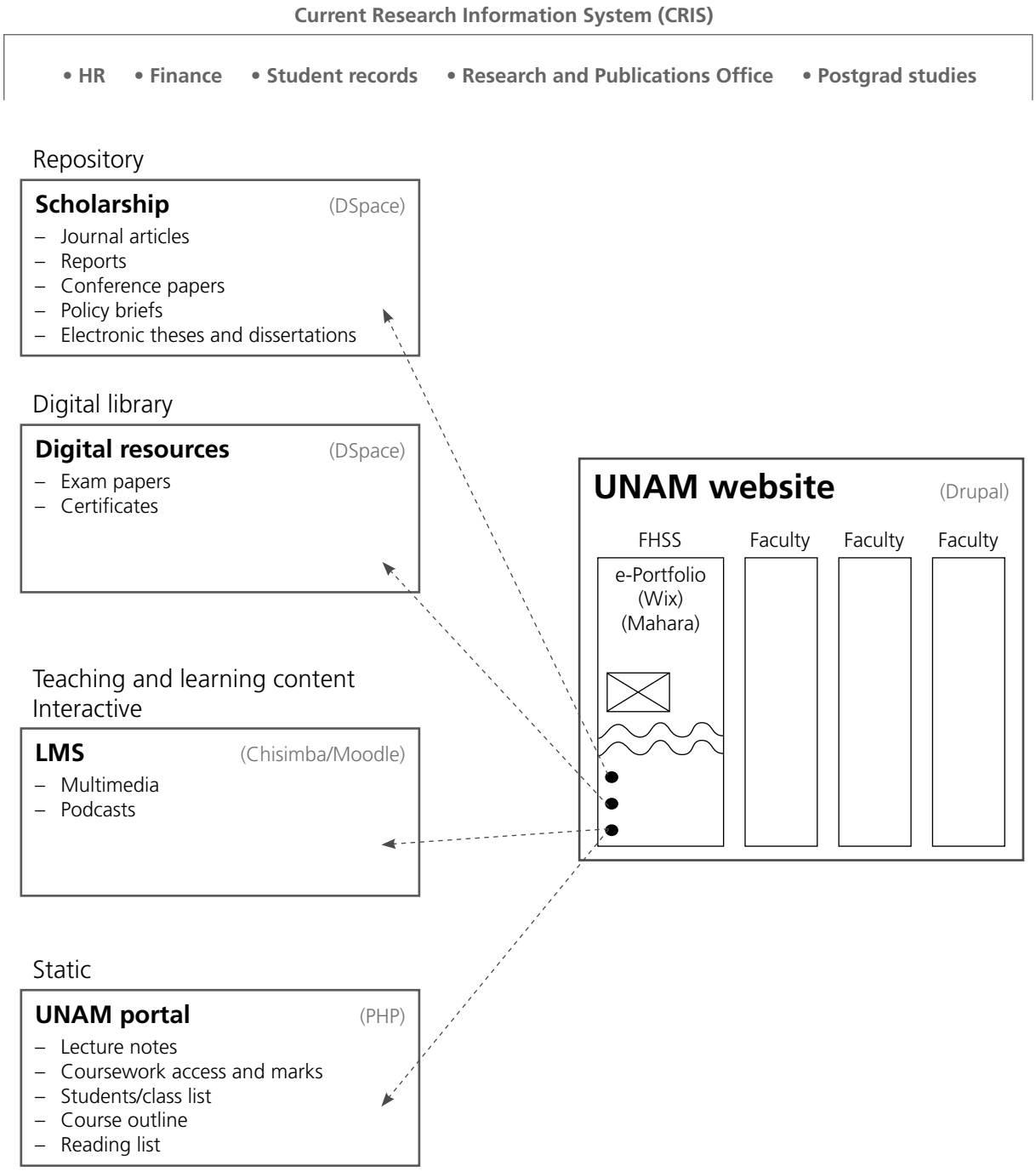

Figure 6.5 UNAM institutional repository location in the scholarly communication activity system

In order to formalise the various components of repository development, the SCAP RC developed a "Strategic Plan on UNAM Repository Development," which was accompanied by a detailed overview by the SCAP repositories consultant of new required roles and responsibilities (with particular focus on the library). These documents formed the foundation for a stakeholder meeting during the SCAP PI team's third site visit, in which repository linkages to the institutional scholarly communication activity system

(and other projects or activities) were made explicit. Within this framework, the new UNAM website was viewed as the central access entity and institutional "shopfront". These relationships are illustrated in Figure 6.5.

Inclusion of the overarching Current Research Information System (CRIS) in the discussion (and subsequent diagrammatic representation) was illustrative of the ambition for scholarly communication infrastructure and activity to fall within the framework of strategic research management and for technical systems to be integrated with research management systems in the long term.

The result of these discussions was our formulation of a concept document, "Strategic research management and institutional considerations in development and sustainability of a new institutional repository at the University of Namibia", which we submitted to the UNAM administration in October 2012. It identified the following three key challenges, each of which was accompanied by a set of recommendations for how these issues might be addressed:

- Cohesive institutional strategy and academic community interaction
- Library capacity development
- Technical skills shortages and ongoing customisation/development

Other factors for consideration included adherence to national and institutional IP/legal frameworks, addressing the digitisation agenda and linking to data management.

Phase 3: Technical development and hosting strategy

Once foundational scoping and strategic discussions had progressed and stakeholder partners were on board, activity moved to practical application. In the six-month period between September 2012 and February 2013, the SCAP implementation initiative focused on establishing the technical foundations of the new repository and resolving institutional ownership issues.

The ILRC systems administrator, in conjunction with the Computer Centre, undertook technical development of the repository. The systems administrator was supported in this role by a SCAP consultant who was brought on board to provide guidance on DSpace customisation, ensure that development work was in line with international best practice and open standards and assess current redundancy mechanisms. This consultancy identified the fact that there was only one person at UNAM with the requisite systems administration expertise as a potential risk, drawing attention to the need to develop further capacity in this area and expand linkages to other institutions and online communities operating in the same technical framework.

By February 2013, installation of DSpace version 1.8.2 software was complete and running on Ubuntu 12.4 LTS server software, both being the latest versions at the time. The question arose of where to host the platform as the ILRC did not appear to have the technical capacity to provide the required server capacity and technical backup expertise. In addition, there were still concerns about ILRC e-infrastructure linkages to institutional backup and redundancy mechanisms, which were still being developed. It was therefore

agreed that the Computer Centre would function as the *business owner* of the technical infrastructure (taking responsibility for ongoing development, technical support, etc.), while the ILRC functioned as the *administrative owner* (taking responsibility for ongoing content deposit, systems administration, academic community liaison, etc.).

Following the DSpace installation, SCAP funds were utilised to bring a third-party service provider on board to undertake front-end development and provide batch-ingestion functionality. This work was completed by May 2013, but it was acknowledged that ongoing development and further refinement would take place as institutional activity progressed. By July 2013 the UNAM Scholarly Repository[142] contained over 500 resources, comprised of traditional and other outputs as well as a substantial body of theses and dissertations.

Phase 4: FHSS content collection initiative

Concurrent to the technical process of building the DSpace repository, the SCAP UNAM team undertook a large-scale content collection drive in order to populate the repository with content by the time of launch. While FHSS formed the locus of collection activity for the purpose of the SCAP pilot, the ambition was to scale this activity up to the institutional level. In line with this objective, the SCAP RC facilitated a number of institutional engagements with university stakeholders (with particular focus on forums engaging fellow faculty deans) in order to extend the initiative beyond the FHSS. This resulted in positive response and by July 2013 there were content collections for all but one of the university faculties.

The FHSS content collection initiative worked on the principle of utilising a team of student assistants who visited academics in various university departments to explain the initiative and solicit content. This "door-to-door" approach was viewed as crucial for obtaining a response from academics. While it proved to be an efficient strategy for foundational content collection, it was acknowledged that articulation of an institutionally supported mechanism for engaging with the academic community around repository activity and content deposit would be required. The systems administrator, with the support of ILRC and FHSS staff, undertook the content deposit pilot process, though it was acknowledged that additional capacity and a more formalised system would be required for long-term scalability and sustainability.

Phase 5: Policy development

Development of IR policy was viewed as crucial for articulating scope for future development, addressing relevant capacity challenges and ensuring long-term scalability and sustainability. Activity in this area during the SCAP intervention process was driven by the SCAP RC in conjunction with SCAP's UNAM Advisory Board. This Advisory Board membership overlapped, to a large extent, with an institutional task force on scholarly communication convened by the director of UNAM Press in January 2013. One of the key objectives of this task force was to formulate an institutional scholarly communication policy that would address, amongst other things, the institutional

142 UNAM Scholarly Repository, available at: http://repository.unam.na/

position on open access and the ambition to grow publishing activity within the university.

A draft Scholarly Communication Policy was presented to the UNAM Senate in May 2013 and ratified in August 2013 (UNAM 2013). This was accompanied by a Research Policy and a Research Ethics Policy and Guidelines for the University, also submitted to the University Senate for approval in May 2013. These recent policy formulations aimed to build on the UNAM Press Policy of 2011, which identified the need for an overall scholarly communications policy "to cover the range of publications emanating from the University … different types of publication, different forms of dissemination, e.g. print and online, sales or free distribution."[143] The Press Policy had additionally made it explicit that further policy development in this area "needs to address the University's position regarding online publication, the sharing of data, and open access to some University research."[144]

The policy aims were identified (UNAM 2013: 5–6) as to:

- provide guidelines for communicating scholarly outputs
- raise the profile of UNAM's research and enhance its impact and contribution to national development
- establish common standards of academic writing and scholarly outputs
- ensure quality by promoting adherence to best practices
- make UNAM's outputs accessible in different formats to different audiences
- establish sustainable management strategies for communicating outputs
- strengthen the preservation and archiving of UNAM's outputs.

This policy is noteworthy in that it takes a broad approach to open access and content sharing, accounting for content genres and processes outside of formal book and journal publications, acknowledging the importance of evolving quality assurance processes. The commitment to open access is explicit and functions on the assumption that, "as a largely public-funded institution, [UNAM] has an obligation to share its research findings and scholarly outputs with all stakeholders and the wider society" (UNAM 2013: 8). The policy identifies repository development as a key mechanism for supporting OA activity and makes explicit the roles and responsibilities governing scholarly communication.

The ability of UNAM to develop a repository, articulate a policy to govern it and drive the open access agenda within a short period of two years served as an indication of the university's commitment to addressing scholarly communication activity and enhancing its research impact.[145]

143 UNAM Press Policy adopted by Senate 31 October 2011, Resolution SEN/11/2211/100

144 Ibid.

145 The new Scholarly Communications Policy explicitly acknowledges the contribution of the SCAP programme in its Introduction: "The Scholarly Communications in Africa Project of the Faculty of Humanities and Social Sciences (2011–2013) has proved to be a valuable pilot project in this regard and has identified many of the issues to be considered in the development of a scholarly communications policy for the University" (UNAM 2013: 4).

Lessons learned

The success of this implementation initiative was due, in part, to its alignment with both institutional and national strategic focus areas. University management supported the SCAP programme throughout the three-year period of engagement, with administrators, academics and other partners demonstrating interest in the programme's potential to advance the scholarly communication agenda and contribute to institutional development. Alignment with the goals of high-level stakeholders facilitated a relatively smooth institutional relationship and the UNAM RC's dean status was also instrumental in bringing executive weight to the implementation initiative. These factors combined to help this initiative to move beyond the pilot stage at a faculty level to full-fledged engagement at the institutional level. Through this process, SCAP was able to learn a number of important lessons regarding scholarly communication at UNAM, including:

Lesson 1: Decisions about IR ownership and governance structures need to be made in consideration of the current functioning institutional scholarly activity system and available capacity of various stakeholders. Simplistic assumptions about the repository host entity and the various roles of institutional stakeholders involved in scholarly communication and archiving (such as the library, information technology entities and university press) can overlook the historical and cultural legacy of these stakeholders and make incorrect assumptions about their capacity to engage with new forms of scholarly communication. Since open access and e-research are still relatively new phenomena for many Southern African institutions, Northern-based models for location of activity may not be appropriate in these contexts.

Lesson 2: Development of e-infrastructure needs to be accompanied by development of human capacity. In the rapidly evolving world of IT- and internet-driven communication, it is important to guard against the temptation to focus investment on technology and new e-infrastructure while neglecting human capacity development. It is important that university personnel placed in new scholarly communication roles not only receive the training required to provide new services to the academic community, but also to have a sense of the purpose and scope of the work they are doing.

Lesson 3: Engagement of the academic community continues to be one of the greatest challenges in sustained repository development. While many FHSS academics expressed an interest in the SCAP initiative, it took considerable time and effort to get them to share their research in the repository. The lack of time, rewards or incentives for sharing their outputs hinders scholars' interest in making the effort to submit their materials to the repository. This mirrors an international phenomenon in non-mandated open access repository work, where deposit rates have often been low (Ferreira *et al.* 2008; Finch 2012; Geiseke 2011; Harnad 2009).

Lesson 4: Repositories are unlikely to function optimally if they are not integrated into institutional strategic planning structures and core IT frameworks. The failure of the previous UNAM repository can be traced, in part, to the fact that it did not extend beyond the library to the broader academic community and cement the protocols for ongoing functionality and sustained growth in institutional policy.

Conclusion

These four implementation initiatives give an indication of not only the diversity of scholarly communication ecosystems at Southern African universities, but how they are shaped by history, culture, traditions, capacity, disciplinary norms and visions for the future. Rather than being assumed to share a general set of challenges to be addressed with a single technology or policy solution, each ecosystem had to be researched and understood before an implementation initiative could seek to improve scholarly communication in those contexts. To increase the likelihood of success in each case, we not only carried out extensive research with pilot site participants and university managers and librarians, but also elicited participants' desires regarding how they wanted their activity systems to change and tried to implement pilots that spoke to their desires. This was not always easy – especially since many scholars were not aware of the various tools, technologies and strategies available to enhance their scholarly communication and visibility – thus we tried to improve their own analyses and insights by sharing with them trends and developments from around the world in this regard. Our relationship was thus a partnership in which we collaborated to improve their scholarly communication ecosystem, with feedback from inside and outside that system.

Thus, at UB our implementation activity focused on enhancing the value and utility of an existing technology, the IR, which had grown stagnant through inappropriate workflow processes. Part of the problem had been that one of the envisaged processes – that of having departments identify, vet and submit materials to the IR – had never been implemented. Thus, we piloted a QA process through DLIS which showed how a content identification, vetting and submission process would work at a departmental level. The process surfaced a number of unanticipated challenges, but ultimately showed that this workflow plan was feasible. This was important as it showed that, moving forwards, not only would such a workflow process have to be incorporated into the usual working activities of the departments, but that the library would have to establish a workflow process that could take that submitted material and quickly upload it to the IR. When that occurs, UBRISA will start to live up to its potential as an IR and make more of UB's research visible.

At UCT, we worked with SALDRU to revamp its unit-level profiling technology, changing it from a Joomla-run system to a DSpace repository system which we believed was more appropriate for handling the kinds of digital content that SALDRU had amassed over the years. With the help of a content architect who set up the installation and then transferred all of SALDRU's materials to the new system and protocols, the pilot showed how small research units operating in UCT's decentralised policy space could nonetheless develop their own research profiling mechanisms that would allow them to raise the visibility of their scholarship. Similar to the UB initiative, the success of the pilot was not based on buying a brand new technology (a temptation if one operates with a techno-deterministic mindset), but on improving the technologies that were already present, making them more cohesive and strategic.

At UoM, we forewent the idea of utilising any bespoke technology and had FoS scholars engage with free Web 2.0 tools that can curate and profile their work, as well as serve as a platform for raising their own personal visibility while enhancing their chances of

connecting and collaborating with others internationally. This was chosen as a strategy because UoM lacked the capacity to install and maintain a new technology (such as an IR) and because scholars are relatively free to set the pace of their own research endeavours. They enjoy a good deal of autonomy in their research and dissemination activities, thus we implemented a pilot that leveraged that individual freedom. In this case, the potential of the strategy was limited by the fact that scholars were not dissatisfied with the level of visibility they achieved through traditional communication models, through their own disciplinary outlets (many of which are OA by default) and through international conference opportunities where they meet with colleagues and establish collaborative relationships. While their preferred strategies did not lead to high levels of visibility or connectivity (at least compared to what these levels could be), their activities were in line with the government's strategies for knowledge transfer, achieved primarily in direct relationships between identifiable communicators (scholars) and receptors (industry, etc.), not dispersed openly to anyone who wants to access it. Thus our implementation initiative was successful in raising awareness about the possibilities of utilising Web 2.0 tools to overcome UoM scholars' geographical isolation through virtual means, but it is too soon to tell whether it has changed their scholarly communication ecosystem in a meaningful way.

Lastly, at UNAM we helped to re-establish a technology that had existed in previous years – an IR – but which had failed and become dormant. In reviving the IR, one of the key aspects of the implementation process was identifying the workflow and ownership issues involved in running it, as deficiencies in these areas led to the loss of the previous IR. Similar to the UB pilot, we developed a QA, vetting and content profiling process for the FHSS to adopt, using its faculty members' outputs as the pilot materials for what would then grow into a fully fledged IR. By starting with just the FHSS, we were able to assess workflow procedures in a manageable setting, though since the pilot has occurred, other faculties have also adopted the process and have started submitting their materials to the IR. This pilot was a success not only because the institution wanted to learn from its past mistakes regarding the running of the previous IR, but because it took the time to lay the policy foundation upon which this IR would rest while at the same time identifying the roles and responsibilities of the various parties involved with running it. Instead of being the pet project of a single motivated staff member, the new IR is now truly an integrated part of the institution.