

Chapter One

From Research Support to Research Partners

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Review status: Peer reviewed

Abstract

Academic libraries are at the cross-roads. Their relevance depends on the provision of a radically expanded suite of research support services. Rapid advances in the information and communication technologies and the growing demand for the internationalisation of higher education necessitates that libraries explore, adopt and adapt new research support services that transform the librarian from a reactive service provider to a proactive research partner. This transformation compels librarians to engage with a paradigm shift that propagates the provision of new services such as bibliometrics, data management and open scholarly communication.

In an era of data deluge librarians are exploring new roles and services. Bibliometric analysis is being exploited to measure and assess the research impact of individuals, and groups of individuals or institutions. Libraries assist researchers to identify their h-index and the high impact factor journals in their field. They are engaging in new types of collaboration to support data-centric research; guiding researchers in the fast expanding phenomenon of open access publishing, providing repository services and gold open access services such as article processing charges. The concept 'library as a publisher' is gaining traction with librarians playing a much more central role in the publishing process, having shed their reactive reference service role and responsibilities.

Keywords

Research support; research partner; bibliometrics; open access; data management; research data management; RDM; library as a publisher

Introduction

The provision of new suite of research support services beyond the traditional has now become a priority for academic libraries. The aspiration to extend the suite of research support services is precipitated by rapid advances in information and communication technologies (ICTs) that facilitate the production and transmission of scholarly information and the internationalisation and globalisation of higher education in preparing students for productive citizenship in an increasingly globalised world. Aligned to these changes is the transformation of scholarly communication. Collectively, these changes are fast converting the aspirations into obligations to ensure the efficient delivery of new and innovative services commensurate with 21st century pedagogy and research, and internationalisation.

Many libraries have responded to these changes by developing and implementing new organisational structures. In some instances, academic libraries have introduced different service models to support researchers and research production. Venturing down this road raises a number of questions such as 'does the offering of these new services add value for the researcher?' Another significant question is 'has there been a mind shift from being a supporting service in the research process to a partnership in the research process?'

The authors propose that there are pockets of librarians who are searching for a deeper interpretation of research support and are providing proactive support in the research process. However, there is a dearth of evidence demonstrating that libraries are viewed by the researcher community as key partners in the research process. Despite the lack of awareness on the part of researchers, the authors maintain that libraries are recognised by their principals as major contributors to their institutions in achieving their strategic goals. However, it is the librarians, in the first instance, who need to make the mind shift and be more aggressive in

advocating the centrality of the library to the research process and research excellence. Librarians need to do much more in strategically locating the library at the epicentre of the research process – locating the library as a key partner and not just a supporter in that process.

As pointed out by Raju and Schoombee (2013), librarians need to traverse the divide between themselves and the researcher, and locate themselves as partners in the research cycle which starts at the conceptualisation stage and ends with dissemination and preservation. This approach combines collections, professional expertise, subject knowledge, researchers, scholarly communication et cetera and places the library as an equal partner at the core of the research process and the research projects of an institution.

The purpose of this chapter is to highlight the point that academic libraries need to embrace the fact that their roles and responsibilities are changing radically. For librarians to remain relevant they have to make a paradigm shift from a reactive service provider to a proactive collaborator in the research process.

Reconceptualisation of research support

Libraries have traditionally prided themselves on being the stewards and gatekeepers of scholarly information. In the past was there was a scarcity of scholarly information, and librarians were the key to accessing the available information and their expertise in retrieving information made them core to the research process. In the current era of a glut of information and its ubiquitous availability, searching for information is being done increasingly by the researchers themselves, rather than by information professionals. Astrom, Hansson and Olsson (2011) comment that this new information seeking behaviour has removed the librarian from the 'research link'.

The disaggregation of librarians from this link has forced them to move away from using the term 'research support' to mean providing reference services or prescribed resources for

students. Librarians need to move towards developing a new philosophy and the reconceptualisation of 'research support' to highlight support for novel and new research (Parsons 2010; Borchert & Callan 2011; Parker 2012). This reconceptualisation must embody the library's role in contributing to increasing the productivity of research and scholarship.

The core mission of the research library is to connect the library's contribution to the academic mission of the university with the focus being the researchers as opposed to the university as a whole. It is becoming a common practice in Australian academic libraries to appoint research librarians to ensure that they make a constructive contribution to the research process. To rollout these new research support services, Parker (2012) points out that a new set of skills is required. This set includes leadership skills, the ability to approach and communicate with academics, willingness to learn and experiment with different ways of promoting library services and excellent written and analytical skills. However, there are specific skills related to research support that require mastering in order to provide the envisaged collaborative research support services.

Transition from supporter to research partner

Monroe-Gulick, O'Brien and White (2013) assert that the librarian is a 'partner' in research rather than a 'supporter' of research and this is an area of academic librarianship that needs further exploration and emphasis. These authors quote Law's (2010) argument that 'librarians now are much less clearly partners in the academic enterprise and much more a provider of services in an increasingly hierarchical relationship.' The concept of being a partner can be interpreted as not only helping researchers succeed in completing and disseminating their research, but also contributing to actual knowledge creation using the specialised knowledge and skills which librarians possess. The definition of partnerships should include this proactive creation and active engagement

in the research process and not simply passive support.

In pursuing an agenda to provide new services to support research, academic libraries need to reconceptualise 'research support services'. This need is succinctly summed-up by Parker (2012) who posits that research support services should be planned strategically and applied systematically, rather than on an ad hoc basis for the individual researcher who visits the library. Her view is that the haphazard roll-out of new research support services solicits negative impact.

This negative impact is evident in the United Kingdom (UK) and United States of America (USA) where there is evidence to show that the 'uncoordinated' provision of research services has solicited mixed messages from researchers about the value of the libraries' research support services. The Research Information Network Report (2007) reveals conflicting views among researchers, librarians, and library directors on the relative importance of suggested future roles for librarians. The point of departure is that library staff attach more importance to information literacy teaching, metadata management, and copyright advice than researchers do. Nonetheless, there is consensus that the library has responsibility for the custody of special collections, institutional repository management, and e-resource administration. MacColl and Jubb (2011) point out that a survey conducted in the UK found the library's role in e-resource procurement was increasingly valued, but that faculty were unlikely to consult a librarian in person, visit library service points, or search online catalogues. Researchers in the UK and USA concluded that 'researchers have little interest in the support services libraries have built for them in recent years, yet they are aware of support needs that are not being met' (MacColl & Jubb 2011: 10). Hence the need for strategically planned and applied research support services becomes ever more critical.

Garner (2006) presents the Research Services

Unit (RSU) at Curtin University as an exemplar of a planned and systematically applied research support service giving credence to the assertions made by Parker (2012). Garner (2006: 38) says that the purpose of the Research Services Unit is to 'proactively support the growth and development of research activities at Curtin University by providing high quality resources, supporting research processes, facilitating scholarly communication and promoting research output'.

The new research support services, located in the purpose statement of RSU at Curtin, are indicative of services that need to be rolled-out at higher education institutions. These services are commensurate with the changing higher education landscape with research increasingly becoming a collaborative global activity enabled by the internet. The library's support for research must be firmly located within this paradigm which more often than not would be immersed in the strategic plans of the institution. For the library to be embedded in the new higher education landscape, it has to ensure that its proactive services will command a partnership relationship as opposed to a reactive and 'peripheral support service' relationship.

The librarian in a changing information landscape

As mentioned by Garner (2006), the services provided by Curtin University are a positive response to the changing higher education and information landscape. One of the significant trends influencing this landscape is the radical transformation of scholarly communication. Another significant trend is management of research data. Developments such as cloud computing, open access (OA) publishing and online social networking have had significant effects on research practices and research dissemination (Bourg, Coleman & Erway 2009). The convergence of these trends has resulted in researchers drowning in a deluge of raw data and published information. Researchers have to acclimatise themselves to the available options for dissemi-

nating and sharing their work. The choices researchers are forced to make have implications for intellectual ownership, potential audiences, ways of measuring impact, potential re-use, and long-term preservation.

Bourg, Coleman and Erway (2009) assert that while it is argued that academic libraries are playing an increasingly important role in scholarly research, others fear that they are on the brink of extinction and must change radically to survive. It is time to rise above the extinction debate, and take a fresh look at the role of academic libraries in supporting research. The authors assert that the changing information environment necessitates that academic libraries take on new roles, provide new services, build new partnerships and work more closely with researchers as research partners.

The authors posit that these challenges have to be mediated by skilled professional librarians. However, for the librarian to be successful in assisting the researcher they themselves need to make the mind shift away from reactive reference services to proactive research support services. They need to negotiate the 'academic-research' barrier and locate themselves as partners in the research life cycle. Academic librarians need to make this paradigm shift and provide innovative services and resources to support emerging forms of research, publishing, and information and data management.

New services

There are a number of academic libraries that are providing new research support services. Further to the Research Services Unit (RSU) at Curtin University, Riera-Quintero, Cuxart and Zuniga-Ruiz (2012) point out that at the Open University of Catalonia a group of research librarians provide support to researchers from the start of the research process to the assessment of their scientific output. This team of research librarians are also used by this university to provide support for its strategic decision-making through the analysis of bibliometric data.

In addition Stagg and Kimmins (2012) ob-

serve that academic libraries are elevating their 'game' and taking on the challenge of providing a suite of 'new' research support services across the disciplines and with complementary research support divisions at universities. The growing suite of services includes, *inter alia*, bibliometric support, advice on repositories and open-access publication, and guidance on the dissemination of research. These are the innate skills of librarians which contribute exponentially to determining the most appropriate method or forum for disseminating research output, thereby elevating the researcher-librarian partnership status.

Bibliometrics

Ocholla (2007) advances the view that it is generally accepted that the primary purpose of publishing research results is to complete the research cycle. The research process is completed when the results are read by fellow researchers or the general public. Publishing research results is an integral part of a researcher's professional life. In the current research evaluation system, as pointed out by Raju, Adam and Powell (2015), citations are the only public statement of intellectual recognition of the cited author. For all intents and purposes, citations are an indicator of the dissemination of an article in the scientific community and provide a quantitative system for public recognition of work by qualified peers.

Traditionally, the library has played an important role in collecting, organising and disseminating research output. This role has been the bastion of academic librarianship. However, in the current research environment, the academic library has, in the view of the authors, a lot more to offer the research process through the promotion of the researchers and their research output. One of the ways of doing this is through the provision of a bibliometric service.

Bibliometrics is the statistical analysis of bibliographic data, commonly focusing on citation analysis of research outputs and publications, that is, how many times research outputs and

publications are being cited. Further, researchers are using bibliometrics to demonstrate the importance and impact of their research. In an era of tight fiscal control, the demonstration of impact is important as funding bodies are requesting evidence of return on investment. Bibliometric analysis is increasingly becoming mainstreamed as a service provided by the library to measure and assesses the research impact of individuals, and groups of individuals or institutions. Be that as it may, bibliometrics has always been a service provided by academic libraries. However, the level of sophistication of the service has been, at best, very rudimentary.

It is fast becoming an obligation for research librarians to extend their 'service-reach' by exploiting the capacity of bibliometric tools to assist researchers identify areas of research strength and weaknesses and to identify the top performing journals in a subject area. In terms of the former, librarians can work with researchers, especially emerging researchers, to ascertain emerging areas of research. The current tools available can assist emerging researchers identify potential collaborators or competitors and to identify sources of funding. Further, for emerging researchers, bibliometrics provide substantial guidance as to where to publish.

Drummond and Wartho (2009), Riera-Quintero, Padrós-Cuxart and Zuñiga-Ruiz (2012), as well as Bradbury and Weightman (2010), expand on the role of the librarian to include bibliometrics as a research evaluation service. They point out that there is evidence to show that many librarians have stepped forward to help negotiate the landscape of both traditional impact metrics and emerging web-based alternatives. The alternative metrics used to measure value of research output is in its infancy. Lapinski, Piwowar and Priem (2013) advance the view that as altmetrics mature, libraries will help to facilitate an informed dialogue with the various constituencies that will intersect with altmetrics. Such constituencies include both researchers (students and faculty) and the aca-

demographic administrative office (faculty affairs, research and grants, promotion committees, et cetera).

At South African academic libraries that do provide a bibliometric service, researchers are assisted, as mentioned above, with using metrics to support decision-making about where to publish. Librarians also assist researchers with queries relating to h-index, journal impact factor (JIF) and journal citation reports. Such support often involves assisting researchers when they make applications for research rating or when they submit applications for funding. South African academic libraries provide very limited support for altmetrics. In cases where such support is provided, the focus is mainly on Google Scholar Metrics and Google Scholar Citations.

At the University of Cape Town, one of the leading research universities in South Africa, librarians work with the research office to assist the university in its submission of the number of peer-reviewed research outputs to national government. This submission results in a significant financial boon for the university as there are substantial financial rewards for publications in peer-reviewed journals and books. The librarians scan the major databases, including citation databases such as InCites and SCOPUS, for UCT research output and make the results available to the research office to facilitate the claiming of research rewards. Librarians also work with faculties to provide citation count analyses of scholarly output of researchers and academics over a defined period. Data generated for the faculties include scholarly output per researcher, citation count, h-index, field weighted citation impact and publications in top journal percentiles (Raju, Raju & Johnson 2016).

Data managing

Review of research resources and services offered by the libraries shows that libraries, in the changing information landscape, have moved seamlessly from collectors of published scholarly resources to publishers of e-prints and journals through repositories and e-presses. The debate

is whether this is a fundamental departure from the previous traditional role of the academic library or is it a natural progression of the library's role in support of researchers. Providing access to published scholarly resources has been a traditional role of the librarian. The authors argue that providing the technology to access research output is a naturally evolving role for academic libraries: this includes libraries 'publishing' content in repositories.

With regard to digital data Charbonneau (2013) makes the point that a direct derivative of the change in the research landscape is the exponential growth in the volume of data being generated. She elaborates on the importance of the library in this era of data deluge recognising that data is integral to the knowledge base that underpins scholarship, provides insight into the complex world, and informs decisions about the present and the future. Within this changing paradigm, the rapid change in the nature of research has led to a change in the role of academic libraries in supporting data-intensive research. Librarians are exploring the new roles, services and types of collaboration needed to support data-centric research. A further demand for this exploration is the reorganisation, by research funding bodies, of the essential infrastructure and services required to organise and preserve research data. Tenopir, Sandusky, Allard and Birch (2014) maintain that academic research librarians are the most appropriately equipped to provide required research data services such as data management planning, digital curation (selection, preservation, maintenance, and archiving), and metadata creation and conversion.

The 2030 vision of the Association of Research Libraries (2010) and the 2050 vision of the Society of College, National and University Libraries (SCONUL: 2011) highlight the fact that there is a major shift in the use and re-use of data. In these visions, data becomes the critical element for research and the librarian must be skilled to provide the necessary services as mentioned above. Again, these services are com-

mensurate with data becoming the new currency for knowledge creation and innovation.

As pointed out by Tenopir et al. (2013), skilled, knowledgeable and confident librarians will resolve the ambiguity surrounding the roles and specific responsibilities of libraries, researchers, and others involved in the research cycle in managing digital data and other outputs is problematic. Raju, Raju and Johnson (2016) assert that as librarians grow their skills and expertise in data management, they can become uniquely positioned to support data management processes throughout the research life cycle.

Open access practices

As indicated, one of the core services provided by the librarian in rolling out a new suite of research support services is that of providing advice and guidance on repositories and OA publication. The primary purpose of this service is to promote the distribution of scholarly literature for the growth and development of research and society, thus connecting the researcher, society and development. The issue of connectedness highlights the fact that the research process is only complete when the end product is distributed as widely as possible. In this globally connected information society, the researcher is both the user and creator of information or knowledge as access to current information is essential for the production of new knowledge. Hence, OA becomes critical both at the beginning and at the end of the research cycle - from the conceptualisation of the research problem to the distribution of the research findings.

OA practices have significant benefits for research and the researcher in that they have the capacity to improve the visibility of, and equitable access to, research output, thereby impacting on society and contributions to further research. Supporting the issue of improved visibility, the UK's Jisc (formerly the Joint Information Systems Committee: 2013) asserts that:

- Universities must increase the visibility of their research to demonstrate the contribution they make to the knowledge economy, improve their chances in the competition for government research funding and position themselves well to work with industry or third sector partners.
- An open access repository or journal is a way for authors to make their research papers freely available online. Studies have shown that such papers are more frequently cited than those solely available via subscription-based journals.
- Open access benefits not only researchers and their institutions, but the economy and society at large, as the outputs of publicly-funded research are available for all to use.

Reinforcing the need for libraries to provide OA services is Lee-Hwa, Abrizah and Noorhidawati's (2012) view that open access to research makes researchers more productive and research more effective. Further, these authors assert that institutional 'repositories have become a common platform for the academic institutions to store, share, disseminate and preserve knowledge'.

Institutional repositories, as pointed out by Parker (2012), showcase a university's research output and provide equitable access to scholarly literature. She also claims that in many cases, the institutional repository is an exemplar of a (usually library-based) research support service. It suits the needs of both researchers – in providing a single place to manage all of their publications – and the university, as a comprehensive record of its research output.

To assist researchers with disseminating the results of their research through scholarly channels, libraries are increasing their offerings of a publishing service to the research community. This gold route publishing service (institutional

repositories are the green route)¹ is fast becoming infectious. Park and Shim (2011) point out that several libraries have recently launched library publishing services to support scholarly communication dissemination. Some of the libraries that have implemented publishing services include Columbia University Library, Cornell University Library, Duke University Library, Massachusetts Institute of Technology (MIT) Library, and University of Calgary Library. South Africa's academic libraries have also made provision for gold open access publishing services and this is discussed below.

A second tier of support for publishing in OA journals is through the creation of a fund to pay author page fees. Park and Shim (2011: 82) report that Cornell University Library organised a task force on OA publishing through which institutions pay a publication fee for their faculty who publish in refereed OA journals. Likewise, in South Africa, Stellenbosch University (SU) Libraries have developed an OA business model that helps authors publish in OA journals. SU has an article processing charges (APCs) fund. The Universities of Cape Town and Pretoria also provide support for gold open publishing via APCs.

The OA movement has grown by leaps and bounds and research support librarians have been, and still are, at the epicentre of that growth. Riera-Quintero, Padrós-Cuxart, and Zúñiga-Ruiz (2012) state that in this fast expanding OA environment, librarians are guiding researchers on OA publishing and the different types of licences that could be used for their publications. Research support librarians are actively providing advisory services on the different channels for the publishing and dissemination of research results.

South African research support librarians and academic libraries are not exempt from provi-

sion of these new services. Four of the 25 South African public higher education libraries offer a hosting service (or act as publisher) for OA journals. Although publishing is compatible with librarians' traditional strengths, there are additional skill sets that librarians have been scrambling to acquire in order to provide robust publishing services to their academic communities. The software that is being used by libraries that are providing this publishing service is Open Journal Systems (OJS). As very early adopters of OJS and having self-taught OJS skills, Stellenbosch University, following the advice of Skinner, Lippincott, Speer and Walters (2014) that new OJS skills are necessary to provide this service, facilitated a training workshop that was delivered by the creators of the OJS software, Public Knowledge Project (PKP). This was the beginning of the OJS skills development in South Africa.

As early adopters, SU has taken the lead and began carving out a path for the use of OJS. Three other academic institutions followed in their footsteps. In October 2011 SU, via the library, launched its SUNJournals platform. This publishing platform currently hosts 20 journal titles.

Raju, Smith, Talliard and Gibson (2012) point out that SU provides a suite of services relating to its role as 'the library as publisher'. One such service is the distribution of unique Digital Object Identifiers (DOIs). As a registered member of CrossRef, an international DOI registration agency, the SU Library has the capacity to assign a DOI to each article. The DOI ensures authenticity, which reinforces the trustworthiness of the journal title. Further, CrossRef also ensures that the DOIs are harvestable by leading harvesting institutions.

The other three universities that offer an open access publishing service are the University of South Africa (Unisa), the University of the Western Cape (UWC) and the University of Cape Town (UCT). Unisa publishes the following five titles via OJS:

¹ Open access is dominated by two streams: the first is that of institutional repositories which is referred to as the 'green route' and the second is publishing directly with an open access publisher. The latter is referred to as the 'gold route'.

- *Journal of Philosophy in Schools;*
- *International Journal for Educational Integrity;*
- *The Journal of Educational Enquiry;*
- *The Journal of Student Wellbeing;*
- *Teaching and Learning in (Higher) Education for Sessional Staff.*

UWC publishes two titles using OJS and these are: *Critical Studies in Teaching and Learning* and *Journal of Student Affairs in Africa*.

UCT has begun its OJS journey with the publication of an undergraduate journal *UR@UCT: Undergraduate Research Journal*. As a research intensive institution, UCT's ambition is to increase the number of postgraduate students through growth in the pipeline of undergraduate students. UCT pursues the principle that research begins at the undergraduate level and hence the objective of this journal is to give undergraduate students an opportunity to get published.

Further, the creation of *UR@UCT: Undergraduate Research Journal* provides a conduit to showcase scholarly output from undergraduate students. The journal is also meant to encourage and explore intellectual capabilities beyond the classroom and provide a forum for the exchange of research ideas. The opportunity to publish in a journal allows undergraduates to explore creating new knowledge and career opportunities in the academic world. Publishing research as an undergraduate provides a bridge between knowledge and experience.

In expanding the scope of its open access publishing agenda, UCT is experimenting with a pilot initiative which publishes OA monographs. Currently, academics at UCT are placing their unpublished monographs on websites for use by fellow researchers and practitioners. The possibility of using Open Monograph Press (OMP) to convert the websites into published monographs has become a distinct reality and is being currently piloted.

The pilot is guided by the announcement by Willinsky (2009) that the OMP software platform

is available for use to manage the editorial workflow required for the publication of monographs, edited volumes, and other scholarly editions. The workflow allows for internal and external reviewing and editing. Using open source software, the system is freely available to the academic community, and is designed to reduce clerical costs and supplies, as well as overheads, with libraries becoming involved in hosting the system and scholars able to play a more active role as series editors in the review process. The title, *The quest for a deeper meaning of research support*, is being piloted for publication using OMP by UCT Library.

Conclusion

Bourg, Coleman and Erway (2009) hold the view that librarians must pursue their position as critical partners in the research enterprise by anticipating, understanding, and addressing the challenges and opportunities inherent in new research practices. Their argument is that if academic librarians fulfil their partnership agenda, they will ensure that current and future researchers will have the support they need to navigate and exploit the full potential of evolving digital scholarship. Supporting this view is the proposal by Corral, Kennan and Afzal (2013) that libraries must design and develop tools to support discovery, offering a new vision for the role of the librarian on campus as research partner and innovator, strengthened research partnerships on campus, and redefined subject specialists to shift their emphasis from collections and reference to 'services'.

None of the new services that libraries are offering (bibliometrics, altmetrics, data management and OA services) are completely new but are now being offered at an unprecedented level that is viewed as revolutionary as opposed as being evolutionary. Librarians are taking on the challenge of providing these revolutionary 'new' services. The fact that in-depth bibliometrics services are becoming mainstreamed and that librarians are maximising their skills and training to provide data management services is testi-

mony to librarians engaging their partnership status. The provision of publishing services including publishing content in repositories and in gold OA journals is simply another level of information dissemination. The dissemination is to a much broader community than that of the institutional users with the 'user' community now being global.

The librarian as reactive reference service provider is fast becoming obsolete. Despite the fact that the transition from reactive service provider is difficult, librarians are embracing change and are taking their rightful place as partners in

the research process. The analysis of bibliometrics and the guidance as to where to publish for commensurate impact, the guidance and advice on data management and the dissemination of research results (including data) via OA coalesce to consolidate the librarian's position as a partner in the research process.

In alignment with the provision of 'new' research support services, the status of the research support librarian is changing from reactive reference provider to a proactive research partner.

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