Institutional Report 1

Delivering a research mission in an ICT-mediated information age: The case of the University of Cape Town

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Introduction

Research publication in a digital world

Although progress has been made in HE provision in Africa, it is obvious that over the last few decades some things have not changed. There has been no significant break in relations of knowledge production between the colonial and post-colonial eras. African universities are essentially consumers of knowledge produced in developed countries. In essence what is being defined as 'knowledge society' means two different things to the developed world and the African continent. The former are the producers and the latter are the consumers of knowledge, which seriously undermines the fostering of the multicultural nature of Higher Education, as virtually all partnerships are one-sided.

This is not only negative for the African continent, but it also deprives global higher education of access to the indigenous knowledge of Africa, and it deprives Africans of the opportunity to develop their indigenous knowledge system and strengthen their relationship to western and eastern knowledge systems.

— Blade Nzimande (South African Minster of Higher Education and Training, at the UNESCO World Summit on Higher Education, July 2009)[1]

In the digital realm, there is no reason to plan to enhance scholar to scholar communication without considering how to improve the knowledge, the creation and scientific output of the university to the public. This is not just for the individual public interest and good – universities must aim to meet the challenges of modern society. How better than to ensure that we have an adequate publication and communication system?

— Catherine Candee (Executive Director, Strategic Publishing and Broadcast Initiatives in the office of the president of the University of California, 2008)

South African universities face a complex set of challenges in the first decade of the 21st century. Foremost among these is the transformation imperative that has driven South African national higher education planning in the wake of the first democratic elections which took place in 1994. Another set of challenges is posed by the impact of a global networked society on the ways in which research is being conducted and how it is being communicated worldwide. Given the radically enhanced potential for low-cost and widespread distribution of information in a digital scholarly world, these two perspectives could come together in a more democratic vision for scholarly communications that could also impact on the university's transformation. In this vision, '[t]he possibility of sustainable, widely accessible and effective communications by individuals or groups, organized on- or offline, makes possible direct democratic discourse. It creates direct means for the acquisition of information and opinion. It offers the tools for its production and dissemination to a degree unattainable in a mass-mediated environment, no matter how well regulated' (Benkler 2003a: 1263).

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[1] http://www.education.gov.za/dynamic/dynamic.aspx?pageid=306&id=8720

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The University of Cape Town

This report provides an overview of policies, practices and infrastructure at the University of Cape Town (UCT) related to the use of Information and Communication Technologies (ICTs) for research publication. Because publishing is a matter of strategy, the report will primarily be concerned with the extent to which UCT is aligning its scholarly communications with its research strategy and with national priorities for higher education. In other words, are the ways in which UCT is publishing its research truly fulfilling its research mission? And are the new possibilities for the publication of research results being used effectively to deliver the targets set for the university in national policy? Is the potential of ICTs being effectively harnessed to reach the range of audiences that UCT research aims to address? Is UCT taking maximum advantage of the potential of communication technologies to demonstrate the ways in which its research impacts on national development goals? Is it taking best advantage of the potential to position the university in a competitive global higher education environment?

This report will argue that UCT is a typical South African university in this regard. It tends not to see the dissemination of its own research as a strategic priority, or as its responsibility, rather than that of outside publishers. A number of individuals and departments are taking advantage in a variety of ways of the potential offered by internet communications, but at institutional level the goal is to ensure that academics produce the maximum number of publication outputs recognised and rewarded by the Department of Education. These are articles in journals in two international citation indexes, chapters in 'accredited' books and peer reviewed conference proceedings. In other words, publication policy has a narrow focus on publication for prestige – particularly 'international' prestige, to the potential detriment of the university's public good mission, which takes second place.

In this environmental scan of UCT, the OpeningScholarship project uses UCT as a case study of a leading African research university as it grapples with defining its research mission in a rapidly transforming higher education context. Both UCT's African context and the impact of a changing research communication environment are important. This survey of the institution's responses to the potential of ICT use for the publication of its research will therefore seek to identify where there are issues and solutions that are particular to UCT's developing-country context. The report will review the role that research dissemination plays in UCT's formulation of its research mission and to what extent UCT is using its ICT infrastructure and capacity to ensure the effectiveness, reach and impact of this research.

This report explores a number of questions in relation to the use of ICT for research publication at UCT:

- In the global academic environment, funding agencies (including major UCT donors like the National Institutes of Heath and the Wellcome Trust)[2], national governments (including Australia, the US the UK and the European Union)[3] and universities across the world are engaging with the question of access to the results of publicly-funded research. How is UCT, as a leading African research university, engaging with this debate and, given the concerns of regional African university organisations, with the question of the global knowledge divide?
- In a context in which the trend is increasingly for universities to engage more actively with the distribution of their own research results (Swan and Carr 2008), as witnessed by developments at world-ranking universities like Harvard, MIT, Stanford,

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[2]   For a digest of the open access policies of research funders, see the Sherpa-Juliet website: http://www.sherpa.ac.uk/juliet/index.php?fID=0

[3]   For a review of national policy developments on open access, see the website of the Alliance for Taxpayer Access: http://www.taxpayeraccess.org/international.html

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and the University of California, to name but a few, to what extent is UCT engaging with changing modes of research publication?

- How are ICTs being used at UCT for research dissemination? Could they be used more effectively? What could UCT learn about the potential ICTs offer in terms of more effective research dissemination, in light of what is happening in the rest of the world? And how would solutions needed at UCT differ from those being applied in developed countries?
- What support is the university providing for research publication, by way of integrated institutional policy, for the use of ICTs for more effective research dissemination? Is there support for the whole range of publications being produced by UCT academics and departments?
- Is ICT and administrative support being provided for the provision of technical platforms for research publication and for the creation of research repositories?
- Does the university have a coordinated university-wide policy for ensuring effective research communications involving all the players across the university: scholars, faculties, administration, librarians and research students?

If one were to sum up all these questions into one strategic and overarching goal, one would ask: **how well is the UCT using the potential offered by emerging models of open access online publishing to promote its research excellence, demonstrate the contribution its research makes to resolving urgent national priorities and profiling its particular contribution as an African university?**

Three core understandings underpin these questions.
- The first is that ICTs afford new opportunities for the effective dissemination of research, offering the potential for greater impact and global reach in ways that have not been possible with print communications.
- The second is that dissemination is an essential part of the university research mission – if research is not disseminated, then the benefits of that research are dissipated and investment wasted. Online research communications now make this vision possible.
- The third is that the very nature of what constitutes scholarly publication is changing. Where conventional print publication offered a narrow range of publication outputs – principally journal articles, books and conference proceedings – a much wider range of publication products is emerging in the digital environment (Brown et al. 2007). This means that a university like UCT is able to provide access to and profile its entire research contribution.

The broader context for this institutional survey is provided by international and national environmental surveys that have reviewed developments in the rapidly changing and increasingly digital world of research communications. They have charted, in particular, the use of digital technologies for the growth of open and collaborative modes of scholarly communication and the potential to increase the impact of research dissemination, particularly for developing countries. The national survey also identified the barriers that national policy places in the way of effective and wide-ranging research communications. A separate OpeningScholarship institutional survey with accompanying case studies reviews the institutional context for the use of ICTs for teaching and learning.

A brief summary of the key findings of the OpeningScholarship international and national surveys of the changing research environment will help to frame the discussion of UCT's institutional responses to the challenges outlined above.

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The international and regional context of research publication

This review of research production and scholarly publishing at UCT can be read against the backdrop of international, regional and national initiatives that seek to use 21st-century technologies to change the paradigms of research practice and scholarly dissemination.

Globally, a dissatisfaction with the existing scholarly publishing system has been a key driver for change. Over the past five or six years, in particular, there has been a reaction to what a large sector of the scholarly community sees as the restrictiveness and global inequity of the current scholarly publishing system, dominated as it is by commercial academic and journal publishing multinationals. Steeply rising prices coupled with increasingly restrictive licensing practices for digital content have led to active resistance from leading university libraries in the global North and reactions against what is perceived as a 'serials crisis'.

In the global South, there have also been developments protesting the dominance of Northern Hemisphere intellectual property regimes and modes of dissemination. Developing countries have raised major concerns in the World Intellectual Property Organization (WIPO), promoting a Development Agenda for more equitable access to information in the developing world.[4] In the first half of 2009, there are signs of real movement in the international agencies towards addressing these development issues. Just one example is the ratification in May 2009 of the Global Strategy and Plan of Action on Public Health, Innovation and Intellectual Property[5] at the World Health Organisation, designed to create a more equitable framework for addressing the diseases that affect the developing world. This Plan supports, in a core research area that is one of UCT's major strengths, global collaboration and the sharing of research data. It promotes open access to publication and data, voluntary provision of access to drug leads, open licensing and voluntary patent pools.

There is a range of initiatives taking place across the developing world, especially in the second-economy countries. In Latin America, the Scientific Electronic Library Online (SciELO)[6], based in Brazil, provides digital platforms for open access journals and other scholarly publications from the region. In India, scholars in the Alternative Law Forum in Bangalore research copyright and the media, providing revisionary understanding of the power relations inherent in the global IP system[7]. Also in India, there is a movement among the national academies and institutes of science for open access to Indian research, while the open access publisher, Medknow, is proving very successful in raising the profile of Indian research worldwide.[8]

As the recently appointed Scholarly Communications Officer of Harvard University, the distinguished computer science scholar Stuart Schieber, has pointed out, the serials crisis is not just a matter of cost, but also a question of access. And if Harvard, which boasts the world's largest academic library, is not immune to this pressure, he argues, the academic world is facing the real failure of a business model. What is developing in its place is more than simply another business model, but a vision of how the potential of the internet and digital media can be used to create a more democratic and participatory approach to scholarship and create wider access to the world's research (Schieber 2008).

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[4]   These negotiations are regularly tracked in the IP Watch newsletters, See for example, an account of the progress made and the difficulties encountered in April 2009: http://www.ip-watch.org/weblog/2009/05/04/wipo-members-move-ahead-on-development-agenda-implementation/

[5]   http://apps.who.int/gb/ebwha/pdf_files/A61/A61_R21-en.pdf

[6]   http://www.scielo.br/

[7]   http://www.altlawforum.org/RESEARCH_PROJECTS/IP-Knowledge%20Culture%20Commons

[8]   http://www.medknow.com/

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The landscape of this new scholarly publishing environment is one of digital communication, open access journals, repositories of a wider range of scholarly content, and integrated institutional, national and global cyberinfrastructure for interactive research communications. This vision of open research communications is progressively being endorsed by international research agencies, governments and universities across the globe. What's more, the advantages of open access scholarly communications are proving particularly powerful for developing-country universities.

Southern Africa

Issues relating to the serials crisis have also impacted in the southern African region, where the Southern African Regional Universities Association (SARUA) has identified the existing paradigms for research and scholarly publication policy in the region as a major obstacle which limits the production and dissemination of research. As Abrahams et al. (2008:3) state:

> The current frame of new knowledge and peer production, with requirements to publish in a hierarchy of academic journals, placing ISI journals at the top of the hierarchy, local journals at the bottom of the hierarchy, and excluding 'grey literature' from acknowledgement in institutional promotion and reward systems, may have contributed to the extremely low rates of production. In reality, universities experience the absence of a research value chain which could encourage high levels of research output at all levels of the hierarchy. Only scholars who publish at the top end are valued, thus 'driving out the good in favour of the great'.

The proposed solution to this situation at a regional level is to use ICTs and open publication to provide a new vision of scholarly communication for development, which could see southern African scholarship 'engaging with the global knowledge economy on its own terms' (Abrahams et al. 2008:6). SARUA is therefore envisioning a change process that could use open knowledge platforms for the creation of open access journals, scholarly publishing advisory services, online journal management systems, institutional repositories, and a southern African publication index to re-assess the notion of impact for scholarship from the region.

South Africa

In South Africa, the OpeningScholarship survey of national policy has revealed an often contradictory situation. The key driver of research practice and research dissemination is the National Policy Framework for higher education and national research that has been formulated since the first democratic elections in 1994, primarily through the Department of Education (DoE) and, as far as research is concerned, through the Department of Science and Technology (DST).[9] There are, however, contradictions within and between government departments when it comes to the ways in which they have responded to global changes, particularly in relation to the use of technology, new copyright models and access to knowledge.

The DoE's policy for the measurement of research outputs (DoE 2003) entrenches the 'traditional' publishing system of indexed journals and citation counts. This is framed in an acceptance of 'international excellence' as being assured by publication in journals in the internatonal indexes (and to a lesser extent through accredited local journals) and is therefore linked to a scholarly publishing system dominated by commercial publishing conglomerates and proprietary copyright models.

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[9]   The balance between the two Departments looks set to change in 2009, with the creation of a Ministry of Higher and Further Education,

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However, initiatives are being implemented under the auspices of the DST, which seeks to implement a more open approach to knowledge production and dissemination, most notably through its financial support for the Academy of Science of South Africa (ASSAf) and its Committee for Scholarly Publishing in South Africa (CSPiSA). This project is implementing a comprehensive vision for the growth of scholarly publishing in South Africa using a model of open access publishing. (Gevers and Mati 2006). A national platform is being created for South African scholarly journals, managed in partnership with the Scientific Electronic Library Online (SciELO) in Brazil, which will provide open access to leading South African journals and produce regional and national impact metrics. A programme of rolling peer review of South African accredited journals, support for raising standards of editorship and journal management, and the creation of research repositories all aim to raise the quality and increase the national and global impact of South African research publication in an open access framework.

The DST is also involved in researching a policy initiative for Access to Scientific Data from Publicly-Funded Research, in line with South Africa's adherence to the eponymous Organisation for Economic Co-operation and Development (OECD) directive. In this regard, the DST is also supporting, with the National Research Foundation (NRF) and the Meraka Institute, the creation of a formalised Network of African Data and Information Curation Centres (NeDICC)[10]. The vision, going forward, is for an integrated cyberinfrastructure for the support and delivery of South African scholarship in a research environment that is becoming increasingly reliant on advanced computing and data sharing. [11]

However, in an apparently a completely contradictory mode, the DST at the end of 2008 passed the Intellectual Property Rights from Publicly Financed Research and Development Act[12], a piece of legislation which emulates the 1980 Bayh-Dole Act in the US and locks universities into a system for commercialising and patenting any innovation that is capable of patenting.[13] The proposed Regulations for the implementation of the new South African IP Act provide for a stringent bureaucratic process through which research would need to be filtered to ensure maximum IP protection and commercialisation – a system which potentially compromises open and collaborative approaches to innovation and open access to the research linked to such innovations. In the system proposed by the Draft Regulations, open innovation can take place only after permission has been granted by government.

The DST research policies for universities are implemented through the NRF, which has developed the research strategies for South African higher education and created a number of projects to drive the delivery of national research goals through higher education institutions.

South African universities

South African universities and research councils are responding to the global, regional and national changes mentioned above in a variety of ways. The Human Sciences Research Council (HSRC) has become a pioneer in open, electronic dissemination through the HSRC Press, which has developed an internationally recognised model for open access publication

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[10]   Consult the 1st African Digital Management and Curation Conference website for further background and context on this initiative: http://stardata.nrf.ac.za/nadicc/index.html

[11]   See the opening speech by the Minster of Science and Technology and the closing presentation by Roy Page-Shipp,:NeDIC, the way forward, at the First African Digital Curation Conference, 2008 . http://stardata.nrf.ac.za/nadicc/programme.html

[12]   http://www.info.gov.za/view/DownloadFileAction?id=83149

[13]   For a more detailed exploration of the Bayh-Dole Act and its impact on Developing Countries, see So et al. (2008) at http://www.plosbiology.org/article/info:doi/10.1371/journal.pbio.0060262

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of scholarly books, with parallel print products for sale.[14] The University of Pretoria, with the support of the university administration, has created an institutional repository for theses and dissertations and for the scholarly output of its academic staff and in 2009 became the first university in Africa to enact an institutional mandate for the deposit of journal articles.[15] The Council for Scientific and Industrial Research (CSIR), in conjunction with the University of Pretoria, is progressively implementing the open archiving of its research. The University of Johannesburg, through the Deputy Vice-Chancellor for Research, is beginning to engage with a vision for open access publication as a way of profiling the newly-merged institution. Ten other South African universities have also created institutional repositories (Van Deventer and Pienaar, 2008).

There has, however, not been much change at institutional level in the engagement of universities with scholarly publishing initiatives. The university presses remain bound by financial requirements to 'break even' and publish high-quality print products, albeit on a small scale. Only the University of South Africa (UNISA), through UNISA Press, has a journal publishing programme; but it too has only engaged with open access publishing in a limited context. Despite this, there is growing momentum among individual initiatives for creating an increasing number of open access journals, managed either by research units or by a newly-established commercial open access publisher, Openjournals Publishing[16]. Fifteen peer-reviewed South African open access journals are currently listed in the Directory of Open Access Journals.[17]

The question of intellectual property rights

New technologies and their impact on the nature of scientific research pose various challenges for UCT's approach towards intellectual property. The global movement towards open access publishing; in which traditional, locked-down forms of copyright are being challenged by alternative forms of licensing such as Creative Commons are encouraging academics and institutions to broaden their thinking and policies around copyright.

Intellectual property rights (IPR) and copyright in the research arena are to a large extent embedded in traditional proprietary forms of publishing and a competitive approach to research excellence. As Guédon (2008a:16) points out, the rules governing competition between scientists 'depend in part on the rules that govern journal competition' – a system 'rigidly codified by citation metrics and, in particular, the impact factor'. The set of tools which determines citation metrics, the Web of Science, covers only a fraction of all scientific and scholarly journals and is owned by a private company accountable only to its shareholders … a situation which understandably raises some concern and cements the link between research published by large commercial publishers under traditional copyright methods and commercial rating systems (such as the Web of Science).

South African academics (like their Northern counterparts) have become so accustomed to the citation scoring system promoted by the Web of Science that the ratings arising from this system are to a large extent seen as 'incontrovertible truth' – as opposed to it being just one form of evaluation developed and controlled by a commercial company. Publishing in internationally indexed journals under traditional proprietary copyright is therefore viewed as *de rigueur*; this despite the global move towards open access publishing with its rewards of increased exposure and potential for impact in resource-poor contexts.

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[14]   http://www.codesria.org/Links/conferences/electronic_publishing06/papers/Garry_Rosenberg.pdf
[15]   For a fuller account of UP's adoption of an open access mandate, see Eve Gray's blog, Gray Area, at http://blogs.uct.ac.za/blog/gray-area/2009/05/25/a-mandate-at-the-university-of-pretoria
[16]   http://www.openjournals.net
[17]   http://www.doaj.org

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And so, in common with colleagues across the world, South Africa scholars in search of prestige aim to publish in proprietary journals owned primarily by global media conglomerates. When they sign away their copyright, what these scholars do not generally recognise is that what they are subscribing to is not some natural hierarchy of excellence, but the leverage of IPR in research for ever-increasing profits. This in turn generates problems for the university in the guise of steeply rising subscription costs for scholarly journals.

Open access publication, on the other hand, builds on the idea of the public good; of the importance of democratic access to knowledge and, implicitly, on the idea of shared participation in the research process.

The dominance of the proprietary IPR system – along with the problems of scientific authority and transformation that it brings in its wake -   is likely to be further entrenched by the enactment of the Intellectual Property Rights from Publicly Financed Research and Development Act, 2008, which has been controversial and widely criticised for its restrictive provisions for a closed and proprietary model of intellectual property system for university research.

In terms of this Act, a National IP Management Office has been established to interact with Offices of Technology Transfer, which universities are obliged to establish – a function which is currently being carried out at UCT by Research Contracts and IP Services (RCIPS). RCIPS is currently in the process of revising the University of Cape Town Intellectual Property Policy[18] in line with new IP Act. While UCT's IPR systems and processes are generally embedded in traditional copyright models, RCIPS has shown a willingness to engage with Creative Commons licensing and the potential of more open copyright models, providing information on its website for academics and students wishing to use Creative Commons licences.[19]

The structure of this report

This report frames the context for UCT's use of ICTs for research publication by first reviewing UCT's mission statement and strategy as a research-led African university and examining what demands this makes on research publication infrastructure. The report also engages with the quality assurance audit conducted at UCT in the context of the South African Higher Education Quality Committee's review of South African universities. Through this filter, the report reviews an external evaluation of UCT's performance as a research university and the implications that this might have in terms of its research publishing requirements.

The report then reviews UCT's research responses to national policies impacting on research publication in South Africa. There are two clear strands to UCT's development of its research agenda, and both of these are explored. One is concerned with the institution's international competitiveness, which is driven by national policy for research publication and by research strategies developed by the NRF for the ranking of South African scholars. UCT scores very well in these competitive rankings, having established itself as what is probably Africa's leading research university. This in turn predicates the maintenance of a conventional scholarly publication strategy, supporting increasing levels of authorship in indexed journals and other accredited publications, with a strong emphasis on international publication.

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[18]   http://www.uct.ac.za/downloads/uct.ac.za/about/policies/intellect_property.pdf
[19]   http://www.rcips.uct.ac.za/ip/copyright/creativecommons/

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The other strand of UCT's research strategy deals with its recognition of the need for research approaches that are responsive to national and regional development goals. This is driven by programmes such as the NRF's South African Research Chairs Initiative[20] and UCT's Signature Themes Initiative[21]; which are collaborative, inter-disciplinary programmes in line with global trends for 21st-century research. UCT has also conducted an evaluation of its research groupings, resulting in a list of over 50 accredited research initiatives that respond to economic and social imperatives for South African development. What is missing, however, is a university-wide evaluation of the needs for integrated ICT infrastructure and dissemination systems for this kind of research.

What emerges is that, while there are institutional-level policies and implementation plans for research outputs for global research competitiveness and the individually-based traditional research outputs arising from such initiatives, these relate to authorship rather than resulting in support for publication activities. A very different picture emerges when it comes to research initiatives for more socially committed research. In the case of these research interventions, there appears to be no institution-wide framework for the research outputs that are produced. A large volume of publications appears to be being produced, although this is difficult to track adequately in the absence of any institutional engagement with these publishing activities. The quality in many cases appears to be high and most appear to have at least an implicit open access approach, with a range of publications placed online. These are, however, scattered among various departmental and research grouping websites, making them difficult to find and diminishing the impact they have on profiling the institution as a whole.

Finally, the report examines how UCT seeks to manage its social responsiveness mandate through the Institutional Planning office and how this responds to development-focused research. Although the university regards research, teaching and learning and social responsiveness as three separate pillars of its 'research-led' mission, there is an argument to be made that this is in fact a mainstream research function. However, in the South Africa context and in the case of UCT, it is not yet being fully recognised as such. This in spite of the fact that some leading academics and researchers at UCT are suggesting that this kind of research and its dissemination models might well prove to be an international standard for excellence in developing-world research.

An expanded view of research publication

Something that has to be dealt with in any review of 21st-century scholarly publication is the expanded conception of what this involves. A traditional approach would suppose that 'scholarly publishing' means the production of journals, conference proceedings, monographs and scholarly books, in print or digitally. However, as the potential of digital media has become better understood and as research approaches have changed in response to an increasingly digital research environment, what constitutes recognised scholarly publication has also changed. This has manifested itself in the following ways:

- There is a decreasingly clear distinction between communications systems for research in progress and the publication of completed research. With research being increasingly collaborative, inter-disciplinary, inter-institutional and international, universities find themselves addressing the needs of research projects to manage complex communication systems and the maintenance of research results across institutions. There is also a greater continuum between research in progress and

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[20]   http://www.nrf.ac.za/sarchi/index.stm
[21]   http://www.researchoffice.uct.ac.za/strategic_initiatives/themes/overview/

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publications that emerge from that research, with both relying on curation and distribution through publishing platforms.

- Boundaries between formal and informal communications are breaking down, with Web 2.0 social communications such as blogs and wikis forming part of the overall offerings of research publishers (including major proprietary publications such as *Nature*).

- The creation of research repositories leads to the aggregation of publication at departmental and institutional level, with potential for national and international harvesting of these resources through open access repositories and subject archives. This in turn provides for the widest possible distribution of the accumulated research publications of an institution – published by outside publishers and by the university itself. This can be a useful tool in profiling a university's research contribution.

- There is an increased tendency for universities to take on a wider range of research publication activities themselves, from the provision of technical platforms for research publication to active support for editorial and publishing activities.

- The digital environment is not as constrained as print, allowing for the online publication and distribution of primary resources, illustrative material, multimedia, archival and heritage resources, and underlying data.

- Given the increasing volumes of data that are being processed in modern research and given the increasingly interdisciplinary nature of much research, there is a need for the management of research data across the institution, between institutions, nationally and internationally. This becomes a publishing issue as publishers often require that links be provided from publications to underlying data resources and that there be an interpretative layer between publication and data. The provision of cyberinfrastructure for research is becoming an issue at national and international levels, with universities needing to plan their own interfaces with such national-level and international systems.

When research publication is discussed in this report, one therefore needs to be aware of its potential for expanded interpretation. While it is beyond the scope of this report to deal in any detail with the question of research communications in the broadest sense – as communications in the *process* of research – the term 'publication' needs to be understood in its expanded sense.

Methodology

The context for the institutional survey of UCT's use of ICTs for research communication was provided by international and national environmental scans charting developments at these levels.

A qualitative approach was taken to researching the research publication environment at UCT. Empirical evidence for this report was gained in three ways, namely: desk-top analysis of UCT publications and documents; unstructured interviews with members of the Research and Institutional Planning offices; and quantitative data gathering. Quantitative data-gathering took place from the DoE's list of accredited journals and the Thomson Scientific and IBSS journal indexes; the ASSAF's in-depth review of scholarly publishing in South Africa (ASSAF 2006), and from an on-site audit in the UCT Library to establish journal editorship at UCT.

Desk top-analysis was conducted of the online[22] and paper-based UCT Research Handbook, the online[23] and paper-based UCT Research Report 2006 (UCT 2007b), UCT's

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[22]   http://www.uct.ac.za/research/office/handbook/
[23]   http://www.research2006.uct.ac.za

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human resources policies (including the rate-for-Job policy), letters sent by the UCT Research and Innovation Office to the Higher Education Policy and Development Support division of the DoE, and other key policies and publications identified. The Social Responsiveness programme at UCT was discussed in an interview with the Director of Institutional Planning. The Audit Report conducted in 2005/06 by the Higher Education Quality Committee (HEQC) of the Council on Higher Education (CHE) provided valuable insights into the considerable strengths of UCT's research policies and structures and also highlighted some weaknesses, which are being systematically addressed across university structures through a Quality Improvement Plan for 2007–2010.

This documentation was reviewed against the background of international and national developments in policies and practices for scholarly publication reviewed in the environmental scans that provide the contextual framing for the OpeningScholarship project.

Unstructured interviews were conducted at UCT with the Director of the Research Office, the Publications Count Manager and the Cluster Manager of Research Development. Semi-structured interviews were also conducted with four journal editors on UCT campus and members of a department wanting to launch a new online, open access journal as well as with the publishers of UCT Press, which is owned by Juta Academic Publishers.

An inventory of journals emanating from UCT and of UCT academics who serve as editors of DoE-accredited journals was established by analysing the DoE's list of accredited journals, details listed in print copies of journals in the UCT Current journals library, documents made available to by the Research and Innovation Office, and from the ASSAf listing of South African scholarly journals.

2. UCT – a research-led university

The University of Cape Town, founded in 1829, is South Africa's oldest university and is regarded as one of Africa's leading research and teaching institutions, performing well in ratings of international and national research excellence. However, a review of UCT's institutional landscape provides a more complex perspective as UCT seeks to combine its vision for research excellence with its recognition of the need to respond to the transformation agenda that has driven South African higher education policy in the 15 years since the first ANC democratic government was elected in 1994.

The university mission

In its mission statement,[24] formulated in 1996 – just two years after the election of the new government and at a time of intensive policy debate about the shape of South African higher education, UCT describes itself as follows:

> *Our mission is to be an outstanding teaching and research university, educating for life and addressing the challenges facing our society.*

While the mission statement clearly states the triple commitment of the university to teaching and learning, research and social responsiveness, UCT's vision of itself as a research university is central to its mission. UCT is a particularly interesting case study for the ways in which it seeks to balance and combine the creation of an African vision and a transformative

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[24]   http://www.uct.ac.za/downloads/uct.ac.za/apply/handbooks/hum_gradschool_09.pdf

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mission with its position in the rankings of international scholars. As it articulates its mission, UCT aims to:

- Recognise its location in Africa and our historical context.
- Claim its place in the international community of scholars.
- Strive to transcend the legacy of apartheid in South Africa and to overcome all forms of gender and other oppressive discrimination.
- Strive for inter-disciplinary and inter-institutional collaboration and synergy.[25]

It is perhaps worth noting that the time at which UCT brokered this vision of itself was exactly the period in which the internet was beginning to take off, near the bottom of a steep curve in usage, from 16 million users in 1995 to 1.2 billion in 2008.[26] While the role of ICT use in the university has been a central theme in the intervening years, and UCT has been forward-looking in its ICT policy for teaching and learning, this report will argue that ICT application has been less well defined in relation to research – and particularly the dissemination of UCT's own research – than it has been in teaching and learning.

UCT is, in mid-2009, in the process of revising its mission statement, with a draft under discussion with the university community. As far as scholarly communications go, the most relevant statement in the draft mission   is that UCT should be 'a sought after destination for African generated knowledge and expertise which addresses problems of African and global significance.' A question that needs to be asked – and that will be addressed in this report - is to what extent research publication values and reward systems enshrined in the university's policies and strategies do in fact deliver this vision.

A transformation agenda

UCT's description of its transformation agenda encapsulates a dynamic approach that is reflected in the formulation of its attitudes towards research development:

> UCT views transformation as a multifaceted and integrated process by which the university continuously renews itself in an ongoing effort to represent, in all aspects of its life and functions, the vision and ideals of its mission and values.[27]

The major focus of transformation at UCT – and in national policy – is on equity and redress to reverse the apartheid heritage in the demographic profile of the university and in institutional culture. However, UCT's research mission also reflects a strong response to national policies that seek for a research contribution to transformation through a focus on national development needs and an engagement with what it means to be an African university.

As just one example of such a transformation agenda in South African higher education, the DoE's report *Transformation and Restructuring: A New Institutional Landscape for Higher Education* asks that universities should 'address the challenges associated with the phenomenon of globalisation, in particular, the central role of knowledge and information processing in driving social and economic development' (DoE 2002). This approach is also echoed in the DST's White Paper on Science and Technology (1996) that speaks of the need to address 'more effectively the needs and aspirations of its citizens … within the demands of global economic competitiveness' (DST 1996), setting this explicitly in the context of the global information society.

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[25]   http://www.uct.ac.za/about/intro/
[26]   http://www.internetworldstats.com/emarketing.htm
[27]   http://www.uct.ac.za/about/intro/transformation/

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A particular driver for university administrators is an undercutting strand of anxiety in government about the value that is being delivered by universities in return for investment made in research. The DoE is quite blunt about this: 'The resources allocated to the higher education system have not been put to best use and there is considerable wastage' (DoE 2002). As Martin Hall, former deputy vice-chancellor at UCT has expressed it, 'Universities are explicitly being asked to demonstrate their relevance and the the incentive for the university [to respond to these demands], is survival' (Hall 2005:17).

The relationship between the development imperatives faced by university researchers and that of 'blue-sky research' and global competitiveness is subject to complex and contentious debate, weighing up the relative values of Mode 1 and Mode 2 research (Gibbons et al. 1994). Embedded in this debate are questions of the value systems and hierarchies that underpin the two modes of research. Rather than entering into this debate in any detail, the focus of this report is the ways in which ICT infrastructure and research dissemination strategies are being exploited by UCT in its response to these challenges and how these are responding to both modes of research.

Lessons learned

In delivering its mission as a research-led university that seeks to respond to its African context through becoming an 'Afropolitan' university, the institution could take note of new Vice-Chancellor Max Price's statement in his installation address that 'To be a global university, UCT needs to be an African university.' [28]

When it comes to scholarly communications, this would imply, in the first instance, that the university would want to disseminate as effectively as possible its research reflecting and relevant to its African context. It would want these research publications to be accessible and available across the African continent. It would surely also mean that UCT's criteria for judging excellence in scholarly communications should seek to combine an African perspective with standards of 'global' or 'international' excellence.

What tends to happen at present is that UCT's research priorities do pay attention to this Afropolitan vision and its research programmes address in a variety of ways the university's transformation agendas and its aspirations to contribute to African development. However, where this breaks down is in the way in which the university deals with research publication; which, in response to national policy, seeks research excellence in a neo-colonial and Western-focused value system. Given the pre-eminence that publication counts have in university promotion systems, this report will argue that this policy environment is a powerful backward drag on the delivery of UCT's Afropolitan vision.

The institutional audit of UCT

Further insight into UCT's research mission and the ways in which it is being implemented can usefully be provided through UCT's participation in the institutional audit process of the HEQC, which operates under the auspices of the CHE. In 2005, the HEQC carried out an institutional audit of UCT as part of a national programme for quality promotion and quality assurance in higher education.[29] UCT was the first major research university in the country to be audited, acting as a pioneer in the process of setting standards for higher education delivery. The audit documents are therefore an important insight both into UCT and into the values that are in the process of being forged in the CHE for the higher education system in South Africa; and are a reflection of the high quality that UCT maintains as a research institution. The question that can be asked in perusing these documents is how that quality is carried through into research publications.

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[28]   http://www.uct.ac.za/about/management/vc/installation/
[29]   http://www.che.ac.za/about/heqc/

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In the self-evaluation that was the first step in the process, prior to an external audit by a review panel, UCT defined itself primarily as a 'research-led institution'. This is interpreted in the university's self-evaluation as a commitment to research-based teaching and learning and the *translation* of research into society in order to 'contribute to social, political and cultural development at different levels'. This concept of translation is an important insight into a realisation that social responsiveness can be a matter of the mediation of research findings for different audiences, providing a continuum between basic research and its application in the community. In its response, **the audit panel 'acknowledged UCT's attempt to forge a complex social and intellectual, national and international identity and the many steps that it has taken to address the requirements of that multidimensional identity, including the imperatives of transformation'** (HEQC 2006:11).

It is surely here that UCT touches most closely on its Afropolitan vision for research, one that sets Africa-relevant standards of research excellence.

The HEQC Audit Panel's evaluation had high praise for UCT's sophisticated and comprehensive formulation of its research vision and the quality of its implementation plans and support structures through the UCT Research Division. It did, however, identify a need to carry through the discussion to faculty and departmental level to work through the details of what it means to be a research-led university. This is important from the perspective of this report, as the case studies carried out in the OpeningScholarship intervention suggest that it is at faculty and departmental level that there might be the potential for a deeper engagement with ways of supporting the effective publication of research results.

It is clear from the documents that chart UCT's development of its research vision that this has been the subject of in-depth and comprehensive discussion at the top level of the university. However, it needs to be noted that the main focus of the Audit Panel and of UCT's planning is on the *content* of research and how it changes in the light of this vision – and not on the ways in which this content could be mediated and transmitted in order for it to have the desired impacts on teaching and learning and social responsiveness. The wording of the Audit Report (HEQC 2006:28) is as follows:

> The institution has yet to engage with the different senses and modes in and by which research transforms the content, focus and epistemological basis of teaching and learning and community engagement at a 'research-led' university.

This is a critical question and one that is at the heart of the OpeningScholarship investigation, because it is through effective dissemination of its research and the accessibility of its research communications that this could be achieved. However, what is missing is also UCT's vision for an integrated approach to research communication and publication to underpin its strategies and the changed models of publication that would be needed.

The Audit Report saw in UCT's vision the potential pivot for an innovative and defining role for a South African institution:

> If UCT is able to give greater content to what it means to be a research-led institution ... [t]his may enable UCT to position itself differently and distinctively from other research active universities in South Africa as well as internationally. (HEQC 2006:28)

A review of UCT's response to the audit in its Quality Improvement Plan 2007–2010 suggests, however, that the university is grappling with the issues raised by the audit across

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a number of fronts, and is very conscious of the transformative potential of its research vision. However, the question of the dissemination of its scholarship (which could be a powerful adjunct to its research programme) is constrained by a narrow definition of what constitutes research outputs – i.e. the journal articles, scholarly books and conference proceedings that are recognised in the DoE's policy for the measurement of research output (DoE 2003). **In other words, research publication policy and strategy is trailing behind a more forward-looking vision of the ways in which research publication could be reconceptualised in the South African context.**

It must be noted, however, that the HEQC audit process itself demonstrates that this narrowing of focus on research outputs is embedded in the process and not only in UCT's responses. For example, in the report on Rhodes University, the recommendation that Rhodes improve its output of research publications is phrased explicitly in terms of the DoE requirements - for journal articles, monographs and conference proceedings. **Therefore, a comprehensive evaluation of quality delivery in South African universities appears to be taking place without a critique of changing models of scholarly communications in the 21st century knowledge society.**

This can instructively be compared with policy development in Australia, where the government has set about a comprehensive re-evaluation of the ways in which research impact can be measured (Allen Consulting Group 2005). In a report for the Department of Education, Science and Technology (DEST) Houghton et al. (2006:60) recommend that effective access to publicly-funded research be achieved by 'ensuring that the Research Quality framework supports and encourages the development of new, more open scholarly communication mechanisms, rather than encouraging "a retreat" by researchers to conventional publication forms and media, and a reliance by evaluators upon traditional publication metrics (for example, by ensuring dissemination and impact are an integral part of evaluation)'. Houghton's report demonstrates the cost benefits that changed and more open publishing strategies can deliver at national level resulting in a substantial potential increase in GDP as a result of the impact of open research dissemination (Houghton et al. 2006).

However, it needs to be noted that Harvard and California universities, both of which have adopted digital publishing strategies, caution that the traditional patterns of publication are deeply entrenched in scholarly culture, however problematic they might have become. The change process is therefore a complex one that requires interventions at multiple levels in the system (SPARC 2008). What also needs to be noted, as Benkler (2003) reminds us, is that new publishing models are not replacing the traditional systems, but running alongside them. The challenge for a university like UCT is to mediate the change, rather than retreating to conventional forms of publication and traditional metrics.

Lessons learned

The HEQC audit of UCT revealed the strength and sophistication of the university's research strategies. However, in UCT's response to the Audit in its Quality Improvement Plan, the university's vision of the potential impact that could be generated through the publication of its research appears retrograde in comparison to its research vision. Research publication – in spite of its powerful potential as a strategic tool – is relegated to the narrow confines of conventional, formal scholarly publication. This ignores the potential for using ICT to communicate across the full range of UCT's strategic ambitions.

Given that the Vice-Chancellor suggested in his installation address – to take but one example – that UCT could emulate Harvard's Kennedy School in becoming Africa's leading

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executive education and public administration centre,[30] it would be instructive to look at the communications strategy of that institution. The Kennedy School manages a wide range of publications, clearly catalogued online, including journals, student publications policy and briefing papers – with the latter two available open access. Its series of Briefing Papers is innovative in that the papers are made available online as work in progress. This provides an interactive forum 'reflecting the broad range of research being undertaken by the School'.[31] The School publishes a number of journals, which are a mixture of open access and subscription models. The student-run journals *Africa Policy Review* and the *Women's Policy Review*, for example, offer open access.

In other words, the Kennedy School treats communication of its research as a major part of its strategy; profiles its publications prominently; recognises the interactive and developmental potential of the internet in its publication of work in progress; leverages the advantages of open access copyright models; and challenges the hierarchies of formal scholarly publication in giving prominence to student publications. When it comes to the university as a whole, Harvard's Faculty of the Arts and Sciences and then the Faculty of Law voted to mandate the deposit of journal articles in an institutional repository, the first US Faculty to enact such a mandate. The appointment of an Officer of Scholarly Communications in the Faculty signalled a commitment to providing central and integrated management of publication and communications issues.

While UCT might not have the resources to emulate the scale of the Kennedy School's publication programme, it could well emulate its approach by providing a high profile for UCT's range of research outputs, profiling these outputs prominently on the university website and ensuring open access for wide impact.

3. UCT's responses to national initiatives for research publication: achieving international competitiveness

The research strategies and framework at UCT are impacted upon by the national policy initiatives put in place by government departments and the research delivery framework of the NRF, designated to implement these policies in the higher education institutions. These play a role in framing how research dissemination more broadly and research publication in particular are treated in institutional policies and practices and impact directly on the ways in which UCT has framed the research communications component of its mission.

Of the two major strands of the UCT research mission – the achievement of international competitiveness and the delivery of strategic national development goals – it is the former that is focused most strongly on research publication. The impact that national policy and research strategy initiatives for international competitiveness and for national development has on research dissemination policies and practices at UCT will be reviewed in this section of the report.

Research publication policy

The national *Policy and Procedures for Measurement of Research Output of Public Higher Education Institutions* (DoE 2003) determines the national policy view of what constitutes valid research output. The generous rewards that accrue to universities for the publication of these categories of publication entrenches this even further. This policy is framed in a very

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[30]   http://www.uct.ac.za/about/management/vc/installation/
[31]   http://web.hks.harvard.edu/publications/workingpapers/Index.aspx

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conservative vision of 20th-century scholarly publishing practice and endorses the importance of individual effort and the achievement of international competitiveness, rather than the developmental vision of the African university that drives the transformational side of national higher education policy.

Of the NRF's strategic programmes for the delivery of South Africa's research missions, it is the programme for the evaluation and rating of researchers that speaks most strongly to the question of the international competitiveness of South African research. This is also underpinned by the acceptance of publication outputs of the kind recognised in the DoE system as a key evaluation criterion. UCT performs very well in both these systems.

The 'publications count' and UCT's competitive ranking

It is clear from UCT's research documentation that compliance with the DoE policy for the reward of research outputs and the achievement of a high publications count is important to the university as a way of establishing its achievement of international recognition. The Vice-Chancellor's Foreword to the UCT Research Report 2007 (UCT 2008) makes this centrality clear: 'Evidence of our research-led status is evident, from the steadily increasing lists of publications that make up the bulk of this report and the number of national and international awards made to UCT and its academics in the past year.'

The UCT Research Handbook, in the section entitled 'Publications Count', is explicit about the fact that this system grants primacy to a limited range of publications. It states: 'The primary purpose for the DoE policy is to encourage research productivity by rewarding quality research outputs at public higher education institutes. However, the policy is not intended to measure all outputs, but to enhance productivity by recognising *the major types* of research output produced by higher education institutions' (UCT 2007a – our emphasis). It is thus clear that UCT sees the publications count as an endorsement of quality and of a particular set of publications as more important than other outputs. It also has to be acknowledged, however, that the substantial funding that accrues from these publications also has an effect in the university's drive to increase its 'publications count'.

What is not clear is the acceptance across the institution of the status of these publications as arbiters of research quality. Anecdotal evidence suggests that, while there is general conformity to the requirements of this policy, given its primacy, there is a lot of criticism among sectors of the academic community and there are generational, gender and disciplinary differences in this regard. This is endorsed by the profile of authors in the publication counts. Publication by South African authors in both South African and foreign ISI journals between 2002 reflected a steeply rising trend of authors being over 50 years of age, with an average of between 41% and 45% of authors in that age category for South African and international ISI journals respectively (Gevers & Mati 2006:49). Female authors constitute 23% of authors published in international ISI journals (Gevers & Mati 2006: 50).

As far as the different scientific fields are concerned, Table 1 shows the levels of publication in ISI-indexed journals and foreign journals (as opposed to South African journals, whether or not they are in the ISI indexes), respectively demonstrating substantial differences between the natural sciences, health sciences and engineering sciences on the one hand and the human and social sciences on the other. It is clear that an institutional policy at UCT that favours publication in the international indexes and implicitly or explicitly values foreign publication over local has a distinct disciplinary weighting.

Research citations and international status

There is certainly some validity in UCT's perception that this kind of publication is central to its scholarly reputation and its competitiveness. UCT's success in this regard is reflected in

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the fact that in November 2007 it became the first African university to make it into the top 300 of the Times Higher Education Supplement-QS World University Rankings[32]; sharing its place with RMIT University in Melbourne, Australia. One of the six criteria is the number of research citations, based on numbers generated by Scopus, the abstract and citation database. While this database is more broadly based than the ISI citation system, it is nevertheless likely that a focus on publication in international rather than local journals would produce higher citation counts. UCT is also the highest ranking African university in the Academic Ranking of World Universities (ARWU)[33] conducted annually by the Institute of Higher Education at Shanghai Jiao Tong University.

UCT's performance in the national publication count

There has been a steady year-on-year increase in research outputs at UCT conforming to the DoE criteria, leading to concurrent increases in revenue (see Table 1). While UCT's Research Report 2007 (UCT 2008) does not mention the overall amount of subsidy that UCT received, the level of subsidy for a journal article was R85,000 (around US$ 8,000) per publication in 2007[34] rising to R92000 in 2008 and R 102,000 in 2009. This amount would, of course, be reduced for multi-authored articles where some of the authors were not UCT-based.

In ASSAf's (2006) analysis of the institutional patterns of scholarly publishing, UCT is the top university for the number of journal articles published between 1990 and 2003. Of these, 35% of UCT's journal articles were in South African journals in this period, and 74% in the top 50 foreign ISI journals (Gevers & Mati 2006). UCT's own figures for its publications reveal the spread of this publishing activity over a five-year period.

Table 1: Accredited UCT research output[35]

Output type	2002	2003	2004	2005	2006
Accredited journals	611.27	531.7	672.8	754.7	792.9
Books and chapters in books	35.24	25.19	43.58	76.3	44.87
Peer-reviewed published conference proceedings	8.83	6.82	40.31	61.75	69.43
Total units	**655.34**	**563.71**	**756.69**	**892.75**	**907.11**

A more detailed breakdown of the publishing profile is provided by information from UCT's Research Division. In June 2007, UCT submitted their list of research outputs to the DoE for late-2005 and 2006 journal articles. Of the 622 accredited journals in which articles were submitted, 443 were on the ISI Science list, 49 on the ISI Social Science list, 16 on the ISI Arts & Humanities list, 36 on the IBSS list and 78 on the South African DoE list. This reveals that UCT is publishing its research output predominantly in internationally-indexed publications and with a strong emphasis on the scientific disciplines, as opposed to the social sciences and humanities. Over 85% of the listed journals were therefore those indexed in international lists and just over 70% were listed in the Science index. What is clear, therefore, is that UCT is exporting the bulk of its prestige-focused formal publications.

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[32] http://www.news.uct.ac.za/mondaypaper/archives/?id=6635
[33] http://www.arwu.org/rank2008/EN2008.htm
[34] P Jacobs, UCT Research Division, pers. comm., 10 December 2007
[35] http://www.researchoffice.uct.ac.za/publication_count/stats/

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Given low levels of accredited outputs in books, this imbalance is not being redressed by the publication of scholarly books and monographs in these disciplines. South African journals are poorly represented in the international indexes (Gevers & Mati 2006) and journal prices are unaffordably high, even for university libraries in the global North (SPARC 2008). There is thus cause for concern in this publishing profile at UCT as to whether there is adequate access to UCT-generated research publications in South Africa and the region. There has been anecdotal evidence during the course of the OpeningScholarship intervention of scholars at UCT who could not access their own articles because the journals concerned are not available at UCT or other South African libraries.

What is clear is that prestige from publication in an internationally indexed journal is a deeply entrenched culture – at all South African institutions, not only at UCT. Reviewing the experience at universities like Harvard, Stanford and California, which have addressed this issue in institution-wide, top-level initiatives, brokering change is a slow process that has to be handled at a variety of levels in the institutions (SPARC 2008; Candee 2008). This is borne out regionally in the research findings of the investigation into access to research in the SARUA universities (Abrahams et al. 2008).

The NRF rating system for scholars

The dependence on journal indexes and citation counts as a measure of research competitiveness is entrenched in other research strategies supported by the NRF and successfully adopted by UCT, such as the rating system for individual scholars. The NRF rating system for scholars is also perceived by UCT as 'an important means of benchmarking' for its scholars and here, too, the university performs very well. In 2006 UCT, with 278 rated researchers (including 29 A-rated scientists), was the university with not only the highest number of rated researchers, but also the highest number of A-ratings (UCT 2007b:5). The overwhelming majority of A-rated scholars are from the pure and applied sciences, but there is representation from the social sciences and humanities.

These ratings are explicitly for individual achievement rather than collaborative research and are built on the recognition of the scholar's international reputation, based on the evaluation of peers. The system is not without its critics and has been subjected to intensive review by the NRF over the last few years prior to the reintroduction in 2008 of a financial reward system for rated scholars. In particular, the system raises questions about the interpretation of what is meant by 'international' and what criteria underpin the peer-review system used to implement these ratings.

Given that the NRF is now reintroducing a system of payment for rated scholars (NRF 2008), and given that UCT performs so well in this arena, the question arises as to whether these incentives, like the reward system for scholarly publication, are going to push an even greater emphasis on performance in the international citation indexes and hence publication in international journals. This has raised concerns similar to those expressed about the HECQ audit of UCT; that the system is implicitly – or even explicitly – undercut by a conception of the value of 'international' scholarship as it is expressed in the ISI citation indexes and could therefore devalue locally relevant scholarship. The bias in the ISI system against the research priorities of those countries on the 'periphery' – in other words, the developing world – have been comprehensively canvassed, most cogently expressed by Guédon (2003b). There have long been complaints of bias in the rated researcher system against certain disciplines and against criteria that are seen to be too narrowly focused (Auf der Heyde & Mouton 2007). These emerged again in a UCT briefing on the changes in the system in 2008.

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The NRF's description of selection criteria does try to field this issue by stressing disciplinary differences, by stipulating that, '[w]hile publication in high impact international journals is to be encouraged, it is also recognised that in certain instances, more specialist or local journals of lower impact factor may be more appropriate' (NRF 2008:3). A review of the criteria set by the various committees responsible for setting selection standards, however, shows considerable variations, with all insisting on the primacy of peer-reviewed outputs in accredited journals and books, but with a variable range of other requirements, not necessarily consistently applied across related disciplines. Some disciplines value editorial activity, and some will consider research reports, others not. Economics and management studies, bizarrely in a research world that depends almost entirely on internet-based publication, will not admit 'web-based' publications, 'due to longevity concerns' (NRF 2008:14).

It is also interesting to note that the NRF rating system explicitly excludes socially-responsive research outputs:

> Developing public awareness and public education, while a laudable activity, is not considered to be a research output as such. (The NRF has other routes by which such activity can be rewarded). However, as with undergraduate curriculum development, research into the best, or most appropriate or efficient approaches to public education would fall under the Education Specialist Committee. (NRF 2008:3)

This is at odds with UCT's own analysis of socially-responsive research as being underpinned by high-level research standards. UCT's deliberations on the nature of a research-led university in a South African context raises some interesting (and challenging) questions about the role that development-focused scholarly publishing could play in the evaluation of what 'international' excellence means from the perspective of a South African university.

Lessons learned

UCT's focus on driving publication in a narrow band of accredited publications (largely driven by national policy) is working well in positioning UCT in a particular version of global competitiveness – namely, that of the commercially-driven citation indexes and competitive international university rankings. What it is not doing is contributing towards UCT's aspiration to be an Afropolitan university, given the bias in this system against the developing world. UCT's success in this arena has ensured that a very high percentage of its recognised research output is effectively exported. The publications in which this research appears are not likely to be available in university libraries in Africa, given their high price, and the age, racial and gender profile of the authors in these publications suggests that this publishing environment is not one that is favourable to UCT's transformation efforts.

There is thus a risk that the unquestioned acceptance of this internationally competitive, largely commercial research output environment as the dominant standard for judging excellence in scholarship might undermine UCT's success in profiling itself as an African university. In his speech at the UNESCO World Summit on Higher Education (July 2009),[36] the new Minister of Higher Education and Training, Blade Nzimande, was highly critical of the of the unequal power dynamics that have resulted from this way of defining global excellence and the impact this has had on Africa:

> Although progress has been made in HE provision in Africa, it is obvious that over the last few decades some things have not changed. There has been no significant

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[36] http://www.education.gov.za/dynamic/dynamic.aspx?pageid=306&id=8720

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> break in relations of knowledge production between the colonial and post-colonial eras. African universities are essentially consumers of knowledge produced in developed countries. In essence what is being defined as 'knowledge society' means two different things to the developed world and the African continent. The former are the producers and the latter are the consumers of knowledge, which seriously undermines the fostering of the multicultural nature of Higher Education, as virtually all partnerships are one-sided.
>
> This is not only negative for the African continent, but it also deprives global higher education of access to the indigenous knowledge of Africa, and it deprives Africans of the opportunity to develop their indigenous knowledge system and strengthen their relationship to western and eastern knowledge systems. This is the nub of the challenge, against which we need to tackle the challenges outlined in the rest of this speech.

Although this sounds like a clarion call for open access scholarly communications in Africa, it is striking that the Minister did not make the connection between this status quo and the publication policies that have so successfully driven UCT's research into a paradigm that is at odds with its broader university mission. It as if the real importance of scholarly publishing and access to research have been rendered invisible by the policies that are meant to support it. UCT might do well, in these circumstances, in acting as a leader in national policy change by taking steps to align its own publication strategies to its broader mission, as the HSRC Press and the University of Pretoria have done.

This would mean reviewing the interface between ICTs and research dissemination needs at institutional level and would be a matter not of technology alone, but of technology falling in behind research requirements and of the exploitation of the disruptive potential of ICT use to align the university with 21st-century research practices and to align with transformation goals. There is, moreover, a risk of UCT being overtaken by changes in the scholarly publishing environment globally, as governments, donor funders and leading universities worldwide engage with more open publishing models, often in reaction against the system that UCT is favouring. As the promoters of the MIT Open Access mandate put it:

> There has been a growing perception over the past decade that the public, and the progress of scholarship in many disciplines, would be better served if peer-reviewed scholarly publications and data were distributed online so that they can be openly accessed and built upon, rather than through exclusive publishing agreements that restrict access and reuse. This perception has led to the emergence of policies that encourage or mandate open-access publishing, such as recent requirements by the National Institutes of Health, the European Research Council, and the Wellcome Trust.

Given government policy for rewarding scholarly publication and the persistence of narrowly-conceptualised metrics for the recognition of scholarly outputs, UCT does face difficulties in breaking out of this particular definition of excellence. **However, UCT could achieve a great deal by encouraging or perhaps even mandating a repository of open access pre- or post-prints of journal articles published in accredited journals, so that these are accessible and so that they can contribute to the reputation of the university and its scholars through increased reach and citation**. Most journal publishers allow this, sometimes with requirements for delayed posting.[37]

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[37]   The policies of the different journal publishers can be obtained on the Sherpa Romeo web site: http://www.sherpa.ac.uk/romeo/

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The question then is how UCT could balance its competitive drive for excellence with attention to the communications needs of its broader strategies. In particular, how could it help build a different vision of what constitutes excellence in a leading African university? And how could it work – given its research pre-eminence – towards influencing national policy and to support an African vision of research excellence?

A changing scholarly publishing environment

Intellectual property and journal publication

UCT does not appear to have engaged with the implications of the commercial publishing system that underpins the conventional scholarly publishing system and its closed copyright model. There does not seem to be a recognition that this is a publishing system driven by a proprietary intellectual property system being leveraged for gain by large media corporations. While individual academics express criticisms of the system, its subject bias and limitations in access, there has not been engagement at an institutional level with the fact that copyrights in UCT research are being signed away to international corporations nor that the reach and impact of its scholarly publications are limited by price barriers and access difficulties.

The traditional publishing system operates under closed copyright licences, which places strict limitations on copying and makes the presumption that creativity is best encouraged in a system in which knowledge products are provided for sale. Open access publication – typically using Creative Commons licences - provides content online free of charge, accessible to anyone across the world and with the author exercising discretion on what limitations need t be placed on re-use. There are a variety of business models, of which only one is payment of so-called 'author fees' at the beginning of the supply chain, by research funders or authors, with the final product being distributed free of charge.

At UCT the absence of engagement with open access and its potential for the university has meant that for those scholars who wish to publish, by preference, in open access journals – providing access to their research outcomes across the world - there is no system for the payment of author fees, where these are incurred. There is also no clarity as to which department could take responsibility for the payment of such fees; whether it is a matter for the library, as a subscription issue, or of the research office, or another department.

During our interview with UCT's Cluster Manager of Research Development, Dr Holness, we confirmed that UCT does not yet have an open access policy in place, nor procedures for how academics could receive funding to pay for open access publishing. Currently the Research Office will pay the author fees required, if funds are available, but does not yet have a dedicated fund or procedures for how to access this fund in place. There are also problems with the level of publication fees being asked for by some journals and the value that is being offered academics and the university in such cases.

Moreover, UCT does not have a policy on the desirability of open access as a preferable option for authors or for the publication of local journals. Nor is there any central provision of advice on the contractual issues such as the cession of author's copyright or the posting of pre- or post-prints of journal articles to provide wider access to UCT scholarship.[38]

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[38] The Scholarly Publishing and Academic Resources Coalition (SPARC) Resources for Authors homepage on its website provides the kind of highly informative and useful information that could be emulated by UCT for supporting authors in this endeavour. See http://www.arl.org/sparc/author/.

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Lessons learned

New trends in electronic publishing – including policies from international agencies, donors and governments – and the potential for impact offered by open access dissemination provide powerful incentives for South African universities to engage with changing models of copyright management

This is particularly important because open access publication has the potential to generate exposure for a university's research and profiling for the institution and its scholars on an unprecedented level. The opportunity therefore exists for a university like UCT to showcase its research worldwide as well as making it available in resource-poor contexts where researchers would normally not be able to afford toll-based journal articles. This would be a powerful tool in delivering UCT's African vision

The problem that UCT faces in addressing this issue is the fact that its current systems are closely aligned to supporting the DoE publication reward policy and therefore to publication in predominantly closed-access journals. The responsibility for ensuring a high level of outputs is devolved to faculty and departmental level, in line with the largely discipline-based structuring of the traditional publishing environment. This makes it difficult for UCT to break out of its silos in order to implement policies and strategies for open access publications at an institutional level

In the North, the impetus for change has come largely from librarians, who have been the primary drivers of new approaches to university publishing (perhaps because they are also the primary victims of the high and escalating costs of the dominant publishing system, but also because they are highly trained in the use of ICT for content management). In South Africa, this raises dilemmas as there are questions around whether the status and reporting lines of university libraries in their institutions and the training of librarians makes this an obvious choice in the South African context.

The international lesson is that in a digital research world there are substantial advantages for a university taking an institution-wide and integrated approach to the management of intellectual property in the process of its publication enterprise. This is not simply a matter of ensuring IPR compliance, but of involving the administration, academics and librarians in something that has become of institution-wide concern: the twin problems of unaffordable prices and highly restrictive licences for subscription content and the need to provide access to UCT research. The adoption of open access IP models for publication has to do with the financial management of university resources, the marketing and profiling of university research and researchers, and, not least, the delivery of the university's public mandate.

In this changing environment, many universities are now appointing Officers of Scholarly Communications, or Officers of Strategic Communication and Publications, usually situated in the library, but performing a wider mandate. Harvard and the University of California are but two examples. This allows the university to engage with IPR and publishing issues under one umbrella, including the development of open access policies and for the management of authors' rights in both the conventional and open access systems.

Open Access publishing and the ASSAf journal publishing initiative

Although there is currently pressure to aim for international over local publication when it comes to the building of university prestige in South African universities, there is a move at a national policy level to build the profile of South African journals and increase their international status. This in turn is linked to the adoption of an open access strategy for South African journals and the creation of a South–South partnership with Latin America for the creation of international, national and regional citation impact for developing-world journals.

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ASSAf"s programme to build a South African scholarly publishing is being supported by the DST in a five-year funding cycle. Its strategic framework is to:

- Promote/enhance the standing and effectiveness of South Africa's research journals, nationally and internationally.
- Improve the productivity/efficacy of publication through different modalities (e.g. electronic publication).
- Ensure that discoveries and insights gained through research published in South African journals were made known to a wider public than the research community itself.

The ASSAF proposals recommend support for the publication of journals that are 'sustainably published to make known significant, peer-reviewed research contributions from South Africa and the Southern African region generally, as well as further afield' and that electronic and open access distribution of journals be expanded (Gevers & Mati 2006:3). The ASSAf proposals also incorporate support for journal editors, through the creation of the South African National Journal Editors' Forum and recommendations for the training and mentoring of journal editors. The role of journal editor is recognised as one of vital importance to the scholarly endeavour. This raises questions for UCT, where the OpeningScholarship project case studies have revealed little or no support or recognition for journal editors in university departments or research units.

The drive for the enhancement of the quality of South African journals and for the creation of a regional citation index being delivered through a partnership with SciELO in Brazil for a collaboration in the creation of a South African national scientific journal platform. . It is anticipated that the first journals on the SciELO South Africa platform will be up in the the first half of 2009.

While UCT's strategies for building its international research profile through its publications are in line with existing national policy, the university is not yet engaging with the changing international publishing environment that the ASSAf programme is responding to. Given that UCT's emphasis is strongly on publication in international journals, the question is whether the university will need to engage with its strategies for local publication and with the question of its support for journals that are being produced on campus and for further journals that might be developed in line with UCT's strategic objectives. Given that open access online journals do not require the expensive investment in print copies, subscription management , warehousing and physical distribution, this is now a feasible option.

Lessons learned

With national scholarly publishing now firmly on the national agenda and open access identified as advantageous for South African scholarly publishing, it might be time for UCT to review the extent to which it could benefit, strategically and in the enhancement of its reputation, from growing its commitment to the development of and support for journal publication on campus.

There is currently little support for departments or academics undertaking editorial or publishing activities at UCT. The Feminist Africa journal, for example, which is published out of the African Gender Institute at UCT, was one of the case studies undertaken in the OpeningScholarship programme. Given UCT's emphasis on gender transformation in its programmes it is surprising that this journal gets little or no support from the university – either by way of recognition for the academics involved in producing it, or through support for the hosting of open source technical platforms for journal management.

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It is quite possible that if UCT were to encourage the development of open access scholarly journals allied to its strategic research goals, and were to profile these effectively at institutional level, it might benefit substantially in terms of reputation and profile, out of all proportion to the costs involved.

4. UCT's response to national research strategies: national development goals

UCT was praised by the HEQC audit panel for the innovative way in which it is exploring the relationship between research and social responsiveness. It is in fact in this area that a broader vision of scholarly communications is being brokered at UCT by a number of research groupings. Motivating for a strong connection between research excellence and its public and socially-responsive role in its research vision in a number of workshops and discussion forums run by the Institutional Planning Office, UCT academics have set out a powerful view of the strengths of UCT;s current research programmes and have revealed the wider range of scholarly outputs , being produced in this context (Favish 2005).

In addressing the place of this kind of research in the university, UCT could fall into line with the practice of leading international universities, which are acknowledging the enhanced possibilities for taking control of their own publications in a digital world and the reputational advantages that this can bring (Brown et al. 2007). The Executive Director, Strategic Publishing and Broadcast Initiatives in the office of the President of the University of California (UC), for example, represented UCT's position as follows is a recent forum:

> Publishing and communication enhances knowledge, not just scholar to scholar but scholar to student as well as to the public. In the digital realm, there is no reason to plan to enhance scholar to scholar communication without considering how to improve the knowledge, the creation and scientific output of the university to the public. (SPARC 2008)

UCT has a number of research programmes that address its public benefit role. The question is whether these are being well served by the university's publishing policies and strategies.

The South African Research Chairs Initiative

UCT has performed very well in the South African Research Chairs Initiative (SARChi), which was developed by the DST and is currently administered by the NRF. As described by the NRF, the initiative is designed to offer financial support in order to 'significantly expand the scientific research base of the country in a way that is relevant to national development and in support of making South Africa an internationally competitive global knowledge economy'.[39] It is also designed as a transformative initiative, to 'create research career pathways for highly skilled, high quality young and mid-career researchers that effectively addresses historical racial, gender and age imbalances', an important balancing factor in the light of age demographics of the scholar rating system and the publication counts.

The UCT Research Office is very clear about the link between the university's successful alignment with national research goals and its ability to attract funding in this programme:

> The alignment of UCTs research strategy with national research and development priorities ensured that UCT secured a successful outcome in the first round of competitive applications. 21 Chairs were awarded nationally in

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[39]   http://www.nrf.ac.za/sarchi/index.stm

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2006, seven of which were at UCT. During the second round which was announced in September 2007, UCT secured 18 of the 51 Chairs awarded nationally.[40]

The high number of Research Chairs at UCT means that UCT has the potential for an equally high level of strategic impact for its research and the potential to leverage these positions for research capacity growth. The Research Chairs cover a wide range of research areas across faculties and disciplines.

Signature themes

In order to focus its research and link it to national strategies for research and development, UCT has developed 'signature themes' which, 'provide a framework for interdepartmental and interfaculty research and contribute to cultural and operational transformation on various levels. Selected to drive research in a strategic manner, they are grounded in existing areas of internationally recognised excellence whilst being aligned to institutional, regional and national priorities.'[41]

These themes form part of an approach to research management which was commended by the HEQC audit (HEQC 2006) and are designed to recognise UCT research strength and to respond to potential for the development of transformative objectives aligned with national priorities. They align with the Research Chairs initiative in that they tend to be headed by Research Chair appointments.

Five themes selected thus far at UCT seek to combine high-level research with social and developmental needs. They are:
- Cities in Africa – addresses policy-making issues and provides alternative perspectives on the rapid urbanisation in South Africa, working across a wide range of disciplines.
- Drug Discovery – takes a multi-disciplinary approach to addressing the burden of disease, aiming to build technological platforms to build research capacity.
- The Marine Research Institute – provides basic research and investigation of policy issues related to the marine ecology.
- Minerals to Metals – seeks efficiency in mineral extraction linked to preservation of the environment.
- The Brain Behaviour Initiative – brings the latest developments in cognitive research to respond to the question of trauma in a very violent society.

If one takes one example of what these themes could offer in redefining the meaning of African scholarship, Vanessa Watson of the School of Architecture and Planning's discussion of the Cities in Africa project in a recent symposium at UCT demonstrated that this development-focused research programme involves an intellectual engagement with its context to deliver an African perspective with global relevance:

> The position taken in the Cities in Africa project is that many of the problems of cities on the continent stem from an inappropriate application of 'solutions' from other parts of the world (and usually the global North). In other words, the requirements of phronesis – for an understanding of both values and the deep complexities of context – are missing. In many instances this has been because of assumptions of value neutrality and an overriding faith in the 'market'... (Watson 2007:123)

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[40]   http://www.researchoffice.uct.ac.za/strategic_initiatives/research/
[41]   http://www.researchoffice.uct.ac.za/strategic_initiatives/themes/overview

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If one extends this argument, **the interlinked SARCHi and Signature Themes initiatives reflect an understanding of development-focused applied research that is not divorced from basic research, but is fully integrated with it.** At the same time this challenges the conventional assumption that excellence resides in the 'international' – with varying degrees of explicitness, these projects posit a version of excellence that embodies this rigorous conjuncture of the theory and context. Equally, these research programmes make explicit the extent to which developmental research is inter-disciplinary and not contained within the silos of separate departments.

Research groupings

UCT has conducted a review process for the recognition of research groupings in the institution and their categorisation as institutes, centres or units. There are currently 58 such groupings recognised at UCT, which cover the whole range of faculties and disciplines as well as demonstrating a variety of approaches, from pure research, through policy research, to community involvement. Like the Signature Themes, many of these research initiatives demonstrate a combination of international-standard excellence with attention to issues of national relevance.

This programme therefore suggests a model of research excellence that is built on the rigour of basic research that is responsive to 'the needs of the people of Africa', both in   its research focus and in its application in the community. It certainly serves to position South African research and a particular research approach as a site of global excellence.

These research groupings also offer a different vision of research publication and its role in the university and the community.

The Occupational and Environmental Health Research Unit – a case in point
Given the nature of these research units, the question of the communicative framework in which scholarship operates is of great importance, and this is not a one-way process. For example, from the Industrial Health Research Group in the School of Public Health:

> [T]he development of a proactive preventive culture of occupational health and safety cannot be met merely through a one-way transfer of knowledge from occupational health and safety specialists to workers and their trade unions. It can only be built through an engagement between the experience, needs, interests and knowledge of workers in the workplace, on the one hand, and accumulated scientific knowledge on the other. The work of the Industrial Health Research Group seeks to develop and explore this dialogue. It also seeks to facilitate the recognition, validation and expression of workers' experiential knowledge in transforming the negligent culture of occupational health and safety.[42]

This Research Group produces a range of outputs, from traditional research articles and books, through policy-related publications and research papers on pesticide-related public health issues, to CD-ROMs for industrial health training. The policy- and pesticide-related related reports are available online on the OEHRU web page on the UCT website, but this is not easy to find.[43]

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[42]   http://www.socialresponsiveness.uct.ac.za/activities/economic_dev/health_group/overview/
[43]   http://www.oehru.uct.ac.za/publications/pestrel.php

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The South African Labour Development Research Unit (SALDRU) also stresses the need for a combination of hard research with social relevance – what the unit's director, Prof. Murray Leibbrandt, describes as 'hard heads but soft hearts'. This carries over into research publications, which Leibbrandt describes as follows:

> Staff have contributed to a number of significant publications in the area of economics and poverty alleviation. These publications are often of a more applied and policy-oriented nature. However, the academic responsibility to the policy community – and especially to the poor – is to undertake research of the highest standard. This sits comfortably with the processes of academic review and publication in strong academic journals.[44]

SALDRU's publications are available online in pdf format, for free download and consist of policy and research papers, a number of them by very highly regarded academics.

SALDRU was also involved in the creation of a unit for the management and analysis of research data, DataFirst[45], which was established to build an online archive of data available to students and researchers. This has been a collaborative exercise with overseas universities such as the University of Michigan and has provided training for postgraduate students in the integration of data in their research. This specialist unit could provide a model for larger interventions into access to an integration of online data into research and research outputs at UCT.

These research groupings thus pose a challenge to the traditional hierarchies of research excellence and concepts of scholarly publication enshrined in the national counts of 'research outputs' and the rankings of scholars. With their combination of 'hard heads and soft hearts', these units aim to deliver the strategic goals of the national government and the institution by delivering applied research without compromising the globally competitive excellence of what they do.

These are units that operate comfortably online and that publish a range of outputs targeted both at communities of scholars and the communities they seek to serve.

While UCT's research groupings have been the subject of a quality audit and the importance of their output is broadly acknowledged, there is no university structure to support publication output from this research. Nor are the full range of publications recognised: while the university policies for recognition and promotion do provide for the acknowledgement of socially responsive work, in most, if not all faculties and departments, journal articles in accredited journals and scholarly books are the 'research outputs' that are recognised and rewarded.

It is these units, along with the university's Signature Themes, that best exemplify the transformative African research vision that the HEQC Audit Panel was reaching for. It is interesting that while dissemination of the research produced in these programmes is central to their operations, the university is not engaging with the potential that disseminating this research could offer in profiling research quality at UCT and the institution's transformational development mission.

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[44]   From a case study conducted by the Social Responsiveness Unit at UCT:
http://www.socialresponsiveness.uct.ac.za/activities/economic_dev/saldru/scholarship/
[45]   http://www.datafirst.uct.ac.za/home/

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Lessons learned

This research model, critical to UCT's definition of its research mission and a defining feature of research quality at UCT, poses a challenge in relation to research publishing and the measurement of research outputs. The production of accredited publications – the journal articles that would contribute to UCT's publication count – would provide at least for communication between scholars on these issues, at least in the global North. However, this would not be sufficient to capture the full value of these projects, which extends across Africa and the developing world and to audiences beyond the limits of the scholarly community. These projects aim to address crucial development issues in South African society and their impact will depend on their ability to reach the stakeholders concerned as well as policy-makers, government, civil society and industry.

Open access publication would provide exposure for the publications produced by these research programmes, providing maximum benefit for the university's strategic investment. Their interdisciplinary and transformational focus would benefit from social networking tools, such as blogs and wikis. Given that these initiatives rely to an extent on donor funding, an issue to be remembered is the value that is added by the availability of a range of publications to demonstrate a project's success in both its research and its transformation goals.

The output produced by research groupings such as the Occupational and Environmental Health Research Unit represent the idea of quality that is not subject to an exclusionary idea of excellence – a desirable form of academic endeavour that projects a significant contribution to national development while still being high quality research.

While many research groupings at UCT produce a range of publications that are of strategic importance to the university mission and would profile UCT as a university, making a substantial contribution to national development, there is no easy way to access these publications. Although the publications are posted in departmental websites, these are difficult to track through the complexities of the UCT web site.

The publication of these research outputs in open access departmental repositories, meta-tagged for easy discovery and linked to institution-level document directories, would make the content findable, searchable and accessible. This would then increase the potential for these publications to have effective reach and impact. Open access publication, which is already implicitly being used by many research units, takes a 'public good' approach to knowledge. Information programmes, support and training for these research groupings on the application of open access licences would ensure protection of the copyright of these publications while at the same time allowing for their open dissemination. As these appear for the most part to be self-publishing exercises, the provision of training and support in the document preparation for online presentation, editorial and design skills would be an advantage, ensuring the production quality of the documents concerned.

If UCT is to deliver its strategic goals for national development impact, then the recognition of this wider range of publications would contribute to profiling the university's contribution to national transformation through its research. Online open access availability would strengthen this impact further.

5. Social responsiveness and research at UCT

UCT's research mission places a strong emphasis on research that is responsive to national development targets alongside more abstract and basic research, which is valued for its international impact. When it comes to scholarly publication, this poses a dilemma, as the hierarchies of value and the reward systems driven by traditional scholarly publishing tend to relegate this nationally strategic research to a secondary position – as 'applied research', as

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opposed to the more highly regarded basic research. In the same way, research outputs from applied research tend to be categorised as 'grey' publications, also relegated to a lower status than formal (mostly commercial) publications. In the South African system, as it is manifested at UCT, formal publication tends to be carried out outside the university, while a volume of 'grey publication' are produced by a number of research groupings in the university. What is not fully acknowledged in the research system at UCT is that this kind of publication is in fact very important in the eyes of committed university researchers across the disciplines, of value for the university, and for a government that is all too ready to judge perceived failures by universities to deliver transformation.

What is clear is that profiling its research is an important exercise for any South African university. In the wake of the formulation of the UCT mission in 1996, the university turned its attention to the ways in which it would align its various activities to its mission statement. The need to address the ways in which the university engaged with the community was one such focus area. Acknowledging the emphasis that the government was placing on the responsiveness of universities to national development needs, the documentation on social responsiveness at UCT explicitly references both the DoE's *Transformation of Higher Education* report and the White Paper on Higher Education (2003) and their demands for a social return on higher education investment as a motivation for an in-depth engagement with this aspect of UCT's research (UCT 2003; Favish 2005).

In terms of university management structure, social responsiveness at UCT is currently located in the Institutional Planning Office, which essentially locates it in the domain of outreach – not necessarily research. The traditionally narrow perspective of social responsiveness as a system for the university's interaction with its surrounding community in a top-down 'charitable' way or as a form of outreach, does not take into account the substantial amount of valuable and high level research which takes place within the university's socially responsive endeavours. Furthermore, in the face of a failure by the university to regard this as research worthy of dissemination, any evaluation of the impact of university research on national priorities is hindered by a lack of easy access to the content of this research.

A key question needs to be posed: Is the socially-responsive endeavour part of a university's research mission, or a form of corporate social responsibility? While UCT's mission suggests that its three main components – research, teaching and learning, and social responsiveness – are separate pillars of the university mission, an examination of its research strategies and its response to national research imperatives suggests that research and its potential social applications at UCT at the very least exist along a continuum. The university's social responsiveness policy in fact stresses the 'interconnectedness between research and society in the context of responding to developmental needs'.[46] This interconnectedness manifests itself in online publication of research outputs, which, with the use of open and flexible licensing, creates the potential for access to research findings by a wider audience.

It is increasingly being recognised worldwide – for example, in Australia's Productivity Commission and its Accessibility Framework[47] – that in a digital environment, there are possibilities for the exposure and dissemination of a much wider range of research outputs than in traditional commercial print publishing. This means that research that responds to development imperatives can be disseminated and published in a variety of ways, through formal and informal channels. Moreover, the flexibility offered by digital publication and the use of open licences allows for the translation and transformation of research outputs to reach audiences other than fellow scholars. What this means for a South African university is

[46]   http://www.socialresponsiveness.uct.ac.za/about/policy_framework/
[47]   http://www.pc.gov.au/projects/inquiry/consumer/docs/finalreport

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that there are new possibilities for extending the reach of research to increase its national and regional impact and to access other audiences. What is more, such publication, available online, serves as a powerful public demonstration of a university's research contribution, even more so if it is linked to the university's research reporting systems and can be leveraged to demonstrate the range of the UCT's research contribution.

It appears that UCT's Institutional Planning Office is cognisant of these issues and is engaging with the complex interplay between research and social responsiveness, but the Office's separation from the mainstream research environment could pose obstacles in terms of truly integrating social responsiveness with the institutional research mission.

In 2005, a Social Responsiveness Working Group was formed to guide the drafting of UCT's Social Responsiveness Report[48] and a series of case studies were undertaken to deepen understanding of what constituted social responsiveness at UCT. The following definition was formulated:

> Scholarly based activities (including use-inspired basic research) (Stokes 1997) that have projected and defined outcomes that match or contribute to developmental objectives or policies defined by civil society, local, provincial or national government, international agencies or industry.

The definition emphasises the scholarly forms of social responsiveness, while recognising a number of other forms of community work, including a number of community outreach projects run by student organisations (Favish 2006).

When it comes to the outputs and publications of the projects that were reviewed in this process, they cover a wide range, but are all explicitly linked to scholarship, either as direct research outputs or 'translations' of research for community needs. The following are examples of what constitutes outputs from socially-responsive projects:

- Policy documents including legislation
- Monitoring reports
- Short courses
- Patents, artefacts and instruments
- Web-site information e.g. the AIDS model
- Popular journal articles or booklets
- Newspaper articles
- Submissions to government
- Evaluations or project reports
- Maps
- Case studies
- Discussion papers

These outputs are described as scholarly in that they are grounded in research, disciplinary expertise, or the application of technology; a link with scholarship being described as absolutely critical by all of the Working Group's interviewees (Favish 2005).

The Working Group did engage with the need to acknowledge a wider range of outputs and to develop performance measures that could meaningfully evaluate the work of these projects for the purposes of academic promotion and reward: 'SR activities are likely to remain at the margin of the universities as long as the university's recognition systems do not make provision for recognising a wider range of scholarly outputs associated with social responsiveness' (Favish 2006:2).

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[48]   http://www.socialresponsiveness.uct.ac.za/reports/

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The university has begun to recognise the variety of outputs from these projects and the value that they generate for the reputation of the university and its profiling in the community and with government (Favish 2006). The discussion on how the generation of these publications could be supported, or how ICT infrastructure could facilitate dissemination of the outputs of these projects and increase their range and impact, is, however, only beginning.

The UCT Institutional Planning Office has been developing a web presence for social responsiveness projects and this is providing space for the profiling of the different projects involved, but this still begs the question of where the publication of research outputs should be managed and how their curation should be ensured. A problem is the difficulty of finding one's way from the description of the projects described on the Social Responsiveness web site and the publications that are listed in departmental and research groupings' websites.

A final question is how the credibility of various research outputs in the socially responsive realm will be viewed and rated – essentially whether should be recognised in the realm of academic excellence (as journal articles currently are) or be relegated to a less highly rated form of output.

In November 2008 planning for social responsiveness took another step forward with the development of a Social Responsiveness Policy Framework, which incorporates a conceptual framework for social responsiveness. This framework acknowledges the overlap between social responsiveness and research and the extent to which socially engaged research does entail 'systematic, analytical and reflective practices' (UCT 2008; 4) and also provides for the involvement of the Research and Innovation Office in supporting and promoting research 'with an intentional public benefit, including policy research'. (UCT 2008:7)

Promotion and reward systems for academic staff

The UCT criteria for performance evaluation and promotion of academic staff – the Minimum Performance Criteria for Rate for Job – include numerical targets for research output in the form of journal articles, books, chapters in books and refereed conference proceedings. These are differentiated for different levels of seniority, with greater output of formal accredited publications demanded of senior staff.

The promotion criteria do also include a recognition of a range of research outputs and the value of community engagement. However, in spite of the balance and apparent soundness of these performance criteria, there is nevertheless the impression at UCT and across other South African institutions that there is a strong drive in academic departments for the production of journal articles in accredited, preferably international, journals, to the exclusion of other publication outputs. This might well be because of the numerical targets set for accredited publication outputs and the pressure caused by the high levels of subsidy earned for their publication.

In the Social Responsiveness Policy Framework developed at UCT in November 2008, the place of social responsiveness in the performance evaluation system was stressed once again, including the allocation of points towards ad hominem promotions A Distinguished Social Responsiveness Award has also been established. (UCT 2008; 9, 8)

In spite of this balanced approach, It would appear that there are two overriding factors at play in the current system, driven by a deeply entrenched academic culture – one is the international system of excellence and its unquestioned acceptance as the major ranking

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system in academia; the other is the money. Because of the high levels of revenue involved for the universities, the financial aspect underpinning current rating systems is a powerful distorting factor. At least from the anecdotal evidence of a large number of academics, it would appear that at UCT, the prestige attached to international publication and this financial system drives policy and behaviour on a number of fronts.

Lessons learned

The gap that is created in UCT's policies and strategies for the leveraging of the impact of its socially responsive research suffers from a lack of recognition of the potential offered in the digital world to provide easy and integrated access to university publications for the sake of access, impact and university profiling. The Ithaka *Report on Scholarly Publishing in a Digital Age, commissioned* in the UK and USA, recommends that every university should have a publishing strategy and that universities should take responsibility for the digital dissemination of their own research (Brown et al. 2007). It is in its social responsiveness development programme that UCT currently comes closest to such a strategy.

For the purposes of profiling the university's contribution to the community and ensuring the impact of nationally and regionally relevant research, the most effective approach would be the creation of linked open access repositories in the research groupings, where publications could be uploaded, metatagged for harvesting at institutional level. This would make available the full range of UCT's social responsiveness publications in such a way that they would be rapidly identified by potential readers coming to the institution in search of information and by researchers and from across the African and the rest of the world. For relatively little investment, UCT could gain considerable exposure for a substantial part of its publicly-focused research – a shop window for the development impact of its research work and a demonstration of the benefits being achieved with taxpayer investment in the university.

The use of open and flexible licences, such as Creative Commons licences, could assist in extending the reach for socially responsive outputs and publications by allowing for the 'translation' and reversioning of research for social impact. This is not incompatible with the protection of the author's rights, but does provide for a range of uses, at the author's discretion, depending on the kind of content concerned. For example, formal scholarly papers might be covered by a licence that forbids any alteration of the content, while applied research susceptible to pre-versioning for popularisations, teaching materials and community manuals might allow the content to be adapted.

As the research groupings and units involved in social responsiveness at UCT provide a wide range of publication outputs, it could be advantageous for the university to investigate what technical platforms and ICT systems for publication management, such as Open Journal Systems and Open Monographs, might best provide support for these dissemination activities and enhance their publication quality. Given the public focus of the Signature Themes and the Research Groupings at UCT, the 'more open scholarly communication mechanisms' proposed by Houghton et al. (2006) – which are currently being taken up by some of the major funders who support UCT's research and by leading world universities like Harvard – would appear to be appropriate to UCT's ambitions.

Lastly, there is a need to address the question of promotion and reward systems, which reflect a deeply entrenched value system that in fact reinforces the global power imbalances complained of by Minister Nzimande in the opening comments to this report. The system of performance measurement currently employed at UCT for the assessment and advancement of its academics in many ways reflects these divisions and distortions; as well as the sense in which socially-responsive contributions are currently undervalued. Added to

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this, the rigid adherence to citation counts as the single and all-powerful dictator of the value of research is in many ways constraining UCT from effectively profiling the extensive and very valuable work by its researchers in the socially-responsive arena.

At a national level, there is also a need for government to formulate a means or set of criteria for evaluating socially-responsive contributions within research; an impact which cannot be measured by citation counts. Responsibility also resides with national bodies to engage with changing models of scholarly communication; and with South Africa's role as a primary disseminator of quality research originating from a developing-country context. This would require at national level the re-evalutation of a reliance of a set of numerical metrics in favour of a more complex approach to research evaluation, perhaps most extensively explored in Australian research policy reviews (Allen Consulting 2005).

5. Conclusion

The argument presented in this report challenges both institutions and individual academics to broaden their notion of research in order to obtain greater visibility and meet the desired objective of research which makes a real impact on society in a country that face major development and transformation challenges. At the heart of the current challenge lies the need to interrogate the idea of the academic endeavour as a series of divisions – traditionally split along the lines of UCT's core mission objectives of research, teaching and learning and social responsiveness – and to see research instead as a continuum.

Underlying all these factors is the need for UCT and other institutions to engage with their role as disseminators of research; not only focusing on the endeavour of conducting world-class research, but also playing an active role in ensuring that this research reaches the sectors which require it in order for that research to have a real impact on society. This implies investing in ICTs, infrastructure, skills, and resources in order for the university to take on the role of disseminator; a realm previously regarded as the domain of private publishing entities.

At a 2009 workshop on the transformation of scholarly communications in Africa,[49] a group of experts from Africa and across the world came up with a vision of what this could look like in 2020, given the implementation of an open access scholarly publishing approach:.

> By 2020, the ways in which African universities and other research institutions conduct, store and disseminate research has been transformed. The mindsets of policy makers, managers, academics and researchers at all levels have been have been radically changed and open access has become entrenched as the sine qua non of effective research practices. African Universities, in particular, assume full responsibility for effective research communication. Universal access to African research allows any person to have access to the different outputs of African research, anywhere in the public and private arenas. An integrated communication system ensures that inter–regional and global – dissemination is not only possible, it has become the norm. Many people are now keen to exploit the opportunities provided by open access – even previously hostile businesses are now actively taking advantage of easy access to networks of consumers.

> The means of measuring, acknowledging and rewarding academic performance and the contribution of research are radically changed. The instantaneous nature of networked research communication means many more academics achieve

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[49] Scholarly communications in Africa project scoping workshop, Cape Town, June 2009, supported by the IDRC and the Shuttleworth Foundation.

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recognition for their contributions. They receive rapid feedback on their work from wide networks that operate across geographical and discipline boundaries. This has been challenging for many academics who were used to the isolation of outmoded methods but they are rapidly learning to appreciate the value that interactivity adds to their work.

If one were to apply the lessons learned in the course of this review of UCT's research publishing strategies and interrogate the potential for ICT use to transform this environment, what could UCT's research communication strategy look like by 2020?

The university would have an integrated cyberinfrastructure across the institution, for the management of, and access to research information and data across all disciplines. Research communications during the process of research and as well as research outputs at the end of the research process would be available online.

Open access would be the default, increasing global reach, so that UCT research is downloaded and read in most countries in the word, creating substantial increases in impact. This would also contribute to the efficiency and effectiveness of research, increasing collaborative potential and decreasing duplication. Social media would support international research exchanges and research communications could draw upon a range of multimedia options.

Federated repositories across the institution would allow for the capturing of research outputs of all kinds, and for the tagging and searching of the full range of content. This is turn would allow for the maximum re-use of research for teaching and learning and social and development impact. These repositories would be harvested at institutional level, linking into a Directory that could incorporate not only research publications but teaching and learning materials and community outreach resources produced in the university.

University systems for research management would link into this Directory, allowing for rapid reporting of UCT's research contribution across a number of fronts, both in terms of global competitiveness and development impact. This would give the university a considerable strategic advantage in profiling the nature of its research contribution, in all its facets. Not least, it would be easy to provide rapid answers to government questions about the ways in which the university is impacting on national priorities and how university communications are empowering all members of the university community.

The use of Creative Commons licences would allow for open access to research content as far as possible, while protecting the author's and the university's rights of attribution and acknowledgement. 'Share-alike' Creative Commons licences would provide the capacity, where authors wished to allow it, for the adaptation or 'translation' of research content for the production of popularisations, teaching and learning materials, increasing its potential for social and development impact. Academic staff would be familiar with their use and the university would provide central support and training for research authors in the most suitable licences for various kinds of output, leading to the most appropriate impact and benefit from their work.

The university would have an integrated and collaborative institutional infrastructure for managing the full range of its communications. This would include senior administration, faculties and academic staff, the library and students. It would be led by and Officer of Scholarly Communications and Publishing Strategy at the senior level of the university. This integration would allow the university to take a strategic view across all its communication requirements: library subscriptions and budgets; the effective dissemination of university research; the management of formal publication; strategic management of intellectual property and contracts; and support for on-campus publication initiatives and journal editors.

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The university would support the active publication of its research, providing technical platforms for the support of publishing activities. The publication focus would be aligned with the university's strategic goals and effectively marketed for maximum impact. Academic staff would be provided with mentoring and support in publishing activities and the editors and publishers of scholarly publication would be given recognition and reward for their contribution to scholarship. Publication activities would include the identification of potential in repositories and cultural and other archives of publishable material. In return for its investment, UCT's reputation as a centre for research excellence would be widely recognised. The active marketing of research publications would also ensure that the African truly becomes the global, with the particular contribution of UCT as an African centre of excellence recognised as a global standard.

UCT has a vital role to play in its position as a leading research institution on the African continent. The affordances presented by ICTs in the new global, electronic knowledge society enable UCT's research to make an impact at unprecedented levels, but for this to happen it is crucial that the university grapple with changing models of scholarly communication and with new notions of what constitutes research.

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