

UPeTD: It's the start of your publishing career

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Keywords: South Africa, eScholarship

Abstract

In the developing world the context within which new initiatives are taken is of the utmost importance: resources are constantly in short supply which implies that projects cannot be launched merely because they are interesting, because the enabling technology is available or because the rest of the world is doing it. It should make a very definite contribution to the most prominent strategic goals in order to have a chance to succeed.

The University of Pretoria is one of a few truly first world universities in South Africa, competing with the rest of the world amidst the constraints of a developing country at the other end of the globe. It strives to be known for international competitiveness, local relevance and a commitment to continuous innovation. Its graduates, branded as the Innovation Generation, must exemplify a new generation of well-rounded, future leaders and the spirit of creative energy. Over the last five years local relevance was the first priority. Top class human resources for a fast growing economy was required which necessitated massive resources and dramatic changes in order to mainstream large numbers of students from disadvantaged backgrounds.

This poses a direct threat for the costly pursuits of research, scholarship and participation in international initiatives by which the best research universities are judged. There is now a growing consensus that we run the risk of falling behind the rest of the world. Publications and patents need to increase, new researchers need to be trained and new research leadership needs to be cultivated. In this context e-scholarship makes a lot of sense.

The paper will discuss the university's electronic theses project (UPeTD) as the first leg of such an e-scholarship initiative that supports these research goals by creating a climate and environment conducive to world-class research and in step with the latest developments in scholarly communication. It is much more than a change in format. It plays a vital role in jumpstarting the careers of our young researchers.

of the philosophy underlying the project, namely that we have to use the context within which it unfolds to our advantage if we want our theses and dissertations to be the logical first step in a lifelong contribution to scholarly communication.

I will briefly touch on three issues to explain this context before moving on to the project itself:

1. The African Century
2. Research excellence at the University of Pretoria
3. Inspiring the Innovation Generation

Context

The African Century

It is common knowledge that the African continent is **marginalized** and that it is not an active participant in the global economy and the knowledge society. Poverty and unemployment is widespread resulting in endless socio-economic problems.

- Fifty percent of Africa's population of 680m people live on \$1 or less per day.
- The average life expectancy is 54 years.
- The illiteracy rate of the over 15 population is 41%.

That it is still the "dark continent" can be seen from the following picture of worldwide internet connectivity expressed in terms of Google activity (Figure 1: Where Google users are).

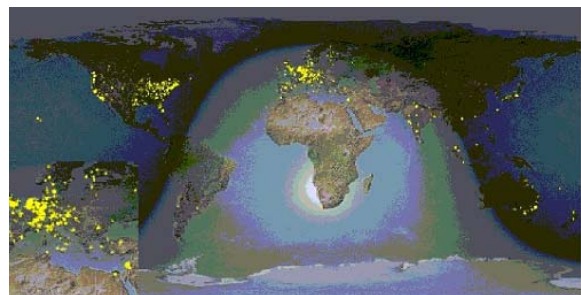


Figure 1: Where Google users are

Preface

I want to express my thanks to UNESCO for financial support which made my visit to Berlin and participation in the symposium possible.

Introduction

UPeTD: It's the start of your publishing career, is the motto of our electronic thesis initiative. It is also an expression

Various initiatives signal a turnaround. The **New Partnership for Africa's Development (NEPAD)** that was signed in October 2001 articulates "the determination of Africans to extricate themselves and the continent from

the malaise of underdevelopment and exclusion in a globalising world" [3]. A set of viable goals in combination with the resolve to end the era of free handouts and poor return on investment can produce the integration with the rest of the world that we so badly need.

Research excellence at the University of Pretoria

The University of Pretoria is one of the most successful South African and African universities. It offers the entire spectrum of disciplines and professional training through 1916 different study programmes. It is the biggest residential university in South Africa with 34000 on campus students including the biggest cohort black residential students in the country. Apart from them, 28000 students receive tuition via the Internet or other distance programmes. About 10000 students are enrolled in postgraduate programmes. Of the 1500 foreign students two thirds come from other African countries.

It is also the national leader in research output. Of the 6748 degrees awarded in 2001, 906 were masters and 134 doctoral degrees. The 2001 publication output consisted of 882 articles in accredited journals, 60 book chapters, 15 books and 123 published conference papers. Eleven new patents were registered.

However proud we are of these accomplishments, **our vision is to compete with and benchmark ourselves against the best research universities internationally.** Towards this end the following are important:

- Successful research programmes attracting the best research talent;
- Evaluation of research by means of peer review of publications;
- Relevant national and international collaboration and networking of academics;
- Access to the best knowledge communities [2];
- Development of focal areas aligned with national priorities [4], [6] and local areas of excellence in order to make the best use of limited resources;
- Research leadership and management to ensure that research projects culminate in appropriate research outputs;
- Academic integrity and protection of intellectual capital;
- Continuous innovation and application of relevant technology.

Inspiring the Innovation Generation

Our graduates, who constitute our premium product, are branded the *Innovation Generation*. This idea exemplifies "a new generation of well-rounded, future leaders and the spirit of creative energy" [7].

We pin our hopes on them. To become a respected international research university large numbers of them will have to enter the postgraduate programmes. We ex-

pect them to do high quality research and publish in the best journals. Their work must culminate in patents and they should take part in international research initiatives.

For the University it has three major implications:

1. They have to *receive an excellent academic education* as a start to lifelong learning to keep up with the demands of their professions and research fields. Often their preparedness for academic study has to be advanced through the University's outreach programmes for schools as well as bridging programmes on campus. Education innovation and exploiting modern technology for telematic learning take care of state-of-the-art teaching programmes.
2. They have to be *exposed to the knowledge society* and develop a variety of skills such as communication, negotiation, teamwork and entrepreneurship to function internationally. Compulsory courses in information literacy and extensive skills training make a good contribution.
3. They have to be *introduced to the world of research and scholarship* and get access to the right knowledge communities. Their apprenticeship should include a process of enculturation to learn the ways of these communities and become attuned to their values. Research leadership has to be demonstrated.

What's needed: a value net

To accomplish this, a chain of quality events needs to be put in place leading to ultimate success in the international research arena. Even more important is linking the nodes of the value chain to become interactive thus creating a value net of stakeholders who contribute their strengths to obtain synergies. Our electronic thesis programme is one of these nodes embedded in the quality chain and we constantly keep in touch with the entire process.

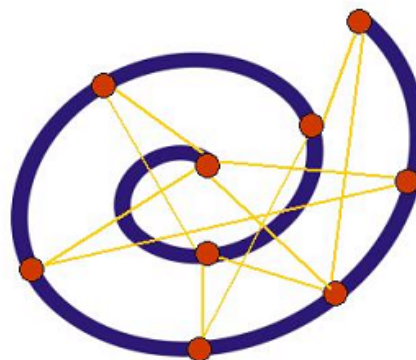


Figure 2: The value net

UPeTD: We build the road by walking it

Project beginnings

The University of Pretoria Electronic Theses and Dissertations project kicked off in 2000 after a visit by Ed Fox. We decided to join NDLTD and take the open access route because we strongly supported the open source/open content movement and it suited our belief that *if its not on the web, it might just as well not exist*.

Three faculties committed themselves to the pilot phase which was endorsed by the University's top management. A campus steering group was appointed to represent the interests of the various stakeholders and to act as a sounding board for the project team.

The library grabbed the opportunity in the absence of a central office for postgraduate research. It provided us the scope to integrate our service further into the academic process. It also matched the knowledge stewardship part of our mission and was another step towards the e-university which we actively pursue. This proved to be a fortunate choice on account of our well-established networks both on and off campus.

In our situation initiatives like these do not necessarily come with the resources and it may take a long time before this can be secured. Early momentum usually comes from the enthusiasm of the champions. Thus we decided to start with a low-key implementation in the true spirit of an old African philosophy: **Build the road by walking it**. This works very well in a situation where others have done a lot of trail blazing, where the destination is obvious and where help is available.

The University of Pretoria is run in a decentralized fashion. Faculties have a lot of freedom to interpret rules and regulations and to develop processes to suit their specific needs. This means that the preferences and customs of faculties have to be respected and accommodated. Changes will only be accepted once the advantages have been illustrated and new procedures have been developed. Obviously there was no point in elaborate planning or setting up a grand infrastructure.

In fact, we did not even buy new hardware and merely used a "spare" server to get going. Acrobat software for the staff and for a number of student workstations in the library was bought and academic departments were encouraged to do the same. ETD software modification was kept to a minimum because it obviously worked well and we wanted to capitalize on the advantages inherent in an international initiative. The server is the responsibility of the university's IT department and periodically we contract the services of a student to make software changes. This also strengthened our resolve to keep ICT to its *enabling role*. To this day students often respond with "Is that all?" when we teach them how to create an etd and submit it.

A web site, which could both be a public interface as well as a work area for our postgraduate students, was a high priority. Students are expected to create and submit their theses with minimal help from us. I must admit that we committed a lot of plagiarism and want to thank all of you who made a generous contribution without even knowing about it!

A lot of effort is put into marketing the programme and its benefits to students, supervisors and faculty administration. We address postgraduate students whenever they visit the campus for group meetings. We regularly send messages to students and supervisors by mail, e-mail and SMS. Posters and brochures spread the message on campus. We have regular meetings with postgraduate administrators.

As indicated, staffing was going to be a problem. Fortunately at the end of 2001 a decision to cut back on secretaries in the library landed us the opportunity to attract one of them to the UPeTD team. Her expertise as an accomplished thesis typist proves to be invaluable in her new role as quality controller. Another of these previous secretaries with an extensive campus network and good graphics skills, spends one day a week on the project liaising with students, supervisors and campus administrators and helping students with their graphics problems.

Ten librarians responsible for postgraduate students and who work in the different faculty libraries shared our self-training and process development experience and each had to complete a thesis conversion and submission successfully to qualify. Their knowledge of postgraduate students' needs was a great help. Currently they are the project ambassadors in their libraries and in their faculties. These colleagues also organize training sessions for students.

Accomplishments

The project is reasonably successful in the light of the fact that we have invested very little in it thus far. We currently have 39 doctoral theses and 26 masters dissertations. Forty percent was done independently by students. The rest formed part of the staff training. The authors seem to be doing a fair amount of promotion themselves by informing their colleagues all over the world about availability. They are also pleased to be "picked up" via the search engines and with readers' responses. In a number of cases research co-operation has been the result. Theses still tend to be digitized versions of paper documents and only one dissertation has a substantial multimedia component. Experience with local lack of adequate bandwidth may be an inhibiting factor.

From the start the need was expressed for the SYSTEM to be used as an access point for examiners to completed theses/dissertations to eliminate the ineffective practice of mailing printouts all over the globe. Rules and procedures were developed and this can be regarded as one of the additional benefits of our project that has been used successfully on four occasions. In due

course we hope to modify the software to streamline this workflow.

An initiative like this also provides other opportunities that are not obvious at the start. From studying other etd websites we realized that our university did not have a one-stop information source for study and research skills, citation, plagiarism and other issues of interest to post-graduate students. Information was fragmented and rife with distortion. We collected and organized information and incorporated it in our web site. We were also very well positioned when concern was expressed about the rising incidence of plagiarism and we are currently leading an anti-plagiarism campaign on campus - another illustration of the value net principle.

Problems

Although there is general acceptance of the idea and very little opposition buy-in is still low. In spite of aggressive promotion and incentives for students too many postgraduate students and their supervisors still seem to be unaware of the advantages and do not consider it to be the logical option. The main reason for this is definitely not a lack of ICT literacy or a lack of infrastructure but rather a procedural outcome. Students still have to hand in three hard copies for their faculty's records making it an easy choice to order two extras for the university's archive. At this stage creating and publishing an etd constitutes an additional task at a time when they are either too preoccupied with completing their degree or so relieved that they would rather try to forget it as soon as possible.

The simplest solution to this problem is to make electronic submission mandatory. In the mean time we will focus our marketing efforts on students who are in the first two years of the postgraduate studies and whose mindsets can still be changed.

Agenda

We feel comfortable that the SYSTEM and our processes and workflows, albeit rather basic, is stable and that everything works well. We have positioned ourselves on campus in the local etd community. Now is the time to move on to a higher, more sophisticated level.

We have set ourselves the following goals for the next three years:

- Lobbying for mandatory e-submission to start with doctoral theses in 2004 and masters dissertations in 2005. There is in fact no good reason NOT to publish on the web if we are serious about the e-university.
- Buying new hardware.
- Streamlining processes and workflows to deal with mandatory submission.
- Solving the LaTeX problems.
- Migrating to XML.
- Becoming OAI compliant.

- Providing improved support for staff and students, particularly on the web.
- Promoting the concept of enriched content.
- Getting involved with African initiatives such as the Association of African Universities' **Database of African Theses and Dissertations (DATAD)** and **Digital Library for Theses and Dissertations** [1] and UNESCO's intended workshop. We have gained experience and expertise within a constrained environment that could be shared with our other African colleagues. Students from African countries who now have prominent research positions in their countries of origin produced six of the theses in our database.

eScholarship

Apart from these goals pertaining to electronic theses in particular we are also investigating the other aspects of a comprehensive eScholarship initiative of which UPeTD will form an integral part. There is a need to create a culture of alternative publication if we want to stay in touch with this very exciting development. It is also clear to us that a university cannot strive to be a research center of international standing without co-operating with other institutions in this area [5].

We are currently experimenting with MIT's DSpace and Eprints.org to find solutions to a wide range of needs:

1. *Repositories of eprinted UP articles.* We are aware of the access problems experienced by researchers all over the world and in particular in the developing world. We want to contribute to a solution by making articles written by UP scientists available to the research community without restrictions. Facilities for preprints should also be available.
2. *Communities of practice documents.* In terms of the library's role in knowledge management we have come across these communities' need for tools and space to share their documents. Some of these documents do not qualify for traditional publishing and play other roles in the scholarly communication process.
3. *Learning and research material.* Many Student publications that form part of postgraduate work but do not fall within the thesis/dissertation category contain valuable information that can be used by other students.
4. *Virtual publications.* Repositories of different research publications offer the possibility to repackaging them in different ways depending on the needs of different groups on campus and possible readership.
5. *E-journals.* A number of e-journals are produced on campus on behalf of non-profit societies. These projects tend to be the hobbies of passionate society members and can all benefit from workflow improvements and better solutions to the peer review process.

Conclusion

UPeTD is a success story. We are contributing to the corpus of freely available theses and dissertations on the web and think of ourselves as respectable members of the NDLTD community. We are also serving the interests of our university and our country by showcasing the results of our postgraduate research. Along the way we have been instrumental in changing policies, procedures and paradigms on our campus and paved the way for e-scholarship to become a topic of discussion and an issue to be pursued.

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