Leading Academic Change Management: A Case study of Faculty formation

dr Christo Potgieter
Waikato Institute of Technology
Hamilton, NZ
itbcp@wintec.ac.nz

dr Marlien Herselman
Technikon Pretoria
South Africa

Proceedings of the 16th Annual NACCQ, Palmerston North New Zealand July, 2003 (eds) Mann, S. and Williamson, A. www.naccq.ac.nz

Abstract

The nature of IT (Information Technology) and its use in society is changing. The focus is now, more than ever, on ICT (Information and Communications Technology). Government and industry are increasingly emphasizing the necessity to review current services in ICT skills development and knowledge production. This paper revisits a proposal for the formation of a Faculty of Information Technology at Technikon Pretoria in South Africa, indicating possible learning opportunities for New Zealand. After briefly visiting the Department of Computer Technology, we review emerging needs from broad society and pressures for changes at Higher Education Institutions. Then we briefly visit approaches taken at selected institutions across the world, the approach of Technikon Pretoria and early observations.

Keywords

IT Management, Academic Management

1. INTRODUCTION

Albertyn presented a poster paper at NACCQ 2001, profiling the IT Department of Technikon Pretoria in South Africa. She stated that Technikon training was very successful, not realizing that the Department was already growing much faster than is evident from the profile she was presenting at the time. In fact, the Deputy Vice Chancellor of the time formally requested Christo Potgieter during the same month to draft a proposal for the formation of a Faculty from the department. Many benefits could be gained from the formation of a Faculty of ICT. Many staff members already believed that it could result in improved focus being a strategic business unit in the institution due to improved focus of the Faculty Management team and improved authority for negotiation externally and internally. It could also enhance possibilities for the Technikon to be formally classified as an internationally recognized Institute of Technology or even University of Technology, enable marketing to be more inspiring to attract better students and staff and industry may acknowledge and support the visible commitment. The high profile position of the Dean would enable him/her to build a presence in the IT industry for support. This paper summarizes some of the investigations leading to the formal proposal as well as early experiences after formation of the Faculty in 2003.

2. NATIONAL REQUIREMENTS AND INTERNATIONAL TRENDS

On national levels government instituted a project to formulate strategies for IT in South Africa between 2000 and 2002, called the SAITIS project. The results of this project clearly indicated the necessity to increase the role of the higher education sector in advancing IT skills development and growth with IT. The Foresight reports of the National Research Foundation were published along with the SAITIS project (South African IT Sector strategy development), also emphasizing the need to increase the role of higher education in IT skills development. The National Research Foundation also defined a category for research funding especially for IT since 2001, the same time that the Minister of Education strongly emphasized the role of Higher Education in meeting national demands for IT skills development at a meeting of the Committee of Technikon Heads. The Minister of Arts, Culture, Science

and Technology described at a UNESCO seminar in France during 2001, that IT is one of two key technologies that hold special promise for Africa (the other being Biotechnology, but it has more complications), and he added the important role of Higher Education institutions in the incubation of high-technology business start-ups, as well as innovation in organizations. And finally did State President Mbeki indicate during 2002 that he is considering focusing additional investment for IT skills and product development at one or two higher education institutions. Clearly institutions that could contribute to meeting these national challenges should do everything possible to address those concerns and strong focus on IT in the country.

Technikon Pretoria also appointed Miller & Esselaar associates to conduct a brief international investigation. During 2001 these reports described changes in the IT industry and higher education sector approaches to meet the challenges. While planning the future of the academic offerings at Technikon Pretoria during 2001, the management team of the Department of Computer Technology identified several aspects that must be managed well. At the top of the list was the development of management as leaders, followed closely by continuous profitability and skills development for specialization degrees and research. This was supplemented by the development of abilities to undertake joint ventures with industry, government and academic institutions locally and internationally, as well as continuous study of new ICT to update offerings. The rest of this paper describes the internal situation and the development of the Faculty, ending with observations regarding meeting objectives so far.

3. PROFILE OF THE DEPARTMENT OF COMPUTER TECHNOLOGY

In the Tertiary Education sector of South Africa, Technikons fulfil a similar role to Polytechnics of New Zealand, and the maturity of institutions also varies in South Africa. By the end of 2002, the Department of Computer Technology was leading in most aspects of academic management via the inter-institutional forums for IT, while research and industry partnerships was also growing and was viewed as a benchmark for other Technikons to follow.

By 2002 the Department had more full time equivalent students than three of the seven faculties and it was the largest residential IT Department in South Africa, with over 2000 students. Students were doing courses from the broad spectrum of qualifications in the IT field, from bridging courses to research degrees. To service these students the Department used 11 PC laboratories with over 400 PC's (most of them networked) with over 50 academic staff members (less than 5 support staff). The Department offered about 150 subject modules, of which over 50 were at fourth year (Hons degree) level. The operational budget was close to R15M. New offerings were being implemented that will increase student numbers, income and infrastructure.

Clearly the student numbers were already high, with the accompanying logistical resource implications of the ICT field. The Department already functioned as a "min-faculty" with an extra layer of management that is not present in other departments of the institution, causing extra load for staff in the absence of additional funding.

4. WHAT COULD WE LEARN FROM OTHER FACULTIES OF IT?

It appeared that fit-for-purpose approaches are used all over the world. Faculties of IT are not unheard of. At Queensland University of Technology, long ago a Polytechnic, the Faculty of Information Technology was already formed during the 1980's, and it currently consists of a few Schools. The Faculty of Information Technology at Monash University presents several specialization degrees at their Schools that include Business Systems, Information Systems, Computer Science and Software Engineering. Still in Australia, at the University of Technology, Sydney, the Faculty of Information Technology also covers the broad spectrum of the IT field, while the University of Wollongong have slightly less emphasis on the business aspects of IT. At Auckland University of Technology in New Zealand, IT offerings are presented from the Faculty of Business using a matrix organization structure. Massey University services their IT offering from two of the Colleges in the University, covering most of the broad spectrum of the IT field.

At other education institutions in South Africa, the IT programmes are still offered from the departments it evolved from decades ago. Typically, Universities have separate departments covering a portion of the IT field, for example Computer Science, Information Systems, Informatics, Computer Engineering and Information Sciences. The departments reside in separate faculties, namely Commerce, Natural Sciences and Engineering. The University of Pretoria introduced a School of Information Technology in the Faculty of Engineering, Built Environment and Information Technology as an "administrative composer" of four-

year BIT degrees compiled from subjects offered by the classical departments related to IT.

In Hungary the Budapest University of Technology (previously the Technical University) presents offerings from the Faculty of Engineering, with very little provision for non-technical aspects such as "Information Systems". Budapest Economic University across the river is aggressively expanding their IT programme in e-commerce in the Faculty of Economic Sciences, still including subjects in the classical field of Computer Science. And Budapest Polytechnic has a Faculty of Informatics that has little emphasis on commercial perspectives, enabling them to concentrate on software development only.

From these examples one can see how the positioning of the IT offerings differ, depending on the approach of the institution to meet challenges. Many more details from the investigations were used to motivate formation of a Faculty at Technikon Pretoria and to design it.

5. THE PROPOSED SOLUTION

Three essential matters were supporting the need to form a Faculty of ICT. Firstly, government was calling on the Higher Education sector to increase their contribution for the full spectrum of the IT field on all levels of academic achievement. Secondly, market demand for IT staff remained high and interest for studying at the institution continue to increase. Thirdly, no institution in South Africa simultaneously offered IT courses at all levels of academic achievement and the full spectrum of the IT field, from a single Faculty or School. Clearly it would be beneficial if Technikon Pretoria could capitalize on this situation via the formation of the Faculty. During November 2002 the Board of Technikon Pretoria approved Faculty formation, after which the hierarchical structure and resource allocation were revised.

Because there was no common pattern from above organizations regarding organizing their Faculties of IT, it was decided to construct the new Faculty hierarchy by revising the successful departmental structure that already covers the spread from IT engineering matters right to business matters re IT. The resulting departments that are doing mainly undergraduate teaching to BTech level (4 years) are Computer Systems Engineering, Technical Applications, Software Development, Web development & Multimedia and Business Analysis & IT Management and End User Computing. The Section for Post-Graduate studies and Research was promoted to Department level to also present a taught Masters degree, assign research students to staff across the Faculty and monitor progress, support staff research and manage overall academic quality processes.

Administrative support was also increased by the addition of two secretaries for the HOD's and a full complement of staff for the Dean's office. All Section Heads were offered promotion to the level of Head of Department, but one declined. The overall budget was also increased for the Dean's office, secretaries and promotions.

6. OBSERVATIONS

Firstly, the decision to form a Faculty was already made in 2000, but the formal argument and paperwork was required! Most of the key decision makers were already of the impression that the formation of a Faculty of ICT would be good. In fact, the original assignment was to write a brief paper to the Board to propose the formation. However, it turned out that institutional policy already existed to guide restructuring of the academic units, and that this policy prescribed a comprehensive process to be followed and more detailed investigations. To some extend the final proposal merely provided 40 pages that meets the requirements of perceived comprehensiveness.

A very important observation was the presence of prejudice in some academic circles about what constitutes a Faculty. The field of IT is in many regards still emerging and does not have the same richness of classical and traditional Faculties. Many people were in fact not seeing the formation of a Faculty as an organization structure following from business strategies, but they viewed it as a grouping based on intellectual similarities and traditional academic disciplines. The particular proposal avoided detail debate by indicating that Faculties of IT already exist very successfully elsewhere and that we could benefit from following.

Naturally were there many discussions regarding the additional costs caused by the formation of a Faculty. It was proposed by some people that Faculties should be consolidated to achieve savings for the new Faculty, even if it takes more than a year to do. At the same time was government consolidating institutions and would Technikon Pretoria be merging with two other institutions from 2003. This in fact created an opportunity, because it was observed that Technikon Pretoria is aup to double the business in IT education of the other two institutions combined. It appeared in fact that IT was the only field were a Faculty was already envisaged!

Quality statistics was often not available and its status dynamic. For example, Department budgets were mostly based on historical expenses and not

income generated, and the institution was changing the whole profit model for all organizational units. It was however evident that the IT programmes were funded far below levels one would have expected when drawing high subsidies for being Natural Sciences offerings. The final proposal exposed these discrepancies and then emphasized national imperatives and good strategic positioning.

The final consideration in our paper is whether current implementation is addressing the key success factors identified earlier on. Management of the new Faculty was interviewed a few weeks before official opening of the new Faculty on 21 May 2003. Positive aspects include increases in the number of staff involved in research activities, the proper development and upgrades of the new courses for specialization degrees, studying new ICT and undertaking more initiatives with industry. Staff morale was mixed due to increased workload and some frustrations. But it was not clear how profitability, the development of management capacity and capitalization on having Faculty stature will in future be emphasized.

In conclusion, it still is a typical project of change management, currently implementing many changes to be managed for success while little has so far changed for most academic staff. It remains a major challenge for us IT academics to drive initiatives outside the objective discipline of the Natural Sciences!

REFERENCES

Albertyn, F. (2001) Technikons in South Africa. NACCQ, July 2001.

Miller, J. (2000) "International Trends in ICT Education" and "Aspects of the South African Context for Tertiary Education in ICT". Reports to Department of Computer Technology. October 31, 2000.

Potgieter, B.C. (2002) "Proposed Formation Faculty of Information Technology". Management report for Technikon Pretoria, May 2002.

SAITIS project documentation. (2002) For example: South African IT Sector Development Framework. November 2000. www.saitis.org.za accessed on 5 May 2002.

Websites and brochures of the following institutions during Apr-Sep 2002: Auckland University of Technology, New Zealand (www.aut.ac.nz); Bond University, Australia (www.bond.edu.au); Budapest University of Technology and Economics (Brochures, Visited, www.bme.hu); Budapest Polytechnic (Brochures, Visited personally); Curtin University (www.curtin.edu.au); Queensland University of Technology, Australia (www.qut.edu.au); Massey University, New Zealand (www.massey.ac.nz); University of Technology, Sydney (www.uts.edu.au); University of Wollongong, Australia (www.uow.edu.au); UNITEC, New Zeand (www.unitec.ac.nz); University of Pretoria, South Africa (www.up.ac.za); University of Witwatersrand, South Africa (www.wits.ac.za); Waikato Institute of Technology, New Zealand (www.wintec.ac.nz)

Using ICT in Tertiary Education - Do We Dare To Compare?

dr Christo Potgieter
Waikato Institute of Technology
Hamilton, NZ
itbcp@wintec.ac.nz

dr Marlien Herselman
Technikon Pretoria
South Africa

Proceedings of the 16th Annual NACCQ, Palmerston North New Zealand July, 2003 (eds) Mann, S. and Williamson, A. www.naccq.ac.nz

ABSTRACT

Information and Communication Technologies (ICT) are major driving forces of globalised and knowledge-based societies of a new world era. They will have a profound impact on teaching and learning for two decades to come, including having dramatic effects on the way tertiary education institutions carry out their functions of teaching, learning and research, particularly on the creation, dissemination and application of knowledge. These developments pose unprecedented challenges to tertiary institutions. The purpose of this paper is then to describe a high-level framework that could be used to assess tertiary institutions' use of ICT for improvements in the tertiary sector. The empirical study has already commenced in South Africa and the comparative study in New Zealand will start near the end of the year.

Key words

IT Management, Academic Management

1. INTRODUCTION

As countries increasingly become knowledge-based societies, there will be a greater demand for continuing and life-long education. With this development the need for even more flexible learning, available anywhere, anytime and on any topic will increase. The impact of technology puts South African institutions of higher education (Higher Education Institutions - HEIs) under pressure to provide learners with technological skills in order to adapt to all the challenges of a competitive economic environment. The shift from the Paper age to the Information age requires that the user-centered models replace provider-centered ones in which learners construct their own knowledge (Cronje & Clarke 1999:1).

Policies for South African higher education acknowledge the imperatives posed by Information and Communication Technology (ICT). So is the integration of ICT in course content and delivery emphasized by The National Plan for Higher Education (April 2001). This document emphasizes the role ICT can play in enhancing students' mobility, delivering information and to provide broader access to knowledge. However, South African HEIs still have a long way to make optimal use of ICT in the learning process. Although some institutions have made progress in this regard, there are a number of institutions and academics for which the new knowledge based era has not yet dawned.

It is hoped that through this paper HEIs can be guided to develop programmes with effective integration and utilization of ICTs in their multidimensional functions and stimulate academics to explore opportunities posed by ICT much more. Lastly, the authors provide guidelines on how to compile an institutional ICT profile to determine the readiness and maturity of an institution to apply ICT. The application of the suggested maturity tool will assist HEIs to develop a ICT profile as well as the important ICT policy document, the strategic directive of ICT implementation of an institution.

2. DETERMINE THE HEI'S MATURITY REGARDING ICT

At a conference of Rectors, Vice Chancellors and Presidents of African Universities held in Arusha, Tanzania in February 1999, the Association of African Universities (AAU) was mandated to undertake a survey