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INTERNATIONAL ABET ACCREDITATION: FROM THE PERSPECTIVE OF A SOUTH AFRICAN INFORMATION SYSTEMS DEPARTMENT

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Abstract:

The undergraduate Information Systems program of the Department of Informatics, University of Pretoria recently obtained ABET accreditation. Having an accredited program and keeping it accredited, has quite a few implications on the processes and structure of the department. However, the paper will mainly focus on the difficulties surrounding getting a non-US IS program accredited by a US based accreditation body. It is the hope that the insights that we gained from this experience will assist other hosts of non-US programs in their preparations for ABET accreditation.

Keywords: ABET accreditation, internationalization of education, non-US programs

I. INTRODUCTION

The Department of Informatics at the University of Pretoria, which celebrates its 21st birthday this year, recently obtained accreditation for its Bachelors degree program in Informatics from the Computing Accreditation Commission of ABET, Inc (ABET CAC). Since its inception, the Department of Informatics based its Information Systems curriculum on international standards. The accreditation demonstrates that despite the difficulties of being part of an educational institution which went through transformation with the rest of South Africa from 1994 as well as sporadic skills shortages, a successful program is offered to students.

ABET is a United States (US) based federation of over 29 professional and technical societies and is a recognized accreditor of college and university programs in applied science, computing, engineering and technology education. Its main focus is on assuring quality through a voluntary, peer-reviewed process that requires programs to undergo comprehensive, periodic evaluations. The evaluations, conducted by teams of volunteer professionals working in industry, government, academia, and private practice, within the ABET disciplines; focus on program curricula, faculty, facilities, institutional support, and other important areas.

One of the key elements of ABET accreditation is the requirement that programs continuously improve the quality of the education provided. As part of this continuous improvement requirement, programs set specific measurable goals for their students and graduates; assess their success at reaching those goals; and improve their programs based on the results of their assessment. In addition to providing colleges and universities with a structured mechanism to assess, evaluate, and improve their programs, accreditation also helps students and their parents choose quality college programs; enables employers and graduate schools to recruit graduates they know are well-prepared; and is used by registration, licensing, and certification boards to screen applicants (ABET, 2009).

The advantages of offering an ABET accredited program are numerous. The Department of Informatics is using the program's status to satisfy stakeholders (including parents, students and industry) and hence attract students. To become and stay accredited has an impact on internal processes, curriculum design and other activities within the department. However, the main focus of this paper will be a discussion in section III about the obstacles experienced by the Department of Informatics towards getting a non-US IS program accredited by a US based accreditation body. As background, section II gives an overview of the internationalisation of both education and accreditation. A short conclusion and final recommendations are given in the last two sections of the paper.

II. INTERNATIONALISATION AND ACCREDITATION

Communication technologies, the knowledge economy and the increased mobility of people whether physical or virtual are all factors contributing to the increasing interconnectedness of the world. Although not a new concept, international education is growing, changing and evolving along with the global world. New technology and communication systems not only make international studies more accessible but also enable foreign students to keep in touch with their social support systems at home. On the other hand, the providers of education (e.g. universities, colleges, and other for-profit institutions) now have the opportunity to expand their supply of educational products to the international market. According to Greengard (2009), more than 1.5 million students a year enroll for studies outside their home country.

There are several advantages of being involved in international studies for both students and educational institutions. Students now have a more diverse menu of educational programmes to choose from (including diverse pricing). They are also exposed to other national cultures as well as research cultures which enrich their learning. Apart from attracting more fee-paying students, universities believe that their ability to offer international studies will enhance their international standing (Greengard, 2009). However, for institutions in the higher education sector this implies a rethinking of their curricula, their processes and structures. Partnerships are formed, exchange programmes are established, joint curricula is being developed and the exchange of credits is being made possible (van Damme, 2000). The competition from providers outside the education sector is immense. Being much more agile, they make full use of new technology and defy the traditional identity of universities by blurring distinctions between academic, research-driven education and vocational training (Van Damme, 2001:5).

It is clear that the borderless educational landscape is rich in diversity and opportunities. However, according to van Damme (2001: 5) it generates three main challenges: the regulation of new providers and the various forms of transnational higher education, the international transferability and recognition of qualifications and credits and finally the development of an international approach to quality assurance and accreditation. Van Damme is of opinion that a new regulatory framework is needed to address all of the challenges mentioned above,

The difficulty of agreeing on the content of such a framework is not to be underestimated. The issue of international accreditation and quality assurance can serve as illustration. Although there is general agreement on the need for an international approach to quality assurance and accreditation, there are many opinions on how to go about it. Many institutions turn to established accreditation organizations to gain international acceptance (Greengard, 2009; van Damme, 2001). Van Damme believes that national accreditation agencies should work together towards a kind of harmonization and international benchmarking of good standards and methodologies as well as the mutual recognition of each other. The concept of an international accreditation agency seems unrealistic due to fears of an all-powerful bureaucratic agency outside governments or higher education institutions (van Damme, 2001).

The recommendations made by van Damme in 2001 have started to realize. In 2007, representatives from six international accrediting bodies (of which ABET was one) signed the Seoul Declaration. This bound them towards establishing an "accord on the accreditations of educational programs in the computing and IT-related disciplines" (ABET, 2008). ABET started its first accreditation visits to programs outside the U.S in 2007. ABET reported on some of the

difficulties they experienced by applying their criteria to non-US programmes in the most recent annual report. One difficulty that they highlight is the difference in program naming. According to them, many “names are used for seemingly similar programs, and sometimes the same name is used to represent programs from seemingly different disciplines.” (ABET, 2008:20-21). They are however participating in international discussions pertaining to the development of an accord for computing programs that shows resemblances to accords ABET currently participates in for engineering and technology programs. This will aid them in their decision on whether programs meet agreed-upon standards.

III. PREPARATION FOR ACCREDITATION

In 2004 the Department of Informatics at the University of Pretoria decided to investigate the possibility of international accreditation for the undergraduate degree BCom (Informatics). No accreditation body for IT degrees is available in South Africa and we had to look internationally. The British Computer Society and ABET were the only two viable options available at that stage. Accreditation via the British Computer Society was more oriented towards Computer Science degrees and did not suit the business degree in Information Systems that we present. ABET seemed to be a suitable vehicle due to the fact that it has a specific Information Systems stream.

In preparation for accreditation, one of the lecturers attended a workshop during the AMCIS'2005 conference in New York, where ABET program evaluators were trained to do evaluation visits. The next step was to align our degree program with the requirements of ABET. We went through the formal process at the university and got Faculty board and Senate approval for the changes in the degree program. The only major change that we had to incorporate was the addition of a Mathematics module. Except for trying to translate the US semester hours described in the ABET documentation for each course, we did not experience problems that prepared us for the challenges that were to follow.

IV. THE CHALLENGES OF BEING OUTSIDE THE US

Being part of the first programs to be evaluated outside the US provided quite a challenge for the department. In this section, the challenges preparing for the accreditation visit, the accreditation visit itself and the interim report will be discussed.

First challenge: Finances

At the beginning of 2006 we formally informed ABET that we would like an accreditation visit. We studied the guidelines and finances and submitted a budget proposal to the Dean of our faculty. Here we met the first challenge. We had to budget for three return business class air tickets from the US to South Africa, which is not the case for programmes in the US. We were in the privileged position that we had the full support of the Dean and top management and they supported our request for a budget of approximately \$40 000.00 for the accreditation visit. We started preparation of the Self Study report and documentation by middle 2006.

The second financial challenge was to match the finances of South African universities to that of what ABET required in the Self Study report. All amounts also had to be converted to dollars, not an easy task when there is a lot of fluctuation in the economic market. Having a totally different economic system and living cost, we were not sure if the financial statements and the amounts provided by us, will make any sense to the ABET program evaluators.

The third financial challenge was to prepare extensive documentation, not only for the Self Study report, but also for the accreditation visit on a normal operational budget with no extra provision for the accreditation process. Files, paper, printing and the cost of a courier service to the US had to be handled by the department.

A fourth financial challenge was when we realized that we will need administrative assistance with the process. Having no budget for extra administrative help, we used a vacant lecturing

position to appoint a temporary person to assist the lecturers to compile the necessary documentation.

We did not have the financial means to attend the regular workshops and training provided by ABET because it was located in the US. The challenge was to interpret the ABET documentation without the benefit of these workshops and seminars.

Second challenge: Academic year

The normal academic year in the US stretches from August to May the next year. In South Africa the academic year is from February to November with the summer holidays in December and January. Although the accreditation visit was to take place in October 2007, we had to prepare our documentation in the 2006 South African academic year.

When compiling the Self Study report, we realized that the differences in terminology had to be explained and we included two pages clarifying the academic year, organizational structure, tenure and language policy of the university.

When we had the accreditation visit in 2007, we realized that ABET had revised the standards for their academic year from August 2006 to May 2007. We however worked on the standards for August 2005 to May 2006, because of our academic year. With the help of our external evaluators, we overcame this difference during their accreditation visit by adding documentation and explanations.

Third challenge: Semester hours and length of the academic programme

In the preparation of the Self Study report we realized that there is a difference between what we call notational hours, that is the total hours that a student should spent on a course, and semester hours as specified in the ABET documentation. We had to translate our notional hours to semester hours, which was a very time consuming task and in the end it was still not entirely correct. Luckily a sympathetic evaluation team helped us to correct it during their visit and we were relieved that we still met the ABET requirements.

Our academic programmes for undergraduate students in South Africa are three years long and not the normal four years as in the US. We had to ensure that we cover all the material required from ABET in the three years.

Fourth challenge: Self Study report

The Self Study report had to be submitted on the 1st of July 2007. We started preparing the document in the middle of 2006, but still battled to finish it on time. The final editing of the document was a fulltime job that took four weeks, instead of the estimated two weeks. We were fortunate to obtain an example of a previously submitted Self Study report, without which we would have had difficulty to compile our own report, despite the clear guidelines provided by ABET.

A large amount of information about the university had to be compiled and although cooperation from the different support departments in the university was excellent, it was difficult to find the exact information needed. A Quality Unit was established at the university in 2006 to coordinate the audit by the South African Higher Education Quality Council (HEQC) that was to take place at the beginning of 2007. The Quality Unit compiled a detailed digital record of the university. When we approached the Quality Unit in the beginning of 2007 to help us with the needed information about the university, it was with great relief that we found that the CD ROM that they have compiled for the audit, could also be used as part of our Self Study report.

We appointed a temporary administrative assistant (a retired professor) to collect all the information and put it in the correct format. Despite having had a dedicated person working on the report, it still took one of the authors four weeks to ensure that the report is accurate and complete.

During and after compilation of the Self Study report, the university decided to redo their web site and the URL was not accessible. We had to note that in the report and had to refrain from referring to the web site for information.

Fifth challenge: Personnel

A different system for the appointment of lecturers is used in South Africa. We do not have, for example, tenured and non-tenured faculty. Even the word faculty has a different meaning. An explanation was needed in the Self Study report and we had to translate our data to fit the requested data.

When we submitted the requested Interim Report in June 2009, we forgot to explain the terminology used for personnel and had to submit supplementary information for the evaluator afterwards.

Sixth challenge: Accreditation visit

In 2007 the Quality Unit started to assist departments with accreditation and evaluation visits. This has been a tremendous help in organizing their flights, accommodation and the programme for their visit. The assistance that we received from our Quality Unit changed this challenge into something that we could handle. They were responsible for booking of air tickets, accommodation, meals, venues for interviews, appointments with top management and a work area for the evaluators.

The months leading up to the accreditation visit were used to prepare and finalize the documentation needed by the evaluation team. This is a time consuming task that must not be underestimated.

Seventh challenge: The name of the programme

After the accreditation visit we received a message that the name of our programme, Informatics, instead of Information Systems is causing a problem with ABET (refer to section II for the mentioning in ABET's year report on difference in programme naming). The term Informatics has different meanings and we had to provide them with an explanation how we are using Informatics (see Appendix). They suggested that we change the name of the programme. That is something that cannot be easily done. Our degrees are registered with the South African Qualification Authority and it will be a two to three year process to change the name. We have also spent considerable marketing money to establish our degree in industry and after consultation with our advisory board realized that it will not be a good idea to change the name of our degree. The name Informatics was still mentioned as a problem that we needed to address in our Interim Report in June 2009.

V. RECOMMENDATIONS

In view of the experience that we had with the accreditation process, we want to make the following recommendations for universities outside the US that seek ABET accreditation:

- Ensure that you have the full support of the university especially from top management and the Dean.
- Be prepared to spend a considerable amount of money because of the cost involved in preparing the documentation and the visit of the evaluation team.
- If possible, attend workshops advertised through ABET or the program evaluator training.
- Obtain the CD's distributed by ABET on accreditation.
- You need detailed information about the university and would need proper support from administration to get all the required information.

- Allocate enough time to complete the Self Study report and documentation for the visit. It will probably take you longer than a US-based university to complete the report. If possible find an example.
- It is a good idea to have a dedicated administrative person in your department to assist with documentation and the visit (if you do not have a unit that can help you with that).

VI. CONCLUSIONS

To obtain international accreditation for a degree in South Africa is an achievement. Except for the MBA programme offered by the Gordon Institute of Business at the University of Pretoria, the BCom(Informatics) programme is the only other internationally accredited programme at the university. We have a number of nationally accredited programmes including Engineering and Accounting degrees.

Despite the challenges mentioned in this paper, we have learnt from this experience and have now more rigorous procedures in place, especially for assessment and change control in the department. We were fortunate to have a very experienced and sympathetic evaluation team, who were willing to listen and learn from the differences between our education system and the US system.

There are efforts underway to internationalize the accreditation standards and criteria. Some of these efforts were mentioned in section II. We are encouraged by this and the next round will probably be much easier, because quality assurance is an ongoing process, continuously refining and improving IS programmes.

A final thought: this paper reflects on the obstacles experienced to get a non-USA IS program accredited by a US based accreditation body. We believe it is now time to stand one step back and critically reflect on the real and not only perceived benefit gained from being accredited. Also, we need to have a critical look at the new processes that have been introduced as a result of accreditation and its effect on the already sparse human resources, to judge the value of accreditation. We believe that such an honest reflection will help other non-US IS programs in their decisions towards accreditation.

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APPENDIX

EXPLANATION OF THE USE OF THE TERM “INFORMATICS” AT THE UNIVERSITY OF PRETORIA

(i) “Informatics” definition

A number of internationally renowned universities having Information Systems programs (i.e., Dalhousie University, Canada; Indiana University, USA; SUNY-Buffalo, USA; University of Oslo, Norway; University of Manchester, UK; University of Washington, USA; and University of Thessaloniki, Greece) use the term “Informatics” for their programs. Each of these universities has similar courses that would be classified as an “Information Systems program”.

The University of Washington states the following on their web page (<http://www.ischool.washington.edu/informatics/default.aspx>):

Future Careers in Information and Technology

Informatics students design, build, implement, and secure information systems that meet human, organizational, and societal needs. They combine skills from the program with their own unique personal and professional interests to foster innovation in information and technology in the private, public, and non-profit sectors. The emphasis of the major is on understanding the relationships among people, information, and technology.

A common definition of Informatics that can be found on Wikipedia

(<http://en.wikipedia.org/wiki/Informatics>) is as follows:

Informatics includes the science of information, the practice of information processing, and the engineering of information systems. Informatics studies the structure, algorithms, behavior, and interactions of natural and artificial systems that store, process, access and communicate information. It also develops its own conceptual and theoretical foundations and utilizes foundations developed in other fields. Since the advent of computers, individuals and organizations increasingly process information digitally. This has led to the study of informatics that has computational, cognitive and social aspects, including study of the social impact of information technologies.

Used as a compound, in conjunction with the name of a discipline, as in medical informatics, bioinformatics, etc., it denotes the specialization of informatics to the management and processing of data, information and knowledge in the named discipline, and the incorporation of informatic concepts and theories to enrich the other discipline; it has a similar relationship to library science.

(ii) “Informatics” usage at University of Pretoria

At the University of Pretoria we use the term Informatics as described in Wikipedia. The degree BCom(Informatics) has been registered with the South African Department of Education in 1988 and again in 2000 with the South African Qualifications Authority. We may not use another term on the student transcripts, but we do explain the term as can be seen from the following extracts (please note the use of the term Information Systems):

Extract from Departmental Brochure

Informatics studies the application and use of the computer and Information Systems within the organization. Our students’ strength lies in their broad background of the economic and management sciences, which implies that the world of business is nothing sinister to them. The use of information technology by organizations is growing exponentially and new, more complex

and challenging applications are explored and developed on a daily basis. It has the benefit that, in addition to the work of an informatics specialist being extremely interesting, there will only be a very small chance that the qualified informatician will ever be without work.

Section A: Approach, purpose and structure

A.1 Description of the Informatics discipline

Modern organizations cannot function without information and the technology with which they gather, store, compute and make available the information. The successful application of technology is, however, more than just writing computer programs. Computer programs are important, but an understanding of the business within which the organization functions and an understanding of the use of information and information technology to support the objectives of the organization, are far more important. This can clearly be seen in the description of the discipline:

Informatics is a multi-disciplinary subject, where information, Information Systems, and the integration thereof into the organization, are studied for the benefit of the entire system (individual, organization and community).

The informatician is therefore, in the first instance, a businessperson and, in the second instance, a technologist. As a systems analyst, the informatician will know the organization where he/she works, because Information Systems that are designed and implemented are very often the core of the business processes and activities. As an end user supporter, the informatician will act as technology consultant and facilitator, and in those capacities will play an important liaison role in the organization. As a manager of Information Systems, the informatician will be responsible for the strategic application of Information Systems and Information technology, for example to help the organization to exploit new markets using technology. In all of these different roles, the informatician needs to have exceptional people skills, apart from the technological skills, because he/she will frequently be confronted with moral and ethical issues surrounding the application of technology (for example the firing of workers after their jobs have been automated).

Informaticians can also, if that is where their interests lie, choose to exchange roles and concentrate on technology as such. To prepare students for this, the second and third year focus on network management and database design and administration. However, the main focus will still be people and the organization, rather than technology itself.

The study of Informatics can also prepare students to be skilled and knowledgeable users of information technology. This will be the case if a student typically does only part of the undergraduate Informatics syllabus, majoring in Accounting or Marketing or any other subject. Because information technology plays an important role in any organization, no accountant, marketer or any other occupation, can be without knowledge on the use of information technology in his/her specific subject.

Extract from University Year Book

(http://web.up.ac.za/sitefiles/File/yearbook_2008/Economic_and_ManageS_2008.pdf)

This programme is defined as the application of modern Information Systems in organisations, both private and public. The student will have a graduate-level knowledge of the analysis, design and implementation of Information Systems, databases, operating systems, networks and information management. In addition, the student will have the competence to develop a complete information system to support organizational functions. The holder of this qualification has the skills to advise organisations in empowering and enhancing the quality of work life of the individual workers through the application of information technology. The syllabus of this degree complies with the international accredited syllabus for Information Systems Programmes.

ABOUT THE AUTHORS

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