IT based Process Re–engineering for Academic Institutions in Sri Lanka

Devendra, L[1] and Sonnadara DUJ[2]

[1]Faculty of Information Technology, Aquinas University College, Sri Lanka

[2]Department of Physics, University of Colombo, Sri Lanka

ABSTRACT

This paper summarizes the preliminary findings of the current status of the academic institutions in Sri Lanka in reengineering its processes. The research is focused on the management and academic processes involved in the Sri Lankan tertiary level, higher education systems. There are many stages from the enrolment of students to the final completion, which may require careful evaluation and consideration. It was observed that many current management practices and processes therein may need drastic changes to meet requirements of all stakeholders.

The authors are of the view that unless the skills of learners meet up to international standards, they may not be able to take advantages of the current regional and global opportunities. It is noted that, Sri Lankan academic institutions are faced with many challenges to keep up with the global educational requirements.

1.0 INTRODUCTION

The Sri Lanka Qualification Framework (SLQF) of the University Grants Commission (UGC), (UGC, (2015)) describes the standards required for tertiary level education in Sri Lanka. Based on this framework and the current global needs, many management and academic processes may need to be reconsidered. It is prudent to reevaluate the processes based on the concepts of Business Process Reengineering (BPR), which means not only a change, but radical or dramatic change involving systematic elimination of unnecessary processes and also to reintroduce new processes to any organization (Michael Hammer, 1990). This dramatic change may require a scientific and pragmatic transformation of organizational structures and management systems, reallocate employee responsibilities, set new performance measurements, productivity based incentive systems, employee skills development, and also the efficient and effective use of information technology of managing organizational functions. Information Technology based, BPR can potentially impact every aspect of how an organization would perform. Change on this scale can cause results ranging from desirable success to a complete failure. On successful BPR process can result in vast reduction in cost on a long term, while increasing the organization's net worth.

The procedure followed in the study is to construct a framework for reengineering higher education institutes. In this work, the authors researched into few academic institutions in Sri Lanka, who have embarked on BPR at different levels and evaluated their successes and failures. There are many paths of research methods that may need to be adopted subsequent to this study. The research methodologies may vary from questionnaires, where the participants will be asked to provide data for the development and to observing and analyzing actual approaches, analyzing outputs and outcomes in line with the business objectives.

It is known that BPR has influences on many of the organizational activities. Hence it may also be necessary to conduct a cost benefit analysis of the recommended change of processes. Widespread reviews of the literature (Davenport, Thomas et el., 1990) revealed that significant gaps in research in this area of technology and innovation management. Therefore, the aim of this research is to report on a cross-sectional study based on the use of information technology to academic institutions. The study is to proactive implementation of BPR as part of the academic organization's strategy. The BPR practices were found to explain fair degree of the variance in organizational performance. On the other hand, there were no significant and positive relationships between the increased use of information technology and productivity. (Champy, J.1995)

Organizations strive to make their processes both effective and efficient. But for this to happen, the processes must be identified, defined, mapped,

owned and managed. An effective and efficient process is measured continuously, and updated as needed. Failure to do so reduces a process to a mere sequence of steps that may reduce efficiency over time. In order to address the various needs of academic institutions, it's critical to measure the adopted processes in many academic institutions as a part of fact finding.(Hammer, M. 1996)

The government of Sri Lanka has established the Ministry of Higher Education and Highways to regularize, expand and develop the institutions offering courses for tertiary level education. Ministry of Higher Education with the University Grants Commission continuously work with academia, trade unions and other key stakeholders to uplift higher education system in Sri Lanka to the desired level.

2.0 BACKGROUND

There are currently 15 state universities in Sri Lanka. The prominent ones are University of Colombo, University of Peradeniya, University of Ruhuna, University of Kelaniya, University of Sri Jayewardenepura and University of Moratuwa. In recent years, with changes to the University Act a few institutes have been given permission to grant their own degrees, the most prominent are; Sri Lanka Institute of Information Technology and the Sir John Kotelawela Defence University. In addition to the state owned Universities, the Ministry of Higher education has granted degree awarding status to few established institutions to award their own degrees. There are also privately owned institutes offering foreign degrees to Sri Lankan students.

Ministry of Higher Education is taking measures to strengthen its institutional framework and established Quality Assurance and Accreditation Council (QAAC) under the UGC. The QAAC is key objective is ensure excellence in higher education through quality assurance.

3.0 ANAYSIS

This research study was conducted to find the current statuses of the state and private owned universities and institutions. Questionnaires with predefined series of questions were used to collect information from the Universities.

Typical questions were:

- Category (Medical, Engineering, IT, Sciences, Management, Art, Others)
- Duration (Years)
- Total Credits (SLQF, 2015)
- Full time/ Part time
- Country of the University / Institute
- Typical age of the student (Years)
- Enrolment route (Mostly)
- Enrolment to Passed out Ratio%, (Typical)
- Out of class interaction with the Faculty
- Regarded as demanding/ Employability Employers are familiar with the course
- Has a broad focus, Vocationally/ professionally orientated, Academically prestigious
- Entrepreneurial and management skills included, Develops Research skills
- Problem-based learning
- Capability of problem solving (Individual), Collective team work
- Meets International academic standards
- English language skills (Spoken) at completion
- English language skills (Written) at completion
- Eligible for international jobs
- On Payment
- Use of video /presentation tools for teaching
- Use of Leaner Management System (LMS), Social networking / Chat rooms
- IP-based / email communications
- Availability of book Library
- Availability of e-Library, Foreign faculty lectures
- Audio/video conferencing
- Lab/ Practical sessions
- Internships, work placement provided
- Evaluation - assignments based
- Evaluation -Written Exams based,
- Online assessment
- Supervised research
- Students are currently employed (typical)

After completing the study, the following computations were made based on the following standard equations:

3.1 EQUATIONS

Mean: $\bar{x} = \frac{x_1 + x_2 + \ldots + x_n}{n}$

Standard Deviation: $SD = \sqrt{\frac{\sum(x-\bar{x})^2}{n}}$

3.2 TABLE

Description	Mean value	Standard deviation
Out of class interaction with the Faculty	3.00	0.01
Regarded as demanding/ employability	3.42	0.51
Employers are familiar with the course	2.68	0.67
Has a broad focus	3.63	0.50
Vocationally/ professionally orientated	3.00	0.10
Academically prestigious	3.32	0.75
Entrepreneurial & management skills included	3.37	0.50
Develops research skills	3.32	0.48
Problem-based learning	2.89	0.88
Capability of problem solving (Individual)	3.00	0.00
Collective team work	3.00	0.00
Meets international academic standards	3.32	0.48
English language skills (Spoken) at completion	3.11	0.74
English language skills (Written) at completion	2.53	0.51
Eligible for international jobs	3.32	0.48

4.0 DISCUSSION

After analyzing the responses of the quantitative data given in table 1; following interpretations were made: (1) Medical, Engineering and IT were regarded as demanding/ employability over Management, Science, and Arts degrees. (2) Less than 25% is vocationally/ professionally orientated. (3) Three year general degrees have broader focus to the four year special degrees. (4) Technical degrees are more professionally oriented than the general degrees but special degrees are academically prestigious and allow direct enlistment to higher studies.

(5) Entrepreneurial & management skills are low in most Degrees. (6) Research skills are developed in four year special, degrees, while three year degree lacks sufficient research skills. (7) Most degree programs are not on problem based learning. (8) Individual capability to a solve problem lacks in many degree program, however collective team work is available in most degree programs. (9) Some special degrees meet international academic standards, while most three year degrees need further improvements. (10) English language skills at completion are high in most engineering and special degrees.

5.0 CONCLUSIONS

Out of class interactions with the faculty are almost at an average level across all universities/institutions. As expected, demanding/ employability factor has a greater standard deviation, indicating some degree programs were rated high and some were rated low. Employers are familiar with the course also had greater standard deviation, indicating some degree programs not well known where as others are known. Although there is a high variability for programs having a broad focus, vocationally/ professionally orientation has less variability.

Most degree programs were rated above average on academically prestigious factor, however the deviation was also large. Surprisingly, most degree courses were rated high in entrepreneurial and management skills while developing research skills were above average and problem-based leanings were less than average. Capability of problem solving (individual) and collective team work were rated average. Meets with international academic standards were rated high with a high deviation indicating diversity. The English language skills (spoken) at completion were rated above average

however English language skills (written) at completion were rated below average. On the positive side, eligible for international jobs were rated high.

As discussed above, individual institutions must take steps to improve current status of some of the key factors that may be vital for the sustenance and growth of the Sri Lankan academic industry. The authors believe that it is time for academic institutions in Sri Lanka to consider key processes that need to be re-engineered supported by the use of information technology.

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