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HOW ENTREPRENEURSHIP INFLUENCES AN ENGINEERING FACULTY AT A NEWLY FORMED UNIVERSITY OF TECHNOLOGY

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Principal Topic

South Africa (SA) has an unemployment rate of 30-40% and especially in Engineering, new employment opportunities are critically needed. Existing higher education channels do not cater for the addition of Entrepreneurship to allow students this option. The Cape Peninsula University of Technology came into being in January 2005 through the merging of two former institutions, and the re-organising of the Engineering Faculty thus presented an opportunity to include a strategic new emphasis on entrepreneurship.

This research proposes that if a concerted effort is made to expose engineers to an environment conducive to entrepreneurship, then universities of technology could contribute to the SA economy by producing innovative engineers who can create wealth and jobs for themselves and other South Africans.

In a situation of proposed change such as this, it is encouraging to note that Moss-Kanter (1983) asserts that change is constant, and that only the degree of change is variable. Wheatley (1992) agrees that one needs to adopt radical steps to properly mobilise entrepreneurship. Bygrave and Hofer (1991) focus on the entrepreneur as the centre of entrepreneurship, and by implication in this context, not the engineer. Moss-Kanter (1983) adds that engineers need to 'leapfrog' their thinking and realise that by nature they are also capitalist, and thus inherently entrepreneurial to some degree. Shaver & Scott's work (1991) points to Mischel (1968) who views behaviour as a function of both person and environment. By extension, the engineer-entrepreneur can therefore be modelled as an integrated person-environment pair. All of these sources therefore confirm that a stronger sense of entrepreneurship is more than appropriate among the engineering fraternity.

Key Propositions

For an entrepreneurial intervention to be contemplated for the Faculty of Engineering, the research needs to begin with an assessment of the present milieu. This research thus sets out to investigate whether the environment within the engineering faculty at CPUT is conducive to entrepreneurship by asking the following questions:

- a. Is there a desire expressed by students for such an environment?
- b. Does the university have the capacity (and will) to service such needs?
- c. How would such a demand impact on the faculty output?

The objective of this study is thus to investigate, against the background of existing literature, how entrepreneurship can be made to have more of an impact on the engineering faculty at universities of technology.

This research hopes to find support for the view held by GEM regarding education as a catalyst to counteract the lack of effective entrepreneurial activity in South Africa.

Methodology

The engineering faculty is spread over two campuses, and the interview sample comprises the entry-level and exit-level engineering students at these campuses.

The available literature provides a good research structure on which to base the quantitative research methodology, and the research question is also relatively predictive. The questionnaire will therefore be designed in accordance with a Likert-type five-point scale. The first section will focus on the respondents' perception regarding ability and capability. The latter section will focus on whether the academic environment has contributed to the confidence of the respondents regarding their entrepreneurial ability to create wealth.

In order to provide further context and texture to the research, certain key academic staff within the faculty will be polled using semi-structured interviews, to investigate the university-industry relationship, as well as the perceptions of the staff within the faculty regarding entrepreneurship education.

The output of this research will result in recommendations for best-practice interventions for this particular situation, and aims at making a significant contribution towards a sustainable entrepreneurial-education model.

Implications

A confident and entrepreneurial engineer has the potential to create wealth, and to contribute strategically to the SA economy by starting new technology-based businesses. This benefits not only the university's image within the community it serves, but importantly, the graduates will have greater ownership of their futures through effective decision-making regarding their career choices in a limited job market. The engineering industry too will reap the advantage of being able to harness the products and services that the resulting new hi-tech ventures contribute. From the crucially important macro-perspective, the South African economy profits from this increased activity in an industry that typically produces 10 downstream jobs for every hi-tech job created.

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