THE UNIVERSITY OF THE WEST INDIES
ST. AUGUSTINE CAMPUS, TRINIDAD & TOBAGO, WEST INDIES

OFFICE OF THE CAMPUS PRINCIPAL

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Address by the Campus Principal and Pro Vice-Chancellor Professor Brian Copeland

CONFERENCING ON DIVERSIFYING THE ECONOMY THROUGH ENGINEERING

Engineering for the growth of the Manufacturing and the Non Petroleum sector

Salutations:

Dean, Faculty of Engineering
Colleagues from the Faculty of Engineering and the University of the West Indies
Students
Colleagues from the industrial, commercial and public sectors: NEDCO, MIC. CARIRI, TIDCO, NAMDEVCO AND ADB

I am truly honored to have been invited to give the feature address at this Conference on Diversifying the Economy through Engineering. I also stand here with a lot of pride of achievement because, as you all know, I spent virtually all of my two terms as Dean of this great Faculty of Engineering working with those of like mind in devising and implementing strategies for changing the focus of the Faculty and the University at large from the traditional purely academic to one that is more innovatively entrepreneurial. I want to thank the current Dean for continuing, and even accelerating, this initiative.

The argument, over all the years, was that a University that is situated in a developing region, as we are, and particularly one that relies heavily on Government funding, must be instrumental in fashioning and fueling the wealth generating engine of the nations it serves. Quite apart from the expertise provided in treating with national and regional issues through consultancies, pro bono work etc., this is the one major avenue through which the University can achieve its "impact mandate". There really is no other alternative.

It is in this regard that the Faculty of Engineering has published its Mission of

providing a *world quality education in Engineering, Geoinformatics and Geosciences and Research and Development programmes in support of Caribbean business, industry and infrastructure, with its graduates, staff and facilities being at the forefront, propelling growth, development and innovation in the Region*. The University now has a similarly worded Mission Statement

This Mission statement was drafted about 15 years ago – that's 15 years before the current fervent discussion on innovation-led entrepreneurship and economic diversification. Some would recall that it came after a sustained period of introspection, some of which was aggressive and most of which was quite boisterous. In retrospect, we have been preparing for this day for a long, long time.

Every year students in the Faculty of Engineering undergraduate programme engage in 150 final year projects, maybe more. When one considers similar activities in the Faculty of Science and Technology and the Faculty of Food and Agriculture this speaks to the potential of the University in driving a entrepreneurship based on technological innovation.

Significantly, whereas in the past students would see their projects as just a requirement for completing the degree, I have seen an increasing number looking beyond graduation, exploring the possibility of making their ideas a commercial reality. This speaks volumes to a small but significant change in the culture required to fuel the wealth generation engine.

However, even as the mindset is changing, much is as yet to be done in putting all the mechanisms in place to ensure that maximum efficiency is achieved in converting the ideas and concepts to viable products. Many of these mechanisms are outside of the technical domain, and I speak here of the absolutely crucial marketing, financial and business logistics considerations.

At this juncture I would really like to make a plea to my engineering colleagues to engage the expertise available in your sister faculties as you push for the establishment of a robust and sustainable mechanism for innovation-based entrepreneurship. Most people would have heard of the PHI of which I am co-inventor. The journey of that invention to commercial reality was stymied by activities that just about everyone is aware of but which I really do not care to

discuss at this forum. What is significant is the fact that the reason why there is still strong interest in the product, even after a forced 4 year hiatus, is largely because of the input of people like Leslie-Anne Noel of the DCFA, who used her ergonomic furniture design and artistic skills in conceptualizing the instrument chassis – widely acclaimed as a stupendous work of art, as well as Anushka Mahabir, Rehanna Mohammed and Allende Lee Lung all UWI students of marketing who did the marketing plan for the product that culminated in its appearance in Nicki Minaj's "Pound the Alarm" video that has now accumulated over 175 Million views.

I was asked to use the 15 or so minutes of my talk on the topic "The use of Engineering for the growth of the Manufacturing and the Non Petroleum sector." At first, I thought that the topic reflected an issue that was self-evident. However, there are so many ways in which Engineering, as a discipline, plays a vital role in creating or extracting wealth.

Current discussions focus a lot on the innovations at the highest level, i.e., the invention and successful marketing of absolutely new products or processes, things hitherto unseen or unheard of. Examples of this include the firsts such as computers, aircraft and the steelpan. These are what those in the IP world describe as "pillars". They support other inventions that enhance and improve upon the technology and features provided in the pillars. Thus, the Tesla motor car, a car that is powered by electricity, rests on the original invention of Ferdinand Verbiest who built the first steam-powered vehicle around 1672 as a toy for the Chinese Emperor. The concept embodied in the pillar was that of a self-powered vehicle.

Of note is the fact that each the automobile, as a product, grew through a process of continuous technical innovation, some of them being established as pillars in their own right. Thus, for example, Carl Benz who invented the first gas-driven production automobile in 1886, established a new pillar in the engine design. In doing so, Carl Benz would have directly or indirectly utilized Science and Engineering, knowledge and skills not available to the people of Verbiest's time, in crafting that first working gasoline engine.

Further down the innovative barometer, every new model of automobile embodies at least one new innovation, no matter how small, targeting improvements in

design and the all-important production process that result in a product that can be competitively priced while delivering value to the customer.

This is an ongoing process. It is no small wonder, therefore, that the automobile companies all have their small R&D units, often networked with research centers in universities.

This brings me to my last point. I speak now to colleagues from the industrial, commercial and public sectors.

It would seem that most are agreed that we should have started our diversification efforts a long time ago. I would like to put it to you that this cannot happen in a sustainable manner without the involvement of the resident expertise in Engineering and Science. Note that this does not exclude the involvement of expertise available elsewhere. In the more developed countries that we so often seek to emulate, industrial support for University research, development and innovation is a deeply embedded culture. Industries benefit from different levels of technology, whether internally generated or derived from university R&D, that would lead to the innovations required to make their products more competitive. The people involved in that process of continuous advancement develop by virtue of that involvement, **as do the societies in which they live**.

Engaging our local and regional capability in meeting the technological challenges should be a priority for all businesses operating in the nation and the region. It solves your problem using readily available expertise, some of which would admittedly be untried, preserves precious foreign dollars and, most significantly, leads to the further development of the same local and regional expertise. The approach is not new, but has been successfully utilized before. However, most significantly, it is an approach that sets up a self-sustaining cycle of development and deployment that, in turn, pushes the economy forward.

Colleagues, we live in an opportune time in which the UWI, at long last, is committed to the concept of innovation-based entrepreneurship, leveraging its expertise in creating new products and processes in enhancing national and regional industry and commerce. Indeed, it is one of the mandates given to me as Principal Designate by no lesser person than the Vice Chancellor. I want to use the

opportunity at this forum for you to partner with us in building new pillars for sustainable economic growth.

I thank you