Bringing the Ivory Tower down: Reorienting Higher Education to address Students and Industry Needs in Africa

Issue at-hand

African universities find it difficult to depart from the inherited and purely academic missions of their European counterparts after which they were modeled. But the latter have changed over the years with the advent of the Bologna Process in 1999 as they have moved from focusing essentially on the traditional missions of teaching and research to include a socio-economic development agenda for the benefits of governments, industry and students. European universities now engage with governments and the private sector to promote innovation through research and development (R&D) for industrial development. Degree programs have become more "vocationalized" as they equip students with skills and competencies needed by the labor market and for entrepreneurship; pretty much following the US university model where government-university-industry partnerships have been the norm for many decades as a number of universities were originally created to support specific economic sectors. The land-grant universities as they are called in the US are provided with land that they could sell to raise money and their mission was initially to develop through teaching and training human resources for key sectors such as agriculture, science, military and engineering during the industrial revolution. This is in stark contrast to the European universities which historically were established with liberal arts curriculums.

With the advent of Open, Distance and eLearning (ODeL), European and US universities are providing access to higher education to millions of students both on and off campus. Many industries are educating and upgrading the knowledge and skills of their workers through distance eLearning and universities are carrying out research and development (R&D) for them. More and more universities are setting incubators for new industries and entrepreneurs and government are providing incentives and conducive policy environment to support this trend.

African universities, however, lag behind. There have been slow and inconclusive attempts to reform higher education along the Bologna process such as in Francophone Africa with the donor-driven *Licence, Master et Doctorat* (LMD) and the EU-funded Tuning Africa initiatives. Moreover, the move towards a genuine and effective partnership between university, industry and government is still in its infancy as the three actors are yet to grasp the benefits of such an arrangement. A few universities have also established business incubators but they are disconnected from reality as there are very few industries out there to be served and those that exist do not fully understand the benefits to be derived from such partnerships.

Policy Recommendation: adopting the concept of the Triple Helix of university-industry-government relationships

What's the Triple Helix? The concept of the Triple Helix of university-industry-government relationships was developed in the 1990s by Etzkowitz (1993) and Etzkowitz and Leydesdorff (1995), encompassing elements of precursor works by Lowe (1982) and Sábato and Mackenzi (1982). It advocates for a shift from the dominating dyadic relationship between industry and government of the industrial revolution era to a growing triadic relationship between university-industry-government in the current Knowledge Society.

The Triple Helix is underpinned by the thesis that *the potential for innovation and economic development in a Knowledge Society lies in a more prominent role for the university and in the hybridization of elements from university, industry and government to generate new institutional and social formats for the production, transfer and application of knowledge (Rangaa and Etzkowitz, 2013)*.

One of the tenets of concept of the Triple Helix is the belief that universities can play an enhanced role in innovation in increasingly knowledge-based societies. This can be achieved by combining their research and teaching capabilities in new formats to become a source of new firm formation, especially in advanced areas of science and technology. Furthermore, it posits that the knowledge created and co-created by research, industry, education, entrepreneurs and the wider community needs to be absorbed back into the university's environment. There needs to be mechanisms in place by which the university can absorb information and experience from the wider ecosystem. Equally, the institution should have clear mechanisms for exploiting entrepreneurial opportunities with commercial and industrial partners.

Recommendations

The Entrepreneurial University is a central concept to the Triple Helix. It takes a pro-active stance in putting knowledge to use and in creating new knowledge. It operates according to an interactive rather than a linear model of innovation. As firms raise their technological level, they engage in higher levels of training and knowledge sharing. In addition to its traditional

regulatory role in setting the rules of the game, government acts as a public entrepreneur and venture capitalist. As universities develop links, they can combine discrete pieces of intellectual property and jointly exploit them. Innovation can then expand from an internal process within and even among firms to an activity that involves institutions not traditionally thought of as having a direct role in innovation such as universities.

Furthermore, entrepreneurial universities should extend their capabilities of educating individuals to educating organizations, through entrepreneurship and incubation programs and new training modules at venues such as inter-disciplinary centers, science parks, academic spin-offs, incubators and venture capital firms. Entrepreneurial universities enhance capacity to generate technology that has changed their position, from a traditional source of human resources and knowledge to a new source of technology generation and transfer.

In universities committed to entrepreneurial learning, skills are not just delivered through traditional lectures; many other approaches, such as ODeL, are taken to produce the desired learning outcomes. The key is to enhance the students' ability to think and respond entrepreneurially. There are numerous examples including, living labs, cross disciplinary learning etc. In addition, students may also start up and run their own companies, have competitions and awards, be ambassadors for entrepreneurship and run clubs.

It is also important to deliver entrepreneurship education with real entrepreneurs whenever possible and use a variety of teaching methods including; case studies, games and simulation, real experience reports by start-ups and studies of business failure.

Mentoring is an effective learning and business support tool that can be used to reinforce the entrepreneurial skills that students have acquired. Matching student and graduate entrepreneurs with experienced entrepreneurs will increase the business's chances of success as well as that of other support services. Mentors could be educators with entrepreneurship experience or dedicated business coaches. Entrepreneurial Universities also make use of their alumni as mentors.

Facilitating access to private finance, for both student and graduate entrepreneurs, is essential to help universities build links with industry and to develop an entrepreneurial eco-system. Universities should organize networking events for nascent entrepreneurs where they can meet investors as well as dedicated financing events that provide budding entrepreneurs with the opportunity to pitch their ideas to investors.

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For more information, please visit AVU's Website: http://www.avu.org/avuweb/en/