



Transforming Nigerian universities into entrepreneurial universities: formulation of a roadmap

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ABSTRACT

Universities have always had three key roles to play: teaching, research and community service. However in recent times, they have been expected to excel in a fourth and pivotal new role, that of developers of the economy. In order to achieve this new and important role, they have had to become entrepreneurial in nature and become what has been termed “entrepreneurial universities”. This paper had as its objective the development of a roadmap for Nigerian universities to follow if they truly wanted to excel as developers of the Nigerian economy by becoming entrepreneurial universities. The roadmap covered six critical factors namely government policy, top-management buy-in, availability of finance, availability of infrastructure, quality of staff and entrepreneurship education which are considered vital for any university with aspirations of becoming entrepreneurial in nature. A critical analysis of these six factors as to their prevalence in the Nigerian context revealed that in all six critical factors, Nigerian universities had a lot of work to do to attain the minimum standard required by each of the six critical factors. Most importantly, the analysis revealed that the biggest problem among the six factors lay in the issue of sincere leadership. The authors were of the opinion that until and unless the top management of Nigerian universities put the betterment of these universities as the most important priority rather than their personal self-enrichment, none of the other five factors would be attainable, and the dream of Nigerian universities contributing positively to the development of the economy by become more entrepreneurial in nature would remain forever unfulfilled.

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Introduction

Universities have always been viewed as the keepers of knowledge in whose hallowed halls, minds are molded, and research is embarked upon to continually develop new knowledge. Generally, universities are said to have three key roles: teaching, research and community service. However, in recent times, universities are expected to excel in a new and pivotal fourth role: the role of developers of the economy (D’Este and Perkman 2010, Gajon 2011, Peterka 2011). It is in an attempt to fulfill this new role that the concepts of “academic entrepreneurship” and the “entrepreneurial university” have evolved in recent years.

“Academic entrepreneurship is defined as the involvement of academic scientists and organizations in different forms of commercially relevant activities, for example, industry-university collaborations, university-based venture funds, university-based incubator firms, startups founded by academics, dual appointments of faculty members in firms and academic departments” (Lacetera, 2009 as quoted by Nel and Steyn 2011, p1). This concept of academic entrepreneurship has gained popularity as a result of the change in the global economy. In today’s global economy, knowledge has become the critical success factor for economic development. It is because of this new knowledge economy that the relationship between academia and business has become closer than ever. Academic entrepreneurship is no longer a luxury but a necessity (Atkinson and Pelfrey, 2010, Zheng, 2010). A university which develops a habit of creating value in the market place becomes an “entrepreneurial university” (Yusof *et. al.*, 2010, p 31).

The reality is that in Nigerian universities at the moment, research is undertaken mainly as a means of getting up the academic ladder. The “publish or perish” mentality is paramount, and most academic research has little to do with solving the many problems faced by the Nigerian people and the Nigerian economy. It is thus fair to say that in Nigerian universities, academic entrepreneurship is almost non-existent. The purpose of this paper is to change this current state by formulating a comprehensive roadmap that Nigerian universities can follow so as to become “entrepreneurial universities” who will play a pivotal role in shaping Nigerian’s economic future for the better.

The rest of the paper proceeds as follows: First a literature review is presented covering three areas, 1) The various definitions of academic entrepreneurship, 2) The suggested benefits of academic entrepreneurship, and 3) The key factors necessary for a traditional university to transform into an entrepreneurial university.

Literature review

What is academic Entrepreneurship

In its most basic form entrepreneurship is the process of changing ideas into commercial opportunities and creating value (Leach & Melicher, 2006). Public research organizations, and particularly universities, are becoming increasingly entrepreneurial, embracing a mandate for the realization of commercial value from research, and searching for new organizational arrangements that bring a closer alignment of scientific research and innovation (Rothaermel *et al.*, 2007 p.17). Thus, these days terminologies like patenting, licensing and the

creation of spin-off companies are very common among academic researchers.

It is in the light of the above that we define academic entrepreneurship as the process whereby timely ideas which meet opportunities in the society are developed, commercialized and managed by academics. In other words not only is the idea developed within the walls of a university the risk of ensuring its survival to a certain stage is borne by the faculties.

What are the benefits of academic entrepreneurship

In the branch of economics known as growth accounting we are told that to achieve faster economic growth, we must increase the growth rate of physical capital, the pace of technological advance, or the growth rate in human capital. Among the main suggestions for achieving these objectives are;

- Stimulating research and development
- Targeting high-technology industries, among others (M Parking 2011 p.532)

These two suggestions mentioned above represent the point where entrepreneurship, the university and the economy meet. We shall now try to explore in details how Academic Entrepreneurship benefits academics, the local community and the wider economy.

To the academic; the social capital effect is an important benefit of AE to the academic. The social capital represents the networking web of acquaintances the academic develops both within the academic and business circles. And Social capital is often mentioned as an important factor that influences the development of companies (Erdos and Varga 2010, p 4). This is a two-level benefit where the academic benefits through Academic Entrepreneurship by building social capital, and the Social capital in turn increases the likelihood of spin-off formation. Another form benefit to the academic entrepreneur comes in form of supplementary income which commercializing new ideas bring. In the view of Erdos and Varga (2010 p.1) the perception of the academic of himself is crucial in breeding Academic Entrepreneurship. They gave the example of the United States and continental Europe; in the United States researchers see themselves as employees of the University which promotes innovation and independence through spin offs, while in continental Europe researchers are viewed as state employees or civil servants with no immediate motivation to innovate and compete for private funding and gains. Thus the spin offs from academics in the US tend to provide motivations to them in form of returns on their commercialized ideas.

The local community; there are three university entrepreneurship activities which we argue directly benefits the local community, these are; knowledge transfer (e.g. consulting or contract research); technology transfer (such as patent/licensing) and products and services transfer (e.g. spin offs). We can argue that all these activities positively affect the host community of the entrepreneurial university through information dissemination, improved economic activities and employment generation respectively.

The more that a new firm is based on new knowledge and technology, the greater the impact it has on economic development (Wong et al. 2005 p.342). There is no doubt that academic entrepreneurship benefits the economy as a whole. This is evident by the job creation propensity of the new spin-offs from the university. New firms especially those from university spin offs can also improve market efficiency through competition as they either crowd out inefficient incumbent firms

or spur them to improve innovativeness and productivity (Krabel e'tal 2009 p.5).

The entrepreneurial university

Gajon (2011. p.3) posits that although there is no universally-agreed upon definition of the entrepreneurial university, its most important functions have been identified as follows:

1. Development of an entrepreneurial culture both within and outside the university,
2. Contribution to local economy through the support of new venture creation, and
3. Commercialization of university research through the formation of companies and the exploitation of patents.

Six critical success factors have been identified as absolutely necessary for a traditional university to transform itself into an entrepreneurial university. A brief discussion of these factors is provided below:

Government Policy: Government policies are mentioned as critical for the successful transformation of a regular university into an entrepreneurial one. According to D'Este and Perkman (2010, p.4), in order strengthen the entrepreneurial university, "policy makers must provide monetary incentives to academics to facilitate their commercial involvement".

The 1980 Bayh-Dole Act which was passed in 1980 is cited by some authors as an example of such a policy (Atkinson and Pelfrey 2010, D'este and Perkman 2010). This act allowed universities to keep the patent rights to inventions that were a result of federally funded research at their institutions.

Top Management buy-in: The absolute commitment of a university's top management is critical for its successful transformation into an entrepreneurial university. Such top management must display inspirational leadership qualities, and be able to convince the staff about the benefits of engaging whole-heartedly in the academic entrepreneurship process (Guerrero and Urbano 2010, Sabc 2011). Yusof *et.al* (2010, p31) agree, when they state that to become an entrepreneurial university, effective leadership is critical "at all levels of the academic organization" in order for entrepreneurial activities to be "facilitated, nurtured, and supported". These inspirational leaders of the fledgling entrepreneurial university must get every employee in every department to share in their vision for success to be attained (Peterka 2011).

Availability of Finance: According to Gajon (2011), the amount of funding available to a university is absolutely critical for its aspiration to become an entrepreneurial university. New-venture creation, which is one of the functions of an entrepreneurial university, requires capital. It is thus very important that any university with ambitions of becoming entrepreneurial in nature, seek out alternative sources of finance rather than rely on the usual sources such as government and student fees (Guerrero and Urbano, 2010, Peterka, 2011, Sabc 2011). Another advantage of becoming less dependent on government as a source of finance is that the university has more control in choosing which entrepreneurial activities to engage in. This reduces the possibility of the university "compromising its mission and the quality of its services" (Peterka 2011, p.13).

The ideal for any university is to be completely independent of government in terms of funding; that is to say, to be financially self-sufficient. The "financially self-sufficient model" developed by the NGO "Teach a Man to fish" provides a straightforward and effective formula for universities to achieve this financial independence (Teach a man to fish, 2011). Under the model, a university becomes self-sufficient by establishing a

number of well run small-scale, on-campus businesses which sell products and services to the local markets and beyond. These businesses also offer the students the opportunity to learn technical and business skills in a practical way rather than mere theory. The proof of the success of this model is established utilizing the case of the San Francisco Agricultural High School in Paraguay. "In 2007, five years after adopting the model, the school's businesses generated \$300,000 in income, enough to cover all its operating costs, including depreciation. In addition, within four months of graduation, 100% of each graduating class finds good jobs, create their own small enterprises or continue their studies at university" (Teach a man to fish, 2011).

Availability of Infrastructure: This refers to "project-oriented research centers, which work on the transfer of university's knowledge and technology to the business community (applied research), develop and take care of university's intellectual property, organize and implement (in cooperation with other university departments) continuous education programs (Lifelong Learning), help with university fundraising activities, develop contacts with the alumni, help with the development of their students' careers, and organize and participate in all the activities through which university establishes contacts with its environment" (Peterka 2011, p.14). The most commonly mentioned of this critical infrastructure is the technology and research transfer office (TRTO).

The TRTO is an office which serves as a liaison between faculty and external community. The key role of the TRTO is to find out problems faced by local businesses as well as government. The TRTO discusses with these key stakeholders the possibilities of collaborations whereby faculty come up with solutions to problems and sells it to these stakeholders. The TRTO also discusses with the external stakeholders the possibility of research grants to aid faculty in researching solutions to their stated problems. It also serves as a clearing house for the commercialization of faculty research, and helps faculty come up with viable business plans to market their research. Finally the TRTO also helps in identifying potential businesses that can be embarked upon by faculty and students, especially those that utilize available resources (Yusof *et.al* 2010, D'este *et.al* 2010, Osiri and Clark 2010, Nel 2011, Wagner 2011).

Quality of Staff: "A university with sufficient human resources including academics, specialized experts, and students, will likely better conduct entrepreneurial activities than will a university with a reduced human team" (Gajon 2011, p16). It is thus critical that any university with aspirations of becoming entrepreneurial in nature invest heavily in "persons with expert knowledge and talent, as well as entrepreneurship experience as business owners" (Gajon 2011, p16). Entrepreneurship, whilst rewarding if successful, requires a lot of hard work. The academic staff has to invest significant energy and resources to successfully nurture a culture of new venture creation which is central to an entrepreneurial university's activities (Ilea *et.al* 2011).

Entrepreneurship Education: The economic reality across the globe is that over 90% of all businesses are small businesses (those with fewer than 100 employees) (Ilea *et.al* 2011). However, "business courses offered by the formal educational systems seem to ignore [this] reality and produce employees for the large enterprises, the public sector and the multinationals" (Ilea *et.al* 2011, p.202). Entrepreneurship education must thus be infused into the curriculum so as to produce graduates that have

the requisite skills to actively participate in new venture creation, and the consequent development of their national economies.

The next section of this paper utilizes these six critical success factors as a basis for the formulation of an entrepreneurial roadmap which Nigerian Universities can follow if they have any realistic ambitions of becoming entrepreneurial universities.

A road map for transforming Nigerian universities into entrepreneurial universities

As mentioned in the previous section, six critical success factors have been identified in the literature if a university wants to transform itself into an entrepreneurial university. What we intend to do in this section is to develop an entrepreneurial road map for Nigerian university using these six factors as a foundation. The discussion will follow the following format: For each factor, the current situation in Nigeria vis-à-vis that factor is presented and then recommendations on the way forward as regards the attainment of that factor is then presented. These recommendations combined together form the entrepreneurial roadmap.

Government Policy

In recent times, the Nigerian government has come to the realization that to tackle the massive problem of poverty in Nigeria, entrepreneurship is the key. Young Nigerians have to be trained to become self-reliant by starting their own businesses rather than depending on government jobs or private company jobs for employment after graduation. To achieve this goal, the Nigerian government mandated all universities to introduce entrepreneurship education as a core requirement for all students of the university, regardless of field of study.

Another positive policy developed by the Nigerian government is in the area of staff training. The "Tertiary Education Trust Fund (TET)" was established to sponsor academics in all fields of study to pursue postgraduate degrees. Recently in order to increase the level of expertise in entrepreneurship, the government has mandated that academic staff seeking postgraduate degrees in entrepreneurship be preferred over those seeking postgraduate degrees in other fields. In addition funds has also made available to selected universities for the establishment of entrepreneurship centers.

As can be seen from the above points, the Nigerian government has made some strides in setting up the platform that would encourage Nigerian universities to transform themselves into entrepreneurial universities. However, there are two key areas where the government can improve upon. The first area concerns the funding of academic research; the relationship between the government and the universities should be a collaborative one in that the government should engage and fund the academicians to undertake research on finding solutions to critical problems faced by the government. By establishing such a collaborative relationship, the government would, without question, encourage academicians in Nigerian universities to engage in research that actually impacts on the lives of the Nigerian populace and leads to the positive development of the Nigerian economy.

The second area where the Nigerian government can improve in its quest to improve academic entrepreneurship is by improving the protection of intellectual property and patent rights. By establishing a policy similar to the 1980 Bayh-Dole Act, the Nigerian government can allow universities to keep the patent rights to inventions that were a result of government-

funded research at their institutions. In addition, the government must enforce the universities' rights to exclusively enjoy those patent rights by punishing any violation of such patents by other institutions. The positive consequence of such a policy is that Nigerian universities would have a potentially-massive financial incentive to seriously engage in academic entrepreneurship

Top Management buy-in

Unfortunately, it is in regard of this factor that any Nigerian university with aspirations of becoming an entrepreneurial university will face the greatest challenge. This is because the vast majority of so-called leaders in Nigeria at any level, including the top management of most Nigerian universities, do not have the interests of their institution at heart. These leaders see their positions as an opportunity for self-enrichment at the expense of the welfare of those they are supposed to be leading.

As mentioned earlier in the literature review, for any university to transform into an entrepreneurial one, the commitment of top management is absolutely vital. These leaders must have the university's long-term development at heart. They must have a clear vision of how to harness the entrepreneurial capabilities of their staff and how to take advantage of the opportunities available in the environment. In addition, they must be able to share such a vision with the staff they are leading. The reality is at the moment, the leadership of the vast majority of Nigerian universities does not possess the above-mentioned qualities. Until and unless university leaders emerge with a sincere desire to truly improve the quality of their institutions, the possibility of Nigerian universities transforming into entrepreneurial universities remains very, very unlikely if not impossible.

Besides the critical issue of good leadership, another problem facing the Nigerian universities is the issue of bureaucracy. The top management of these universities possesses an iron grip over every decision. All ideas and suggestions must be approved by them and the process to get such approval is very cumbersome. This cumbersome process actually discourages many of the staff from putting forward creative and innovative ideas which would go a long way in making these universities more entrepreneurial.

Availability of Finance

For most public Nigerian universities, the primary source of funding comes from the state or federal government, depending on whether the university is a state or federal university. A few universities attempt to generate additional income through school-owned enterprises, such as printing presses, bakeries and the production of table water. However, most of these businesses are not run efficiently and competitively, and the universities actually end up keeping the businesses afloat by pumping in some of the funds they receive from the government. These businesses are more like pet projects rather than serious income-generating ventures.

As mentioned earlier, regarding finance, the ultimate goal of the prospective entrepreneurial university should be financial independence. To achieve this, we highly recommend that Nigerian universities adopt the financially self-sufficient model discussed earlier. Opportunities abound in the Nigerian economy, and the universities are in the best position to take advantage of these opportunities given that they possess very talented staff in various disciplines. By establishing school businesses that provide quality solutions to the many problems facing the Nigerian populace, these universities can generate a lot of income and eventually achieve the valued goal of financial

independence. In effect for Nigerian universities to become entrepreneurial in nature, they have to actually start being entrepreneurial; they have to learn by doing.

Availability of Infrastructure

A few Nigerian Universities have established entrepreneurship centers which are to serve the role of technology transfer offices (TRTOs). We recommend that other Nigerian universities follow suit. In addition, we recommend that these entrepreneurship centers be staffed by professional and high quality people with experience in actual business administration. The universities' leadership must resist the usual temptation to engage in nepotism by hiring close family, relatives and friends into these centers who do not possess the necessary expertise to successfully run these centers.

Quality of Staff

As alluded to in the previous section, there tends to be a serious case of nepotism when it comes to who gets hired in most Nigerian universities. The critical criterion for gaining employment is usually "who you know" rather than "what you know". This attitude of employment has a direct bearing on the quality of staff currently available in most Nigerian universities; not only do most of these staff lack the necessary knowledge and experience to successfully carry out their duties, they also develop a nonchalant attitude as they feel they are untouchable since their "brother" or "uncle" who is part of top management is the one who got them the job.

The bitter reality is that the situation described above is a massive stumbling block to any aspirations any Nigerian university has of become a truly productive and innovative entrepreneurial university. As the saying goes, "to be the best, you have to hire the best"; until Nigerian universities develop this attitude, no real progress will be achieved.

Hiring the best staff is not enough; Continuous training and retraining is vital for any Nigerian university hoping to be entrepreneurial in the truest sense of the word. This continuous improvement of the knowledge base of staff is important to keep abreast of the latest trends in the world. The business world is ever changing and is very competitive, and only the most knowledgeable, creative and innovative can remain on top.

Entrepreneurship Education

As mentioned in the previous discussion dealing with government policy, the Nigerian government has mandated all universities to introduce entrepreneurship education and training for all students, with the ultimate of goal of making them self-reliant. In implementing this mandate, most universities have introduced a general entrepreneurship course which all students must pass. The major problem with this approach is that such a course is usually general, contains only introductory entrepreneurial concepts and is purely theoretical in nature. We feel this is not enough to truly provide students with the necessary knowledge and experience to be self-reliant through establishing of their own businesses before or after graduation.

We recommend that all universities should establish a full-fledged department of entrepreneurship which will combine detailed theoretical entrepreneurship knowledge and practical application of such knowledge through the establishment of on-campus businesses. We also recommend that other departments in the university should become more entrepreneurial in their approach by commercializing their research, products and services. Finally, there should be active collaboration between the entrepreneurship department and all other departments of the university.

Summary and conclusion

As mentioned in the introduction, universities have always had three key roles to play: teaching, research and community service. However in recent times they have been expected to excel in a fourth and pivotal new role, that of developers of the economy. In order to achieve this new and important role, they have had to become entrepreneurial in nature and become what has been termed “entrepreneurial universities”.

This paper had as its objective the development of a roadmap for Nigerian universities to follow if they truly wanted to excel as developers of the Nigerian economy by becoming entrepreneurial universities. The roadmap covered six critical factors namely government policy, top-management buy-in, availability of finance, availability of infrastructure, quality of staff and entrepreneurship education which are considered vital for any university with aspirations of becoming entrepreneurial in nature.

A critical analysis of these six factors as to their prevalence in the Nigerian context revealed that in all six critical factors, Nigerian universities had a lot of work to do to attain the minimum standard required by each of the six critical factors. Most importantly, the analysis revealed that the biggest problem among the six factors lay in the issue of sincere leadership. The authors were of the opinion that until and unless the top management of Nigerian universities put the betterment of these universities as the most important priority rather than their personal self-enrichment, none of the other five factors would be attainable, and the dream of Nigerian universities contributing positively to the development of the economy by become more entrepreneurial in nature would remain forever unfulfilled.

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