

# **Commodification of Knowledge in Developing Economy: The Case of the University of Botswana**

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## **Abstract**

Many universities in developing economies were established as public universities to provide training for manpower requirements of the developing state. In the recent past there has been a shift in emphasis of preferred economic drivers towards practices common to knowledge based economies in developing countries. This move has compelled Higher Education (HE) institutions to pursue programmes which are aligned to the notion of commodification of knowledge. Although within this emerging environment public funded universities are not expected to be profit making, they have to function or operate in a manner that demonstrates entrepreneurship by engaging in third stream income generation without compromising their social responsibility even as they remain entrepreneurial to raise third stream revenue. To what extent is this possible and is it necessary? This paper identifies and discusses the parameters that would influence and direct state funded university operations towards attaining the phenomenon of commodification of knowledge. It uses the University of Botswana's context to guide discussion

## **Introduction**

The growing interest in the commercial viability of knowledge amongst academic knowledge producers is of particular significance to universities because they routinely engage in the enterprising and production of knowledge in the form of research and graduate output. Universities also seem to be strengthening their position in protecting their knowledge outputs through patenting and copyrighting. These developments are inevitably making Higher Education (HE) very important especially for Knowledge Based Economies (KBE). Because research and development is costly in the African context universities are better equipped and endowed with befitting human resource to generate knowledge for the benefit of the economy. However since universities are mandated repository and creators of knowledge, it is expected that they fully participate in the generation of knowledge. The problem however is that the resources afforded state funded universities are not sufficient to make universities in developing economies to compete globally in the provision of HE.

Commodification of knowledge seems to have provided an avenue for state funded universities to generate third stream income. In exploring this phenomenon this discussion will seek to understand its meaning as well as the challenges and tensions that come with it. It will therefore use the UB as a test case for discussing the issues of commodification of knowledge.

## **Background**

The University of Botswana (UB) enjoys strong funding support from Botswana government and only generates 23% of its total revenue, which is mainly from student tuition fees paid through government sponsorships of students. UB has through its strategic plan aligned its operations with the country's long term plan (Vision 2016) in order to fulfil its mandate as well as accommodate the needs of its major stake holder. In a small state such as Botswana university education tends to be an integral part of HE and a source of an educated work force. UB having served the nation's manpower development plans is faced with new demands of an industry diversifying economy. The National Human Resource Development (NHRD) strategy underway is yet to show the areas of need in skills and knowledge requirements of the economy. The emergence of a new generation of entrepreneurially driven private universities in Botswana has

contributed towards the changing landscape of university education provision. These have offered degrees that are more appealing to school leavers and some have turned down offers from the UB to take up training with them. The UB has to therefore compete for candidates. The up coming new Botswana International University of Science and Technology (BIUST) is a Private Public Partnership which competes with UB for public funding from the Botswana government. Botswana's university education is state funded and inevitably commodification of knowledge becomes a state business by default.

Botswana subscribes to knowledge for development and through its long term plan (Vision 2016) has pledged to build an educated and informed nation by year 2016. Botswana has been spending on average up to 8.5% of its GDP towards education. A significant share of this expenditure has been directed to the university education in the form of tuition fees for students, university development projects and recurrent expenditure of the only public university UB. Other key institutions such as colleges of education, nursing institutions and College of agriculture are affiliated to the UB thereby making UB play a leadership role in the provision of HE. The graduates and research continue to be key outputs of the UB but lately the institution has faced challenges because some of its graduates have not been able to secure employment in the government and industry. This has forced UB to reflect on its operation and push for transformation. UB's research output has been very low because this activity has among other issues received only 2% of the institutional budget.

In responding to the challenges in the HE sector government motivated the introduction of several tertiary education policy reforms through the Tertiary Education Council (TEC). The intervention by TEC seeks to align tertiary education outputs with the aspirations of the nation. The UB being a national state funded HE institution has been a major player in the creation of intellectual and human capacity. The UB's vision to be a centre of excellence for the region, Africa and the world declares its interest and commitment to engage in global knowledge activities; however its mission statement of advancing the intellectual and human resource capacity of the nation and the international community places it as a leading university in human capacity building and intellectual property matters. It is for this reason that UB is considered a key player on the matter of commodification of knowledge.

### **Challenges, Issues and Tensions around Commodification of Knowledge**

Sawyer (2002) acknowledges the notion of "commodification" of knowledge as having transformed the environment for knowledge institutions such as universities and other higher education organizations. Commodification of knowledge may be understood to mean transforming knowledge into a commodity ready for use or consumption. Commodification of knowledge would generally lead to private knowledge products such as text books, electronic journals, teaching and learning platforms such as WebCt, blackboard and research analysis software packages such as Statistical Package for Social Sciences (SPSS) all of which require an annual licence fee to be paid by the user. It should be noted however that there exists open source packages that can be accessed for no fee these come as utility products. The perception that knowledge as a commodity must take on the properties of a private commodity requires transformation of knowledge into explicit, standardized and codified entity. Let us consider commodification of knowledge to comprise of processes, regulatory mechanisms and systems

that ensure that quality, standards and exchange value is achieved by HE. Naidoo (2003: p250) writes:

The perception of higher education as an industry for enhancing national competitiveness and as a lucrative service that can be sold in the global marketplace has begun to eclipse the social and cultural objectives of higher education generally encompassed in the conception of higher education as a 'public good'.

As a social commodity knowledge has served the social value and its utility has been preferred. Lately emphasis is placed on knowledge for exchange value rather than on its utility value. To that extent HE faces composite demand and is therefore exchanged in international markets. This presents a challenge to state funded universities such as UB which were established with social welfare roles to fulfil.

The advent of knowledge based economy has led to a shift of the traditional functions and roles of the university to what may be referred to as an enterprising university. For example UB has drawn strategic plans, vision and mission statements, designed a brand, identified university of Botswana colours and introduced a commercialisation section in its office of research and development.

African universities have been forced by the developments in HE to redefine their roles. Bollag (2003) writes that

No country can expect to successfully integrate in, and benefit from, this 21st century economy without a well-educated workforce. The stakes are particularly high for Sub-Saharan Africa (SSA), given the low level of education attainment of most countries' labour force, and the urgent need for sustained economic growth at a high level in order to reduce poverty.

The link between HE and the economic and social development of a nation is particularly important for developing states because it seems like a gateway towards moving away from resource based economic dependence. Universities as providers of HE are at the forefront of such state aspirations.

The aspiration by Botswana to become a knowledge based economy has opened doors to global competition in HE. This step will require some reforms to be undertaken in HE to align it with world standards. Naidoo R (2003: p 249) acknowledges that "a major force underlying reform pressures in the present period is therefore the attempt by governments to harness public universities in a relatively unmediated manner to economic productivity and to reposition higher education as a global commodity."

The emerging notion of knowledge based economy is at the centre of countries aspiring to be successful economies. The challenge faced by some developing economies who demand for their HE institutions to generate knowledge and human capital for the local economy is the risk inherent in higher education as a global commodity.

While it should be noted that the vision and mission of the UB expresses an interest to engage in global knowledge generation there is also a sense in which UB should maintain its allegiance to the government and the people it was meant to serve. There is also the issue of funding support that suggests that pursuing intellectual interests should be done on calculated risk and should

generate pay offs, thus being risk averse. Inevitably in the business of knowledge generation some outcomes do not yield pay offs but rather generate strategic assets. Therefore financing knowledge products requires constant advancement of what is already known which requires funding and taking risks.

Because HE is a global commodity African universities compete with reputable international universities based in developed countries whose resource base is better structured and organised than those of developing countries. These universities are used as benchmarks and they set standards. However the goals and objectives of these universities may not necessarily be close to those of developing economies. There is therefore tension and differences that have to be addressed selectively.

The Southern African Development Community (SADC) seems not to provide the critical mass necessary for the HE market and it does not seem to be a fertile ground for HE provision compared to China and Asia. In a recent review of the status and capacities of the Implementation of the Protocol on Education and Training by Chung (2007) it is clear that secondary school and technical/vocational education was limited except in Botswana. University education has remained individual state university business and facilitated by bilateral agreements amongst universities of member states. Unfortunately in the African continent financing higher education has remained the responsibility of the government. Some governments are not well off to finance their young population for HE and thus depend on the careful planning of the parents to finance the tuition fees for their children's higher education. In instances where tuition fees for HE cannot be secured tertiary education enrolments tend to be low. Bloom, Canning, and Chan (2006) shared the finding that the Sub-Saharan Africa (SSA) region has low tertiary education enrolments rates. However if we look at secondary education output in Botswana the statistics of eligible students suggest that many yearn for an opportunity for HE, which is a major challenge. It puts UB under pressure and it is also an attractive market opportunity for universities abroad especially considering that on average only 29% of the school leaving students are enrolled into tertiary education in Botswana.

Altbach (2008) talks of a market of international higher education where providers can enter the global market by selling education products and services in an unregulated marketplace. He condemns practices by some of the universities whose agenda is not desirable and writes of [...] prestigious universities hoping to build links overseas, recruit top students to their home campuses and strengthen their name brand and world markets [...] sub-prime institutions – sleazy recruiters, degree packagers, low-end private institutions seeking to stave off bankruptcy through the export market and even a few respectable universities forced by government funding cutbacks to enter foreign markets for profit making. Altbach (2008:p2-3).

The above gives a negative impression of universities from abroad who set up campuses and or attract students to study abroad. There are undertones that suggest that the motivation to offer HE is market driven by the demand for degrees from abroad. The seemingly undefined and unregulated global market of Higher Education (HE) poses risks on quality and standards of knowledge as a product. This environment compromises the good efforts by some of the universities of developing economies to improve on their rating. It should also be realised that the competition between the young and poorly resourced universities of developing economies

versus the established and well-resourced universities of developed countries has a significant bearing on the outcomes. In collaborative ventures the well resourced universities will tend to have an advantage. This is yet another challenge that demonstrates an imperfect HE market.

The quality of HE in African universities has not escaped the critical view of Samoff and Carrol who make the following observation about Africa's higher education

[...] we learn that higher education is sorely failing. Higher education's contribution to development in Africa, the World Bank argues, is threatened by four interrelated weaknesses. [...] Africa's graduates are both too numerous and too poorly prepared. Specifically, Africa's higher education institutions graduate too many teachers, but too few physical scientists, engineers, and social scientists, fields considered critical to development. Africa's higher education institutions generate little new knowledge. Overall, output quality is so low that higher education as a whole plays little useful role. The second two have to do with costs and financing. Notwithstanding the low quality output, higher education costs are needlessly high. Based on a comparison of estimated private and social rate of returns, higher education financing is socially inequitable and economically inefficient (Samoff and Carrol, 2004 p13).

Bollag (2003) collaborated by Bloom, Canning, and Chan (2006) seem to hold a different view from that of Samoff and Carrol (2004) above. On the issue of Africa's graduates being too numerous and they seem to suggest that education attainment and enrolments levels are low especially for SSA. On the subject of Africa's graduates being too poorly prepared it can be argued that there is need to improve this area of HE. The international standards and a qualifications framework against which African Universities can benchmark would be a welcome development but it will have to be agreed upon by the regional countries. SADC has taken steps on quality of education which has tended to carry with it the component of relevance being very important. The focus is more on teacher training, primary, secondary, technical and vocational education. There is therefore a gap to be filled with regards to university education.

The difference in perceptions is evidence of the importance of transnational qualifications frameworks needed to provide standards that would ensure uniformity across countries. Although Transnational Qualification Framework for the Virtual University for Small States of the Commonwealth (May 2008) is still only a concept document it carries with it many ideal settings upon which other frameworks can evolve. HE like all other goods may require trading standards and practices to assure recipients of knowledge of the homogeneity of qualifications. It is nonetheless expected that the knowledge content would generally remain differentiated. The issue of quality and standards needs to be addressed particularly where intellectual capacity is to compete internationally for better remuneration.

Tetty (2006) writes that expertise in African Universities has been eroded to the extent that there is not enough capacity to provide quality training for the new generation of citizens. This could be considered as brain drain. Although UB has enjoyed a fairly stable environment in this regard Tetty's (2006) study indicates that UB is experiencing staff retention problems. The undertone of this position is that the absence of expertise in African Universities compromises the HE quality assurance mechanisms. In order to attract and retain world class expertise the African Universities should have the resources to sustain and keep up with the attractive remuneration

packages offered by universities in developed countries. Regrettably the reality is that many universities cannot match such conditions and would tend to lose some of its intellectual capacity to those offering better remuneration packages. The above issues affecting African universities may apply to all developing countries but the most important concern is whether these are being addressed by the SSA. Chung (2007) acknowledges that there is expansion and evolution in the SADC's higher education but there has been lack of close coordination and collaboration with a few exceptions. Many SADC member states seem to have been individually working on national framework. It is however important to recognise that Higher Education Institutions (HEI) can not go it alone they inevitably have to work as a region.

The discussion of commodification of knowledge as an integral part of HE is linked to the establishment of standards regionally and internationally. Therefore in treating HE as a commodity the process of commodification of knowledge is endorsed as being appropriate hence standards, quality assurance and exchange value would become the underpinning principles. As a global commodity HE has presented a number of challenges to developing economies especially through competitors from developed economies. While leaving each nation to design and develop its HE regulatory system ensures autonomy it may on the other hand prove to be disadvantageous to nations whose systems do not conform to an internationally agreed standard.

The efforts by the General Agreement on Trade and Services (GATS) are a welcome development because this attempt seeks to establish some formal and systemic trade in HE. It is evident however that the system has not worked to its fullest extent. While recognizing GATS attempts as being in the right direction it has not yet addressed some of the significant concerns of the African university education especially in the SSA. A transnational or international Qualification Framework needs to be put in place to ensure uniform qualifications and standards.

The above discussion has picked on the common and probably the critical issues and challenges that Botswana and other SSA countries are faced with in the provision of HE. The issue that should worry many is whether African HE has reached the international standards and more importantly what are these international standards. While the UB is striving to achieve excellence it would be encouraging to see ways it will use to measure excellence. The following five conditions that stand out prominently are a) the existence of a regulatory mechanism and systems that regulate HE institutions; b) the capacity to train as reflected by attracting and retaining high calibre expertise; c) increased enrolment into tertiary education d) the ability to convert knowledge into trade commodities and e) the percentage expenditure of GDP towards tertiary education. The above categories, classifications or parameters go a long way to measure and assess the potential to embrace and engage in commodification of knowledge.

### **Botswana, the Knowledge Economy and University Education**

The Botswana government has taken interest in higher education as a public mission to develop and train the much needed human resource required for the public sector and development of the country. The dream to building the needed intellectual capacity through public university education has been pursued even when the HIV/AIDS pandemic competes for resources. Therefore the social needs of the community have directed the funding and prioritization of higher education scholarships. Lately the motivation in HE is that of science and technology based programmes. This has forced HE in Botswana to pursue science and technology oriented research and programmes. A new International University of Science and Technology is being

established to address this aspiration. It is hoped that UB's faculty of science will have both a competitor in that they have to share the funding from government and complementary institution in that their research ideas and expertise may be shared for better quality output.

A snap shot of the country's knowledge assessment using the "basic scorecard" of the Knowledge Assessment Methodology (KAM) reveals a decline in human development index and a low tertiary education enrolment whereas the secondary education enrolment is significantly high. This suggests the existence of significant pressure on tertiary and HE provision. The public spending on education of 8.6 % of GDP which is double the world average is indicative of the level of commitment that Botswana has towards education. Although the scorecard for 2005 shows a lower index rate of emigration abroad by well educated people, the findings by Tetty (2006) are compelling especially because they directly reflect UB's performance with regards to low retention rate of academics. This is further confirmed by the results of the KAM scorecard for 2008 (Table 1).

**Table 1: KAM Education and Human Resources (Botswana and the World)**

Variable	Botswana		World
	2005	2008	2005
Adult Literacy Rate (% age 15 and above)	78.89	81.20 (2005)	84.09
Average Years of Schooling	6.28	6.28 (2000)	6.86
Secondary Enrolment	72.72	74.94 (2006)	74.51
Tertiary Enrolment	4.71	5.12 (2006)	28.06
Life Expectancy at Birth, years	38.10	35 (2005)	67.05
Internet Access in Schools	2.50	2.80 (2007)	3.80
Public Spending on Education as % of GDP	8.60	10.70 (2006)	4.45
Prof. and Tech. Workers as % of the Labour Force	11.50	12.16 (2004)	19.97
8th Grade Achievement in Mathematics	n/a	366.00 (2003)	488.30
8th Grade Achievement in Science	n/a	365.00 (2003)	488.30
Quality of Science and Math Education	3.80	3.80 (2007)	4.18
Extent of Staff Training	3.50	3.80 (2007)	3.91
Availability of Management Education	3.30	3.40 (2007)	4.30
Well Educated People Do Not Emigrate Abroad (Brain Drain)	4.76	3.50 (2007)	3.59

Source: [http://info.worldbank.org/etools/kam2005/weighted/scorecard\\_adv.asp](http://info.worldbank.org/etools/kam2005/weighted/scorecard_adv.asp)

The major concern comes in from the life expectancy at birth, in years which was low in 2005 but further decreased to 35 years in 2008. The paradox lies in the sore truth and devastation brought about by HIV/AIDS. The pandemic is the source of human capital depletion (apart from the road accidents), the fight against the scourge is relentless but the results are not encouraging. Botswana has provided social oriented programmes to redirect as much as induct the younger population by socializing them to avoid undesirable and risky behaviour this includes modification of curricula in schools and institutions of higher learning.

HE receives its candidates from primary and secondary schools therefore there is need for HE institutions to get involved in programmes at these levels. Attention and facilitation of pre-tertiary learning may accelerate performance at primary and secondary school. This would in

turn pressure improvements in the quality of education at lower levels and lead to improved candidates for HE. As shown in KAM the grade 8 science and mathematics is an important indicator of potential growth. It is therefore probably necessary to revise the curricula and make career specialization to begin much earlier in the development of future students. In the long term it would be reasonable to consider focusing on pre-tertiary education. The UB's faculty of science working together with faculty of education have embarked on a joint project to prepare pre tertiary students in the areas of science and related courses. It is hoped that through this effort more students would get interested in the science and a bigger and competitive pool of students seeking admission into science programmes at UB can be realised.

The discussion above has suggested that universities in developing economies spend significantly on reproducing already existing knowledge to create a working force (university teaching). Commodification of knowledge can therefore exist in institutions that create new knowledge (research work). Such knowledge tends to be protected by patent and copyright and becomes accessible after it has benefited the owners. In the short and medium term certain commitments have to be made by state funded universities and their governments to deliberately embark on research to create new knowledge. Perhaps universities with limited resources for research can use the existing science tools and tap as well as build on the indigenous knowledge. An increase in research funding and a selection of research activities with orientation towards utilization of local knowledge and resources has the potential to create new knowledge and inventions. The key to commodification of knowledge is the ability to create tangible or recognisable new knowledge products. The faculty of science at UB has taken steps to establish relations with the mining industry to take on some of the research projects that address issues of mining and conservation of the environment.

UB's approach of establishing centres of specialisation and excellence has sparked renewed culture of research. These centres pursue different issues including environmental research and monitoring, tourism, HIV/AIDS, capacity building in public administration and management, Defence and Security Management and Culture and Peace. The Centre for Scientific Research, Indigenous Knowledge and Innovation (CESRIKI) has the potential to generate indigenous science research outputs. The potential for this centre to generate new knowledge is very big and therefore it presents opportunities which may lead to registration of patents hence possibility for commodification of knowledge. The key limitation for the centre to realize its potential is funding limitation.

The UB is undergoing transformation and has in this process commissioned consultancies, task groups and committees to look into different issues that include the academic structure, restructuring of some of its centres, staff workload formula and Open and distance education needs analysis. The UB responded to increasing access and participation by increasing its enrolment number up to 15 000 students and introduced part time and distance education programmes. Through its teaching and learning policy it has reinforced student centred learning as well as placed emphasis on e-learning through the WebCt and Blackboard platforms. Although this new culture of learning has presented challenges there is commitment to see it work.

The UB has taken action and is now home to some journals for example Mosenodi which is focused on education matters, Lonaka a bulletin dealing varying contemporary issues of teaching



and learning, the University of Botswana Law Journal with a focus on legal issues, the Pula Journal and Botswana Journal of Business. If these knowledge products are resourced and supported with quality inputs they stand to be significant contributors to commodification of knowledge in Botswana.

The UB has taken steps to address its contribution to research amid the limited resources by developing an institutional research strategy. With it UB will encourage research in all disciplines although it will have priority research themes in order to provide focus. Considerations will be on existing research; national priorities; international trends and emerging societal needs and new research areas. The commitment to mobilise internal and external resources as well as increase collaborative research are yet to be realised. The University of Botswana Institutional Research strategy (2008) is based on the seven (7) priority areas of increasing participation in research; increasing and enhancing student research training; increasing internal and external research funding; increasing international collaborative research; increasing the volume and quality of research outputs; enhancing the impact of research and improving the integration of research and teaching. While these look good on paper the implementation is yet to be tested.

Towards ensuring quality education and in recognition of the emphasis on monitoring performance UB is benchmarking institutional performance against a university comparator group comprising of regional and international institutions. With the facilitation of the TEC the key performance indicators are to be guided by the strategic priority areas of UB thus expanding access and participation; enriching quality academic programmes; engagement and entrepreneurship; extending research and graduate studies and enhancing capabilities. UB has thus set significant milestones to be achieved. In addition the teaching and learning policy has set its agenda aims that complement the values of the UB.

## **Conclusion**

Commodification of knowledge is a necessary condition for universities in developing countries but it does not seem to be a priority. Aspiring to be a knowledge based economy is an appropriate long term goal but it can best be realized if it is coupled with an intermediate goal of building and strengthening the nation's skills base and capacity hence the goal of developing a skills based economy ensures better utilization of knowledge from the HE. In the short term therefore developing economies should establish and develop a regulatory framework for tertiary and higher education to guard against poor quality and for profit education providers. In most economies government is a major player and institutions of higher learning depend to a large extent on the government's expenditure pattern especially towards HE. For this reason government and Higher Education (HE) institutions face the challenge of defining and shaping their relationship with the citizenry. This paper has proposed a change in policy to accelerate students' development at lower levels of education and thereby generate the appropriate and relevant pool of students for HE.

Some universities in developing countries do not have substantial resources to finance and sustain research and development without partnering with institution from the developed world. This presents two major concerns to do with commodification of knowledge in state funded

universities existing in a developing country. First is that state funds expended towards higher education are committed for the development of human resource whose intellectual capacity is intended to stay within the local economy. Second, where university teaching staff and output are attractive and marketable to other nations a threat to the local industry develops otherwise viewed as brain drain. This is because university lecturers will tend to go to employers whose remuneration package is more attractive hence low retention rates. The HE market is therefore imperfect and presents a challenge to institutions of higher learning existing in developing countries.

A commitment towards being a KBE inevitably demands a research agenda to go with it. A KBE can be defined as an economy whose main activity is based on the sale and exchange of knowledge, i.e. knowledge becomes its trade commodity. KBE's exploitation of knowledge therefore plays the predominant part in the creation of wealth (Brinkley 2006). Therefore the economy's human capital is pivotal to its successful economic performance but most importantly the creation of new knowledge will generate significant proceeds for exchange of knowledge. Finally it can be concluded that an educated population therefore competes on productivity and efficiency while a society that creates new knowledge enjoys the sale and exchange of knowledge products.

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