

**A CRITICAL ANALYSIS ON THE RIGHT OF UNIVERSITY TECHNOLOGY
TRANSFER OFFICES TO DEVELOP INTELLECTUAL PROPERTY POLICIES:
REFLECTIONS ON THE IPR ACT**

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**1 INTRODUCTION: INTELLECTUAL PROPERTY POLICIES AT
UNIVERSITIES**

Higher education institutions (HEIs) have a unique capability of creating and disseminating knowledge through research and development (R&D), teaching and learning, and community engagement. The triple-helix model of the national system of innovation emphasises the invaluable role that HEIs play in knowledge development and its importance in enhancing competitiveness of a nation.¹ However, management of R&D outcomes at HEIs can be very challenging when decisions have to be taken regarding ownership and commercialisation of intellectual property (IP) amidst competing interests of the funders, researchers, and the HEIs themselves. Dealing with such individually unique cases, involving the often conflicting interests, in an *ad hoc* manner and without an established set of guiding rules may be problematic. It is therefore imperative for HEIs, as creators of new knowledge, to have some form of policy framework guiding the decision-making process on matters relating to IP.

Prior to promulgation of the Intellectual Property Rights from Publicly-Financed Research and Development Act (IPR Act),² the majority of South African HEIs did not pay much attention to IP administration and management, hence many were without IP policies.³ This situation resulted in university-developed IP being unduly owned by third parties, even where such IP had emanated from State-funded R&D, or was created by researchers who were HEI employees. Employment contracts at universities such as Rhodes University (RU) allowed

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¹Leydesdorff and Meyer "Triple Helix indicators of knowledge-based innovation systems" 2006 *Introduction to the special issue Research Policy* 35 1441-1449.

²Act 51 of 2008.

³Sibanda "Intellectual Property, Commercialization, and Institutional Arrangements at South African Publicly Financed Research Institutions" 2009 in Kaplan (ed) *The Economics of Intellectual Property in South Africa (WIPO)*113-145.

for ownership of IP by researchers.⁴ This and other aforesaid challenges compromised the State's ability to realise substantial return on its R&D investment. The commencement of the IPR Act⁵ in August 2010 therefore established uniform and minimum standards with which the HEIs now need to comply when dealing with IP.

This paper critically analyses obligation placed by the IPR Act on HEIs to establish offices of technology transfer (OTTs) or equivalent functions,⁶ and further examines the right delegated by the same piece of legislation to the OTTs to develop,⁷ on behalf of the HEIs, policies relating to management of IP.⁸

1 1 Policy Options: Commercial Interest Versus Social or Public Interest

It is important to note that while both utilisation and commercialisation of IP are purportedly two of the four key objects of the IPR Act,⁹ the said legislation makes no reference to the development of policies for utilisation of IP, while express provision for commercialisation activities such as profit-making through licensing and assignment is extensively provided.

This raises a question regarding whether utilisation, or broadly the use of IP in the public interest, is indeed accorded similar value, in the drafting language of the IPR Act, as use of IP in generating revenue is. Furthermore, the IPR Act is more elaborate¹⁰ on the specific considerations regarding preferences to be made by HEIs in commercialisation of IP, without any equivalents on transactions relating to the so-called "socio-economic benefits of the people of South Africa"¹¹ when IP is utilised for non-commercial purposes. Another most concerning fact around the dichotomy between commercial interest and social, or public interest, as provided in the IPR Act is that commercialisation is defined as inclusive of both business interests and social or public interest.

⁴Hobololo "Intellectual property co-ownership and commercialisation in public-private partnerships in South Africa" 2015 *Proceedings of the International Association for Management of Technology*. 2625-2634.

⁵Act 51 of 2008.

⁶S 6.

⁷S 7.

⁸S 7(2).

⁹S 2. The key object of the IPR Act is to ensure identification, protection, utilisation and commercialisation of intellectual property generated from publicly funded R&D.

¹⁰S 11 (1) (a)-(h) on conditions for intellectual property transactions at institutions; s 12 restrictions on off-shore intellectual property transactions.

¹¹S 2.

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Utilisation, which is unfortunately not defined in the Act, is commonly understood to relate to use of IP for non-commercial purposes. The consistent reference throughout this piece of legislation to both utilisation and commercialisation purports to indicate an interest in the use of IP for both entrepreneurial purposes and social upliftment. However, the significance of such continuous reference to utilisation as an independent key objective to commercialisation is, as the commitment of this legislation to public interest, questionable.

The obligation placed on OTTs by s 7 (2)(a) to develop IP policies and subsequently manage IP in terms of the IPR Act may be problematic if the premise drawn by this legislation regarding prioritisation between social interests and business interests is unclear or ambiguous. In an attempt to address the concerns raised above, this paper will be divided into five sections wherein Section 1 introduces the scope of the paper; Section 2 discusses the challenges for the HEIs to readily adopt an entrepreneurial R&D culture promoted by the IPR Act; Section 3 discusses the possible effects of the IPR Act on HEIs in terms of IP management, and Section 4 relates to possible challenges that may result from the OTTs exercising their delegated right to develop IP policies. Lastly, Section 5 provides the concluding discussion which makes recommendations that may assist the HEIs in effectively steering the implementation of the spirit of the IPR Act amidst the current institutional and legislative challenges.

2 ENTREPRENEURIAL R&D APPROACH: CHALLENGES FOR UNIVERSITIES

The law-making processes relating to the development of the IPR Act were initiated only a few years after the higher education (HE) sector in South Africa had undergone intensive restructuring. The HE merger process culminated in the establishment of traditional universities (11), universities of technology (6), and the comprehensive universities (6). One of the major benefits of the merger process was that the government through the Department of Education (now the Department of Higher Education) was able to reconsider the specific roles and mandates of all HEIs which then informed the purpose as defined in the universities' mission statements.

The categorisation of these universities is mainly based on the different academic and learning programme offerings and not so much on the nature, extent and direction of the R&D undertaken. It is only the newly established Sefako Makgatho Health Sciences

University (SMU)¹² which bears a sector-specific mandate with specialty in the health sciences. Universities of technology and some comprehensive universities resulted from the merger processes that involved the former technikons. The latter generally had an industrial approach to R&D, unlike many universities which were equally focused on pursuing basic research.

The business approach and/or technological capability of the former technikons now prove to serve as a great advantage for fostering industry-linkages, which some of the universities merged with former technikons aggressively took advantage of. For examples, HEIs such as the University of Johannesburg (an outcome of the merger between the former Witwatersrand Technikon, the former Rand Afrikaanse University, and the Soweto campus of the former Vista University) and the Nelson Mandela Metropolitan University (an outcome of the merger between the former University of Port Elizabeth and the former Port Elizabeth Technikon) currently receive large proportions of IP disclosures from the parts of these universities that were previously technikons. On the other hand, the focus and leadership of traditional universities had ordinarily been on achieving a high number of publications in peer-reviewed journals, in some cases without any considerations of immediate impact to society, environment or industry.

Despite the impact, relevance and even economic or business application of the IP generated by the former technikons, the manner in which that IP has been managed necessitates caution when considering statistics on patent data, or IP ownership in general, as a measure or indicator of technological capability of HEIs. Saragossi and van Pottelberghe state that patent data may indeed be a misleading indicator or form of measurement¹³ relating technological capability of HEIs simply because HEIs in Belgium and other countries, for example, have a history of developing IP which would then be owned by third parties such as private companies that had funded the specific R&D projects or even the private persons in the employ of the HEIs.

Looking at the South African situation, particularly the case of RU where the HEI elected not to take title to IP developed by employees within the course and scope of their duties, and

¹²SMU was established in terms of the South African Government Gazette no.: 37658 of the 16 May 2014, and officially opened its doors on 1 January 2015.

¹³Saragossi and van Pottelberghe “What patent data reveals about universities – the case of Belgium” 2003 *Journal of Technology Transfer* 47-51.

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some funding institutions such as the Water Research Commission (WRC) which took title to the IP generated from R&D they funded, patent data may not reliably indicate the pre-IPR Act technological capability of HEIs. Although the threefold mandate of HEIs has been recently spelt out as teaching and learning, research and community engagement,¹⁴ some HEIs have, for many years prior to the 1997 White Paper on Transformation of Higher Education, focused on teaching as their core-business and in some cases to the detriment of the other responsibilities.

The limited R&D funding received by some HEIs had dictated the manner in which they prioritised on these responsibilities. The legacy of the apartheid regime stills adversely affects the ability of historically black universities (HBUs) to make speedy progress in applied R&D in many disciplines. When reflecting on the state of the HEIs prior 1994, Hall and Symes state:

“The higher education system inherited by the first democratically elected South African government in 1994 was characterised by multiple divisions. Under the apartheid regime, the relationship between individual institutions and the State had varied considerably. The ten universities reserved for white students under apartheid legislation had enjoyed a substantial degree of autonomy. In contrast, other universities were administered as branches of the racially defined government bureaucracy (the Departments of Coloured Relations, Indian Affairs and Bantu Administration and Development), with tight controls over the appointment of teaching staff and similar attempts to control the curriculum.”¹⁵

The disparities caused by this discrimination explain the differences in the manner in which HEIs are resourced to date, how other HEIs could not undertake the innovative, cutting-edge R&D, and even how the concept of an entrepreneurial university has to date not been possible for many HEIs to espouse. In an attempt to account for the low patenting activity at some HBUs, in a study that used patent data as a measure of technological or innovative capability of South Africa HEIs, Sibanda notes, without much substantiation, that according to DoE,¹⁶ not all HEIs are meant to be research-intensive.¹⁷ It will be interesting to find out exactly which of the HEIs fall in this category.

¹⁴1997 White Paper on Transformation of Higher Education.

¹⁵Hall and Symes “South African higher education in the first decade of democracy: from cooperative governance to conditional autonomy” 2005 *Studies in Higher Education* 199-212.

¹⁶The DET at the time was responsible for both basic education and higher education. The South African government has since established a Department of Higher Education and Training (DHET) to administer on all issues relating to HEIs.

¹⁷ M Sibanda “Intellectual Property, Commercialization, and Institutional Arrangements at South African Publicly Financed Research Institutions” 2009, in Kaplan (ed) *The Economics of Intellectual Property in South Africa* 113-145.

As noted earlier, the definition of an institution in s 1 extends beyond HEIs and includes science councils, such as the Council for Scientific and Industrial Research (CSIR), the Agricultural Research Council (ARC), and other Schedule 1 institutions, but this study is focused on HEIs as they are likely to experience unique challenges in institutional IP policy development and the implementation thereof.

One of the major differences between the research councils and the HEIs is, as explained above, that the latter have a mandate extending beyond R&D. This explains, in part, the different approaches to IP management adopted by HEIs and science councils before the commencement of the IPR Act. More importantly, policy objectives of science councils were largely informed by the institutional mission statements. For example, the ARC's mission is to "conduct research, development and technology transfer in order to promote agriculture and industry, contribute to better quality of life, and facilitate or ensure natural resource conservation",¹⁸ while the CSIR's is to "perform multi-disciplinary research and technological innovation with the aim of contributing to industrial development and quality of life of the people of this country, and increasingly in the wider continent".¹⁹

Furthermore, the CSIR's core research focus is to "transfer the knowledge generated through research activities by means of technology and skilled people". It is therefore evident that mission statements, which are premised on the legislative mandates²⁰ of these research councils, clearly articulate as a major priority an entrepreneurial R&D approach purposed at transfer of technology and knowledge.

It is therefore not surprising that the CSIR is the top patent filer among the South African publicly-financed R&D institutions that has comparatively made substantial progress in managing its R&D outcomes.²¹ This is further indication that science councils tend to have a more applied, solution-driven approach to R&D than HEIs as they have technology transfer expressly provided in their mission statements.

¹⁸Ibid.

¹⁹Ibid.

²⁰ CSIR Act of Parliament of 1945, and the ARC Act

²¹Most operating units of the CSIR have dedicated OTTs with skilled personnel tasked with management of IP generated by the units.

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This certainly explains, in part, why the majority of science councils already had IP policies when the IPR Act commenced while the many HEIs did not. A study relating to Belgian public R&D institutions also confirmed that filing of patent applications was more commonly practiced at science councils than HEIs.²² Mission statements of many HEIs in South Africa do not express any aspiration to an entrepreneurial university, or development of commercially-valuable IP from intensive solution-driven and applied R&D programmes.

It is not the intention of this study to make a thorough account of all HEIs' mission statements, but it can be confirmed that the language of many HEIs' mission statements is rather emphatic on the quality of graduates produced, and intensified effort in developing relevant and world-class curricula, while maintaining an African identity. Looking at the mission statements of the University of Fort Hare (UFH), a Group 2 institution, and the University of Stellenbosch (UoS), a Group 1 institution, the aforesaid dictum can be confirmed. For example, the vision and mission of UFH, like most Group 2²³ institutions, does not appear to bear aspirations of an entrepreneurial university, as its vision provides as follows:

“The University of Fort Hare is a vibrant, equitable and sustainable African university, committed to teaching and research excellence at the service of its students, scholars and wider community”²⁴.

Linked thereto is its mission statement, drawn in line with the UFH Strategic Framework implemented from the year 2000, popularly referred to as SP2000 which states:

“The mission of the University is to provide high quality education of international standards contributing to the advancement of knowledge that is socially and ethically relevant, and applying that knowledge to the scientific, technological and social-economic development of our nation and the wider world”.²⁵

The mission statement of UFH suggests an aspiration to benefit society through the IP developed, but it is unclear whether UFH will do this in a manner that prioritises profit-

²²Montobbio “Intellectual Property Rights and Knowledge Transfer from Public Research to Industry in the US and Europe: Which Lessons for Innovation Systems in Developing Countries?” 2009 In *WIPO, The Economics of Intellectual Property*.

²³In Section III of this study, HEIs are categorised in two: The Group 1 institutions being those institutions wherein the implementation of the IPR Act has been more of a top-down approach as the IPR Act introduced radical change in IP management, and Group 2 institutions which represent HEIs that had IP management processes and policies even prior to the influence of the IPR Act.

²⁴<http://www.ufh.ac.za/mission> (last accessed 23-9-2015).

²⁵Ibid.

making or will exclusively seek to benefit society without generating any revenue from society. The UFH SP2000, also a turn-around strategy for UFH, was aimed at comprehensively restructuring the university and gearing it for development and responsiveness to societal challenges. It emphasised social benefit for the people of South Africa and beyond.

While UFH had a commercial entity, known as Fort Hare Institute of Governance and later termed Fort Hare Solutions, which offered a wide range of short-learning programmes mostly to public sector clients, there were no express plans of establishing an OTT or any structure that would seek to commercialise the new knowledge developed from R&D. The idea of establishment of OTTs as a means of capacity that would implement IP policies at HEIs is supported in this paper. However, OTT personnel can unfortunately not make the choice on behalf of the HEI of whether the HEI will adopt a commercial or non-commercial approach to IP management as such is the responsibility of the UTM. It is therefore important that OTTs consult the UTM and get strategic direction therefrom as a basis of operationalisation of technology transfer.

On the other hand, the vision of a typical Group 1 institution, also historically-white university (HWU) such as the UoS defined in the University's strategic framework²⁶ that:

- “In a spirit of academic freedom and of the universal quest for truth and knowledge, the University as an academic institution sets itself the aim, through critical and rational thought, -
- 3.3.1 of pursuing excellence and remaining at the forefront of its chosen focal areas;
 - 3.3.2 of gaining national and international standing by means of its research outputs; and its production of graduates who are sought-after for their well-roundedness and for their creative, critical thinking;
 - 3.3.3 of being relevant to the needs of the community, taking into consideration the needs of South Africa in particular and of Africa and the world in general; and
 - 3.3.4 of being enterprising, innovative and self-renewing.”²⁷

Drawn from the afore-stated vision, the mission or the *raison d'être* of the UoS is to:

- “create and sustain, in commitment to the universitarian ideal of excellent scholarly and scientific practice, an environment in which knowledge can be discovered; can be shared; and can be applied to the benefit of the community”.²⁸

²⁶University of Stellenbosch “A Strategic Framework for the turn of the century and beyond”. Final edited copy following the Council meeting of 20 March 2000. http://www.sun.ac.za/english/Documents/Strategic_docs/statengels.pdf (last accessed on 23-9- 2015).

²⁷Ibid, para 3.2

²⁸Ibid, para 3.3

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The vision read together with the mission of the UoS indicates a strong sense of an entrepreneurial university that seeks to impact society through the new knowledge generated. This is a strategic decision that the UoS deliberated on in the late 1990s and finalised in May 2000 on approval by University Council. This is an executive decision by the UTM with no apparent influence of the IPR Act or national policy, as such was only to become law in over a decade therefrom. The UoS had at the time recently established its OTT, known then as UniStel and later renamed InnovUs, which was responsible for IP management and technology transfer.

In spite of all the differences regarding the question of culture, innovation capabilities and infrastructural and intellectual positioning of HEIs for innovation, and between the missions of the HEIs and those of science councils, the IPR Act indiscriminately imposes similar requirement of entrepreneurialism on all these institutions. This is bound to provoke some levels of resistance from the academic leadership and UTM of some HEIs, particularly those HEIs whose UTM prefer to use the institutions' IP for societal benefit and not profit-making. Such resistance has also been evident in countries such as the US where similar legislation has been introduced. Academic leaders usually take time to adapt to an entrepreneurial approach to the university's business which Rhoades and Slaughter refer to as academic capitalism.²⁹ One of the outspoken professors, a staunch proponent of basic research, interviewed by these scholars argued against the applied, problem-driven and industry-linked R&D as follows:

“Generally, the powers that be favour this. It is encouraged, and creates problems. It's not the kind of research that faculty think they should be doing in an academic setting. If you don't come up with the answers industry wants you to find, what do you do? I've seen lots of conflicts. Others say it is the most important thing we can do to show that we are useful. Our department head thinks it's important....I haven't had the connections with industry. If I had to feed my family and needed something to do, perhaps I would have developed such connections”.³⁰

Within this context, the Bayh-Dole Act in the US is also perceived to have ushered in the era of academic capitalism where “institutional policies are created to give colleges and universities, rather than individual academics, ownership and royalty claims relative to the

²⁹Rhoades and Slaughter “Academic Capitalism in the New Economy: Challenges and Choices” 1998 *American Academic* 37 -59.

³⁰Ibid.

intellectual products of faculty and employees”.³¹The South African HEIs are therefore not immune to the challenges faced by other countries, such as the US, that have implemented Bayh-Dole style legislation as this legislation introduces commercial exploitation of knowledge, a concept that is, by and large, traditionally foreign in academia.

In fact, the Honourable Minister Naledi Pandor of the South African Department of Science and Technology aptly summarised the state of HEIs,³² post the promulgation of the IPR Act, as follows:

“Our universities are not keen on interacting with business, and do not have an adequately entrepreneurial outlook. Many academics complain about having more managerial functions than academic functions; this is a debate we need to have. Just look at MIT and the number of enterprises it has spawned – Boston now features as a huge business entity in the US, mainly because of MIT’s influence. How involved should universities be in business? Would collaboration with business compromise higher education? Should universities focus on pure research rather than applied research? Where will the resources come from?”³³

In South Africa, these are some of the challenges that HEIs have to face, and answers that government, academia, industry and society must collectively provide for HEIs to effectively adopt an entrepreneurial approach to R&D. However, this kind of resistance and thinking is generally unheard of in the science council environment, particularly within top management, as these institutions understand that for them to be sustainable they need to generate some revenue from their core business, the source of the IP. However, within HEIs the approach is very different, ranging from institutions that seek to largely or exclusively use their IP for socio-economic needs of the people of South Africa, those that would like to prioritise revenue generation, to those in favour of a hybrid approach by being of service to society while also engaging in business.

3 EFFECT OF THE IPR ACT ON UNIVERSITY IP MANAGEMENT PRACTICES

To determine the effect that the IPR Act may have within HEIs, it is important to recognise that there are two groups of HEIs. First the Group 1 institutions, which are institutions that

³¹Ibid.

³² This HESA, now Universities South Africa, conference was held at the CSIR International Conference Centre on 3-4 April 2012 to address the theme: Enabling Further Collaboration between Higher Education, Government, and Industry for Research and Innovation.

³³Ibid.

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developed IP related policies and/or established OTTs or similar structures long before the end of 2007, and then the Group 2 institutions, which represent a majority of HEIs that developed IP related policies post 2007.

The Group 1 institutions are 6 in total, namely the University of Cape Town, North-West University, University of Pretoria (UP), University of Johannesburg, University of Witwatersrand, and UoS. The Group 2 institutions are 16 in total, representing all other HEIs. This does not take into account three newly-established HEIs: SMU, Sol Plaatjie University (SPU), and the University of Mpumalanga (UMP).

According to Sibanda, 10 HEIs had developed institutional IP policies by 2007, some of which had even proceeded to establish to establish functional OTTs.³⁴ However, in reality the situation was not as good, as four of the institutions reported in the said study as already having developed IP policies were yet to attain, for their draft policies, the requisite approval by University Councils and other internal stakeholders. This means that, at the time, their draft policy documents neither commanded recognition nor legitimate implementation by UTM or any other structure within the institutions. One of these universities is, to date, after a period of 7 years yet to have its policy duly approved by the internal stakeholders although it has already been approved by the NIPMO as being in compliance with the Act.

The end of the year 2007 is used as a defining period as it was the last year prior to the passing of the IPR Act. However, it is acknowledged that national policy interventions and the processes relating to development of this legislation were initiated prior to this period and could have had an influence on some HEIs which developed IP policies soon before 2008. It is observed that HEIs such as UP established their OTTs and developed IP policies as early 1996. It is believed that reasons for this could not even be vaguely linked to national policy or the IPR Act, but appear to be linked to internal strategy which the UTM deemed fit and in line with institutional mission.

³⁴ Sibanda “Intellectual Property, Commercialization, and Institutional Arrangements at South African Publicly Financed Research Institutions” 2009, in Kaplan (ed) *The Economics of Intellectual Property in South Africa* 113-145 *supra* note 18.

Therefore, Group 2 institutions are those wherein the introduction of the IPR Act was through a top-down³⁵ approach as it required a completely different culture of IP management and technology transfer, while Group 1 institutions represent the majority of HEIs where the effect of IPR Act took a bottom-up³⁶ type of an approach as the legislation promoted a culture of innovation and technology transfer that was already in existence.

The preliminary survey was conducted towards the end of 2013 using structured questionnaires through telephonic interviews with OTT personnel at HEIs who indicated that Group 2 institutions enjoyed relatively less support from UTM than their Group 1 counterparts. UTM and academic leaders at Group 2 institutions were generally not keen on adopting new activities and practices that they perceive as competing with their goal of publishing new knowledge. This thinking was partly driven by the lucrative funding incentives awarded to HEIs by the then DoE, now the Department of Higher Education and Training (DHET), for knowledge published in accredited peer-reviewed journals. To date, this has not really changed much as incidents of researchers who submit papers to peer-reviewed journals for publication before the IP is protected have not ceased to occur. The UTM's buy-in is also questionable for some HEIs where inadequate or no funds are budgeted for IP protection, recruitment³⁷ and retention of skilled OTT personnel to implement IP management best practices.

In comparison to publishing new knowledge in peer-reviewed journals, IP protection and commercialisation are generally viewed as complex, long-term, expensive, highly risky undertakings, and with very little possibility of realising commercial benefits within timeframes comparable to the period DHET takes to process publication-related incentives. This perceived conflict between publication and IP protection proves to be persistent among many researchers and the UTM in some HEIs. It is important to note, however, that the IPR Act does not prohibit publication of new knowledge at all but expressly³⁸ provides in s

³⁵ Goldfarb and Henrekson "Bottom-up versus top-down policies towards the commercialisation of university intellectual property" 2003 *Research Policy* 639-658.

³⁶ Ibid.

³⁷ Some HEIs established their OTTs from State funding and could not retain, post the three-year funding term, the personnel previously funded from the OTT Support Fund.

³⁸ S 2(2)(f).

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2(2)(f), as one of its objects, that new knowledge may be published but only “following the evaluation of a disclosure”³⁹ submitted by the researcher to the OTT or similar structure.

Other external factors that influenced development of IP policies were monetary incentives that were implemented by government agencies such as the former Innovation Fund. The latter administered the Patent Support Fund and the Patent Incentive Fund. The former was meant to provide wholesale subsidy⁴⁰ for patenting costs incurred by HEIs, among other beneficiaries, while the latter was meant for provision of monetary incentives to IP creators who had secured granted statutory rights.⁴¹

Not all HEIs could benefit from these Funds as the key requirement was the existence of an IP policy, at the interested HEI, with express provisions on how the institution would deal with specific matters such as sharing of commercialisation benefits with IP creators. Therefore, for the majority of the HE sector, the development of an institutional IP policy framework was introduced through some kind of a top-down⁴² approach and not a product of a conscious strategic management decision of the UTM.

However, Group 2 institutions had even established OTTs as either a department within the university, or an incorporated entity wholly-owned by the university, to take up the IP management and technology transfer function on their behalf. Therefore, the bottom-up introduction of the IPR Act in these universities enabled and promoted IP management practices that were already in place.

Similar exceptions have been noted in HEIs of other countries such as Sweden and China. For example, the Chalmers University of Technology in Sweden,⁴³ the Tsinghua University,

³⁹ IP disclosures are evaluated by the OTT to ascertain if they are worth protecting prior to public disclosure of the IP in question.

⁴⁰ Sibanda “Intellectual property, commercialization, and institutional arrangements at South African publicly financed research institutions” 2009 in Kaplan (ed) *The Economics of Intellectual Property in South Africa* 113-145.

⁴¹ Ibid.

⁴² Goldfarb and Henrekson “Bottom-up versus top-down policies towards the commercialisation of university intellectual property” 2003 *Research Policy* 639-658.

⁴³ Jacob, Lundqvist and Hellsmark “Entrepreneurial transformations in the Swedish University system: the case of Chalmers University of Technology” 2003 *Research Policy* 1555-1568.

Chinese University of Technology, and Peking University in China⁴⁴ are evidence that introduction of a Bayh-Dole style legislation may also take a bottom-up approach for a few institutions. This has similarities with the US situation where “the principal effect of the Bayh-Dole Act was to accelerate and magnify trends that were already occurring”,⁴⁵ while in South Africa the successful implementation of the IPR Act requires a radical change in culture and business models of the majority of HEIs.

4 THE OBLIGATION OF HEIs TO ESTABLISH OTTs

The IPR Act obliges HEIs to, within a maximum period of 12 months of its commencement, establish OTTs or equivalent functions. In this regard, HEIs may elect to exercise one of the five options: to establish an institutional OTT; a regional OTT when two or more institutions agree, with NIPMO’s concurrence, to have a joint office; designation of certain persons within the HEI for carrying out the technology transfer function; use of an existing structure which may be a private company with affiliation to the university, or any other structure that will ensure achievement of the purpose of the IPR Act.

Given that an IP policy is essential for any HEI, irrespective of the HEI’s entrepreneurial focus or lack thereof, the establishment of an OTT or equivalent structure which will serve to implement the said policy is equally important. However, it must also be emphasised that this has to be the decision of the UTM and be aligned to the overall strategy of the HEI. Young cautions that institutions should make an informed decision regarding establishment of OTTs, and should ask themselves questions such as the following:

“Does research commercialisation align with the [institutional] mission? Do the quality and quantity of research warrant the establishment of a TTO? [and] Is the institution willing to make a long-term commitment to required institutional changes and to adequately invest in resources and people?”⁴⁶

As the spirit of the IPR Act is strongly focused on IP commercialisation, it is important for HEIs, through UTM, to strike a balance between institutional mission and legislative compliance. However, what is more concerning is the IPR Act’s silence regarding the time

⁴⁴Guo “IP Management at Chinese Universities” 2007 In *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices* (eds. A Krattiger, RT Mahoney, L Nelsen, et al)’ MIHR: Oxford, U.K., and PIPRA: Davis, USA.

⁴⁵Colyvas et al. “How Do University Inventions Get into Practice?” 2002 *Management Science* 61-72 (Also available: <http://dx.doi.org/10.1287/mnsc.48.1.61.14272>).

⁴⁶Young “Establishing a technology transfer office” 2007 in *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices* (eds. A Krattiger, RT Mahoney, L Nelsen et al.).

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by which HEIs which shall be established after its promulgation will have to comply with this requirement of establishing OTTs or similar functions.

This creates a challenge with regards to determining the current compliance status of the three newly-established HEIs such as the SMU, UMP, SPU and others that might be established in future. Textually, it may be argued that if they have not established OTTs or similar structures, or developed IP policies, they are in contravention of or non-compliant with the IPR Act. On the other hand, when does it become reasonable to except such compliance from a newly established institution? Is it reasonable to expect such compliance or to declare an institution as non-compliant on the day of publication of its establishment in the Government Gazette or later? And is it reasonable to use the same timelines for the HEIs that never existed and those that were essentially demerged from the already existing HEIs?

For example, the functioning and readiness of SMU, which incorporated the Medical University of Southern Africa (MEDUNSA) following its demerger from the University of Limpopo, to develop and manage IP cannot take as long as UMP and SPU which are essentially new HEIs, that never existed, for all intents and purposes. It is therefore suggested that the IPR Act be amended to provide for compliance requirements in this regard and applicable timelines for institutions that will be established while its legal effect remains.

4 1 Delegation of OTTs to Develop IP Policy

Furthermore, such an OTT structure, as may be established by the HEI, is empowered to develop IP-related policies for the HEI. S 7(2)(a) appears to assert State authority over the HEIs as organs of the State and recipients of public funds. The exercise of State authority in this manner raises serious concerns as it happened in the US where most academics and administrators questioned what appeared to be State interference with institutional autonomy of the HEIs. The American HEIs argued that entrepreneurialism was being pursued at the expense of academic freedom of university staff and students. However, when considering issues of academic freedom or questioning the State's role where public funds have been disbursed, it is important to note that:

“Traditional concepts of academic freedom, that work from the premise that the State should have no role in higher education at all, fail to accommodate the democratic obligations of government in the disbursement of public funds”.⁴⁷

Practically, the HEIs only enjoy conditional autonomy, as correctly pointed out by these authors, as the State still has an important role to play in their overall management. This kind of autonomy is a progressive and pragmatic development from the cooperative governance proposed in the 1997 White Paper to the 2001 National Plan for Higher Education premised on the principle of consultation of the HEIs by the State, as they aptly sum it up as follows:

“In contrast to Moja *et al.* (2003), we would argue that conditional autonomy provides the basis for asserting the right of individual institutions to pursue research objectives on their own terms, to interpret their social responsibilities, to determine the content of the curriculum and to teach in the manner that they think best. This is because conditional autonomy recognises that a democratic state will always have a legitimate, overarching accountability for the disbursement of public funds and for the authentication of academic qualifications”.⁴⁸

This argument makes room for the State to monitor and direct HEIs’ use of the State’s R&D investment in order to ensure that substantial returns are realised. A plethora of literature on development of IP policies at HEIs pays more attention on the content of the IP policies without exhausting the issue of who is the appropriate person responsible for this function.⁴⁹ The IPR Act⁵⁰ prescribes that IP policy development is the responsibility of OTTs as it provides that:

“An office of technology transfer must, in respect of publicly-financed research and development- Develop and implement, on behalf of the institution or region, policies for disclosure, identification, protection, development, commercialisation and benefit-sharing arrangements”⁵¹

Two noteworthy aspects in this provision are: first, the delegation of responsibility for the development and second, implementation of the policies relating to IP. The major difference between policy development and other functions⁵² delegated to OTT personnel is its strategic nature, while the latter relate to the operational activities of the OTT. The IP policy has to be

⁴⁷Hall and Symes “South African higher education in the first decade of democracy: from cooperative governance to conditional autonomy” 2005 *Studies in Higher Education* 199-212.

⁴⁸Ibid.

⁴⁹WIPO Guidelines on Developing Intellectual Property Policy for Universities and R&D Organisations; Guo “IP Management at Chinese Universities” 2007 in *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices* (eds. A Krattiger, RT Mahoney, L Nelsen et al.) .

⁵⁰S 7(2)(a).

⁵¹S 7(2)(a).

⁵²S 7(2)(b)-(h).

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guided by the mission statement, business model, culture and strategic priorities of the institution. The strategic priorities of the HEIs are best understood by the UTM who articulated them. Over and above the important standard issues that the policy must address, policy direction is even more important and is bound to differ from one institution to another.

Therefore, this means that sharing of notes or policy provisions among OTT personnel of different HEIs regarding IP policy development is not sufficient as internal issues and priorities have to be articulated by the institution's UTM. In full appreciation of institutional strategic priorities, Nelsen affirms this argument as follows:

“New offices will find that there are many guides available from experienced universities to help them write their ground rules – but only the administration and faculty of the university can decide which rules make the most sense for their particular institution.”⁵³

The NIPMO Guideline for IP policy development is entitled “Guideline for drafting an IP policy which is in line with the IPR Act”. From the title of this guideline, it appears that NIPMO may offer HEIs assistance towards achieving legislative compliance and not so much towards ensuring that a policy is indeed in line with strategic objectives at the time and the mission statement. The primary purpose of institutional policy is to serve the interests of the institution. Compliance issues with existing legislation are best considered when the strategic position of the institution has been clearly defined. Taking guidance that is specifically designed to achieve legislative compliance prior to consultation with UTM and other relevant structures to understand the HEI's strategic priorities may be problematic. Therefore, affording OTTs the right to develop IP maybe inappropriate, as Nelsen reasons that:

“The upper administration and the faculty must define the mission and priorities of the technology transfer office: Is it primarily to produce licensing income? Or industrial support for research? Is the mission primarily to get technology developed for the public? Or is it primarily to generate start-ups and regional economic development?”⁵⁴

These are key questions that should inform the behaviour and decision-making of the HEIs towards IP protection and commercialisation. In contrast to many technology transfer practitioners who have developed enormous literature on what the OTT professionals need to know when setting up an OTT, Nelsen emphasises the “Ten Things Heads of Universities

⁵³ Nelsen “Ten things heads of universities should know about setting up a technology transfer office” 2007 in *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices* (eds. A Krattiger, RT Mahoney, L Nelsen et al.).

⁵⁴Ibid.

Should Know about Setting Up a Technology Transfer Office”.⁵⁵ Nelsen states that one of the crucial arguments relating to policy development and implementation is that:

“Only senior administration can set the mission, policies, and priorities for the (technology transfer or intellectual property management) program. Clear mandates will help technology transfer professionals choose among the competing priorities and the ever-present trade-offs between business and academic values. These policies will ultimately help to define the university. They need to be clearly stated, and supported from the top, so that technology transfer professionals can make the best decisions and withstand pressure from competing interests”⁵⁶

This strengthens the argument that the implementation or operational⁵⁷ activities of the OTTs can only be handled efficiently within the context of an IP policy responding to the needs and interests of the institution. The success and effectiveness of OTTs at HEIs such as the Massachusetts Institute of Technology (MIT), one of the top and best performing OTTs in various respects in the world, were informed by UTM’s buy-in and leadership.

Having OTT personnel developing IP policies may lead to conflicting interests and actions between the OTT and the HEI they should be serving. In many South African HEIs, the OTTs have either developed IP policies and then followed an institutional stakeholder approval process or developed the IP policies and later undertook a minimal or compromised consultation process.

Additionally, some OTTs commissioned patent attorneys to develop IP policies for their institutions. In some of such transactions, the instructions given to patent attorneys were based on the need to develop an IP policy that was compliant with the IPR Act. While it is important for HEIs to seek to comply with the IPR Act, the primary purpose of having an IP policy, which is to manage IP in line with the strategic objectives and priorities of the institution, should not be lost. Needless to say that some of these transactions were, in some cases, not driven by UTM but by OTT personnel, sometimes with inadequate consultation with UTM.

⁵⁵Ibid.

⁵⁶Ibid.

⁵⁷S 7(2)(b)-(h).

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Understandably, OTT personnel had to respond urgently to the legislated deadline of developing and submitting IP policies to NIPMO at the beginning of August 2011.⁵⁸ The period of 12 months prescribed by the IPR Act for HEIs appears to be impractical for HEIs that did not have an existing or draft IP policy, especially when considering the extensive internal stakeholders' engagements observed in many HEIs when various policies are developed.

While almost all OTTs have tried to observe some level of consultation with internal stakeholders mostly after they had developed the IP policies, the extent of consultations varied immensely and it cannot be confirmed that the all IP policies at HEIs are in line with institutional missions and strategy and reflect the UTM's will. From the preliminary survey conducted towards the end of 2013, Group 2 institutions scored an average of 6.8, on a 1-10 scale, regarding the UTM's buy-in or support towards OTT operations and policy implementation.

The one Group 1 institution interviewed, the UoS, gave their UTM a score of 10 in relation to the UTM's buy-in. The worst case scenario was of an HEI that scored their UTM 1 in the 10 point scale. The establishment of the OTT at this institution was through external funding sourced from the DST. In this particular case, there was evident disconnect between UTM and the OTT. The Intellectual Property and Technology Transfer Director felt that the UTM only tolerated the OTT's existence as it was legislated, and paid for externally by the same government department that legislated it. When the said Director finally resigned before the end of 2013, the position was never filled. The skeleton staff complement at this HEI also continue to enjoy minimal, if any, support from UTM and this affects the very implementation of their IPR Act-compliant IP policy.

For many HEIs, the urgency of having to comply with the Act is likely to have interfered with the policy development process, especially the crucial aspect of stakeholder consultation. This is evident in that some HEIs submitted draft policies to NIPMO for compliance review. These documents are referred to as draft policies because they are not official policies that have been approved by University Council, the final decision-making

⁵⁸Reg. 9(3).

body for such purposes. NIPMO reviewed these documents and where the drafting was in line with the IPR Act, such drafts were certified as legally compliant.

However, in the event that NIPMO found certain provisions of the official, University Council-approved, IP policies non-compliant with the IPR Act, the OTT personnel were advised to amend the relevant provisions so as to meet the compliance requirements in terms of the Act. In many HEIs, the NIPMO-proposed amendments were not taken through internal stakeholder approval channels before resubmission to NIPMO by OTTs. Internal stakeholders only considered the suggested amendments after NIPMO had confirmed legislative compliance. After having secured compliance approvals from NIPMO a few years back, some HEIs are still in the process of taking their IPR Act-compliant and amended IP policies through institutional approval processes.

The limited involvement of UTM in IP policy development may have led to a situation where OTTs in some institutions enjoy minimal or no support from UTM when the IP policies have to be implemented and when OTTs have to operate. Unless other measures are put in place, the OTTs are in this regard likely to be reduced to a tolerated function resulting from legislative instruction than a valued and supported function by UTM. It must be mentioned that the institution referred to above as having its OTT enjoy minimal support from UTM, had to amend, on instruction of its UTM, a policy that NIPMO had approved as legally compliant, and then send back that version for NIPMO's second review. This shows that the OTT was able to achieve IPR-Act compliance for a policy that had no endorsement or tone of the UTM.

Looking at one of the questions that Young raises above, how possible will, for example, the UTM that does not see the alignment between R&D commercialisation with their strategic goals and mission statement support development or implementation of policies that uphold a sharp contrast to their ideological, strategy, business model or position?⁵⁹ Kowalski agrees with Young and Nelsen on the centrality of institutional mission to IP policy and concludes that institutional IP policy framework "should be based on and reinforce the core mission of

⁵⁹Ibid.

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the institution that the policy serves. The mission drives IP management, and not vice versa”.⁶⁰

Affording the OTTs, or delegating thereto, the right to develop IP policies may in some institutions lead to exactly the opposite of what is intended by this progressive piece of legislation as it may appear as prescribing of a specific IP management approach with intent to drive mission and determine purpose of the HEIs.

4 2 Complexity of Delegation in Regional OTTs

IP policy development by a regional technology transfer office (ROTT) is even more complex. First, the IPR Act⁶¹ affords two or more institutions the right to establish an ROTT, provided that the requisite concurrence from NIPMO is secured.⁶² Furthermore, the RTTO is empowered⁶³ by the Act to handle the technology transfer function of the region.

As of 2011, two ROTTs have been established in South Africa thereby ensuring compliance, of at least 8 HEIs, with the requirement of establishing an ROTT. The first to be established was the Eastern Cape Regional Technology Transfer Office (ECR-TTO) with four-member institutions, namely RU, NMMU, UFH and Walter Sisulu University (WSU), located in the Eastern Cape Province.

Towards the end of 2011, the Kwa-Zulu Natal Regional Technology Transfer Office (KZNR-TTO) was also established for the University of KwaZulu Natal, University of Zululand, and Mangosuthu University of Technology. Durban University of Technology is the only institution in the KZN region not officially a member as it was not a signatory of the consortium agreement between all other KZN institutions, although involved and in support of the initiative.

The anchoring model adopted by both RTTOs is such that one member-institution serves as both a member and an anchor or host of the RTTO. In this regard, the Act empowers the

⁶⁰ Kowalski “Making the most of intellectual property: Developing an institutional IP policy” 2007 in *Intellectual Property Management in Health and Agricultural Innovation: A Handbook of Best Practices* (eds. A Krattiger, RT Mahoney, L Nelsen et al.).

⁶¹S 6(3).

⁶² Establishment of regional TTOs is preconditioned on the meeting of the minds between two or more institutions, and between such institutions and NIPMO.

⁶³S 7.

ROTTs to develop and implement IP policies “on behalf of the region”.⁶⁴ It is not clear whether this provision suggests development of a common IP policy for use by and implementation in the whole the region, or whether it means that the RTTO must develop and implement different IP policies for each of the member institutions in the region. Regardless of what the correct intention of the law-makers might have been, it still remains a big challenge to prescribe development of a strategic, institutional, supposedly mission-driven instrument by an entity or office that is located outside the institution which such a policy is meant to serve.

Most technology transfer professionals are quite familiar with the IPR Act and have reasonable understanding of its requirements. However, this does not mean that they have similar appreciation of how each HEI wants to use its IP to advance its objectives. It is a strategic decision that should be taken by UTM. The challenges discussed above concerning delegating the responsibility of institutional policy development to an OTT may even be more pronounced in the case of an RTTO, especially within an anchoring model as adopted for the two aforementioned RTTOs.

In such a case, this provision appears to almost take away this responsibility from the UTM of a member-institution who is better suited to determine how they wish to use their IP in assisting them in achieving their strategic goals, to an almost external entity or office that may not have as much appreciation of the UTM’s strategies. The physical detachment of ROTTs from the non-anchor member- institutions poses a number of challenges for adequate consultation that would usually follow institutional policy development.

The possible temptation for RTTOs may therefore be developing IP policies that are either simply an adaptation of the IPR Act so as to tick the legislative compliance box, or with a number of provisions represented in almost similar to the language of the Act. While this approach may prove efficient for purposes of securing compliance approvals from NIPMO, it may stand to conflict with the internal strategy and HEI’s business model and may not be accorded, by the UTM, the recognition that policy deserves as a management tool. The effect of these challenges may obviously be minimal where the ROTT is established after the

⁶⁴Ibid.

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member-institutions have developed their IP policies. In this case, the ROTT will proceed with implementation as guided by policy.

5 DISCUSSION AND RECOMMENDATIONS

It can thus be concluded that the obligation placed by s 6(1) of the IPR Act on HEIs to establish OTTs or equivalent functions is progressive as it will ensure that the IP developed by HEIs is managed competently. However, there is a need for s 6(1) to be amended to expressly address the timelines for HEIs or other institutions established post the commencement of the Act.

Secondly, it is clear that s 7(1) of the IPR Act which confers on OTTs or their equivalents the right to develop IP policies may have unintended consequences. Undeniably, the idea of developing an IP policy for any HEI is commendable as it will ensure that there is a transparent, strategic and consistent manner in which the IP or by extension knowledge generated by each HEI is consistently managed.

The said unintended consequences may arise from the apparent assertion of State power over HEIs in a manner that appear not be short of micromanagement. Firstly, the policy option for HEIs towards entrepreneurialism appears to be predetermined. The other option or idea of use of IP developed from publicly funded R&D for socio-economic reasons or public interest appears to be vaguely provided in an almost pretentious manner. The Act does not set out how this should be done, while there is more than enough provisions detailing how business transactions involving IP developed from publicly funded R&D should be conducted or managed. The Form IP7, which is simply a biannual report that has to be submitted by HEIs on the IP protection and commercialisation status of IP developed from publicly funded R&D, does not require any progress relation to social benefits as it requires only an update on business prospects.

This level of ambiguity would not affect an HEI's policy options that much if s 7(1) or any other provision of the Act expressly provided for the UTM's role. The title of NIPMO's guideline in policy development expressly provides that NIPMO would assist HEIs to develop IP policies that are compliant with the provisions of the IPR Act. This may certainly not be the best advice for HEIs who seek to develop policies that will best serve institutional strategy. The social or development agenda of some HEIs also do not necessarily imply

conflict with the objects of the IPR Act, as the object of benefiting society features consistently in the Act, although the mechanics of its implementation are only vaguely provided.

In addition to the almost predetermined entrepreneurial policy option for HEIs, the State further asserts its authority over HEIs in a manner that suggests interference with HEIs' internal operations. Indeed, HEIs are organs of the State but have some level of autonomy as discussed in this paper. HEIs, and not OTTs, are the recipients in terms of this Act and so the immediate stakeholders of the State, and by extension NIPMO, are HEIs. This level of detail is important although can be easily overlooked when dealing with policy development within HEIs or institutions in general. This is particularly true when considering that many HEIs which had no IP policies or OTTs were set up from NIPMO's OTT Support Fund. This means that the salaries of these university employees are paid by the State. If the IPR Act allows the OTTs, who report to UTM as employees at the HEIs, to take instruction directly from the State in so far as developing IP policies under the legislative climate of the predetermined policy option as discussed above, there might be conflict within HEIs. The bond between the State or NIPMO and the OTTs should not derive its strength from, or have as its by-product, the weakness of the link between UTM and OTTs.

In terms of the analysis made in this paper, the important role of the UTM to set the tone of the policy in line with strategic objectives of the institution or HEIs appears to be overlooked by s 7(2)(a) of the Act. Given that the culture of IP management is new to many HEIs, as was introduced by the IPR Act and other law-making processes that culminated to the IPR Act, affording this right to UTM would have served a great role in soliciting buy-in from UTM. In that way, their support of the idea of OTTs and IP management could be almost guaranteed as they would easily take ownership of the process. In light of the argument presented in this paper that there must be agreement and coherence between IP policies and missions of the HEIs, it is therefore recommended that the s 7(2) (a) be amended to expressly provide the right to develop IP policies to UTM.

Other provisions, such as s 7(2)(b)-(h), relating to the operational functions of an OTT are correctly assigned to the OTTs. Regarding the issue of the State conferring the right of IP policy development to OTTs, there could have been a better way of encouraging HEIs and influencing them towards the same end without this directive and prescriptive provision.

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The progress that many HEIs in the US had made regarding IP development and management when the Bayh-Dole Act became part of US law by far surpasses the strides made by South African HEIs at the time the IPR Act was promulgated. For example, HEIs, such as the University of California (UC) in the US, with highly successful OTTs started filing patents as early as the 1920s. It was only after more than two decades, specifically in 1943, that UC developed an IP policy which was amended a few times before the Bayh-Dole Act became law. Therefore, when the Bayh-Dole Act was introduced in 1980, it enhanced an already entrepreneurial HE sector. This might explain why the Bayh-Dole Act does not have to provide for, or prescribe, establishment of OTTs or delegation of the right of IP policy development. The systems were already in place, and besides the drafting language of the Bayh-Dole Act, in general, does not appear to be as prescriptive.

The South African reality is, however, that when the IPR Act became law, most HEIs were yet to file their first patent. Therefore, inclusion and leadership of UTM is highly essential for institutionalisation of IP management at HEIs. Therefore, to ameliorate the possible conflict between OTTs and UTM, it is recommended that HEIs establish institutional IP Committees or Innovation and Technology Transfer Committees which will provide strategic oversight to functioning of the OTTs. Establishment of these committees, although not provided for in the IPR Act, may serve to solicit the necessary buy-in from the UTM into the technology transfer agenda and benefiting society from HEI-developed IP. These Committees may be chaired by Deputy-Vice Chancellors of HEIs and may include other senior strategic offices such as the Chief Financial Officers, Deans of Faculties of Science, Engineering and Technology, and Agriculture, Legal Services Division, and other UTM officials or academic leaders that may add value to the advancement of innovation agenda within the HEIs.

In 2013, the ECR-OTT facilitated the establishment of a similar structure, known as the Senate Technology Transfer and Innovation Committee at UFH, and at WSU, through the Deputy-Vice Chancellor, the incorporation of IP management and technology transfer function into the WSU Dean's Committee's responsibilities. Similar interventions may assist in ensuring alignment between UTM or institutional strategy and OTTs. In other countries such as China, Tsinghua University is one of the HEIs that has successfully set up an IP Committee to achieve the same end. Inclusion of these major stakeholders in the institutionalisation of technology transfer at HEIs will address problems of support,

conflicting expectations between OTTs and UTM, and catalyse implementation of the institutional IP policy which is in essence the basis for effective operations of the TTO.

The oversight exercised by IP Committees may include provision for amendment of institutional IP policy when deemed fit. This may then afford the IP Committee, and by extension UTM, an opportunity of operating in terms of the IP policy direction which is in concert with institutional mission, strategic priorities and business model of the HEI, even though they might not have initially fully determined the tone of the policy.