

## **Intellectual Property Policy and Academic Patenting In Malaysia: Challenges and Prospects**

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### **ABSTRACT**

The Malaysian government has identified innovation as the main economic driver in the transition to a high income nation in 2020. In Malaysia, the public universities and public research institutes have been instrumental in the creation of intellectual property for the country. This paper begins with a foray into the rise of academic patenting in Malaysia by looking at patent statistics filed by academic institutions and government research institutes. It then examines two national policy instruments that have been formulated by the government to encourage technology transfer to the industry i.e. the Government Circular on the Management of Intellectual Property owned by the Government and the Distribution of Royalties 1999 and Intellectual Property Commercialisation Policy for Research and Development (R&D) Projects Funded by the Government of Malaysia. To examine the wisdom of these two policy instruments, their provisions are compared to the US Bayh-Dole Act 1980. The paper continues to examine some of the key US court decisions on the interpretation of the Bayh-Dole Act. Finally, the paper explores the position of institutional intellectual property policies in determining IP ownership disputes between the university employer and the academic employee. For this purpose, a comparable Australian case in which a university IP policy was scrutinized is discussed. This is done in order to have a better understanding of the legal challenges that might face any claims of IP ownership by academic institutions. The paper ends by suggesting that academic institutions in Malaysia will continue to play a big role in churning intellectual property for the country if the current policy stand is to be maintained.

*Keywords:* Intellectual property policy, academic patenting, commercialization, IP management

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## INTRODUCTION

### INTELLECTUAL PROPERTY AND WEALTH CREATION

Maskus (2000) describes intellectual property as information that has economic value when put into the market place. Economists have long described the strong link between intellectual property and the economic performance of a country, particularly in this k-economy and innovation era. There has been a significant shift in terms of the competitive edge of a country from production-based to knowledge based services (Kelli & Pisuke, 2008). The golden nuggets that fuel the modern economy are no longer physical assets but intangible assets (Lewelyn, 2010). There is a growing importance of knowledge-intensive business technology and the product life cycles are shorter. To maintain ones' competitiveness in this innovation age is to integrate innovation into development policies. Since the 1970s onwards, many countries have shifted their development policies into churning intellectual assets. The key players in the creation of intellectual assets are the academic institutions and public research officers who are the main recipients of public R & D funding (WIPO, 2011).

The rise of academic patenting has led to considerable concerns particularly on the objectives of research to determine whether it is purely for the gratification of knowledge or to generate money for the academic institutions. The next section underlines some of the policy concerns relating to academic patenting.

### POLICY CONCERNS OVER ACADEMIC PATENTING

The rise of academic patenting incites concerns over the traditional role of an academic institution. A study by OECD (2004) highlights these issues:

- What has been the impact of IP and technology transfer activities on the direction of research?
- Should all patentable academic inventions be patented?
- What is the impact of patenting on the diffusion of public research?

The ethical conflicts arising from academic patenting form another major contention. Kumar (2010) reports that ethical conflicts within the universities include: the clash of academic and commercial cultures, the clash between the researcher and the university, the conflict between openness and secrecy, the ethics of patenting academic "upstream" inventions, and the potential conflicts of interest among academic researchers. In order to maintain the traditional role of the universities as vanguards of knowledge, Kumar advocates for the balancing of idealism and commercialization. Otherwise, in his estimation, universities will lose their identities and souls as the 'ivory tower'. Fabrizio (2007) meanwhile unearths new evidence to suggest that university patenting may indeed be hindering or at least slowing industrial innovation. The conclusion is drawn from 'results of an analysis of industrial innovation' that suggest 'increasing university patenting is

associated with a slowing pace of knowledge exploitation, especially in technology areas that rely more heavily on science as an input to innovation’.

Nevertheless, an empirical analysis on the effects of academic patenting and the quality and direction of scientific research points to the opposite direction. Franzoni and Scellato (2011) found that ‘virtually, there are no negative impacts discernible from research quality and research productivity. At the same time, the average financial returns from licensing activities are very limited.’ The authors argue that the ‘average’ academic patent has little if any negative impact on the dynamics of the subsequent scope and trajectories of scientific research, while it can still contribute to improving technology transfer from academia to industry and foster academic entrepreneurship.

The available empirical evidence suggests that there are not enough conclusive evidence substantiating both sides of the argument. WIPO (2011) alludes to this in the conclusion to the 2011 Report:

*“Understanding how IP protection affects innovative behaviour has been a fertile field in economic research. Important insights gained long ago arguably still shape how economists view the IP system today. Above all, compared to other innovation policies, IP protection stands out in that it mobilized decentralised market forces to guide R & D investment. This works especially well where private*

*motivation to innovate aligns with society’s technological needs, where solution to technological problems are within sight, and where firms can finance upfront R & D investment”.*

Despite such policy concerns many countries have passed Bayh Dole like legislation to bolster technology transfer from the laboratory to the marketplace. In the US, the Bayh Dole Act has been instrumental in reviving the US economy in the 1980s. Similar transformation can be seen in other parts of the world, ranging from Germany, Japan, Korea and the rest (WIPO, 2011). From the Malaysian experience, this paradigm shift comes in two forms; external government intervention and as well internal changes in corporate culture and academic research. The following section examines the development that has taken place in Malaysia in respect to academic patenting. It then proceeds to examine the policy instruments that have been formulated to move this change.

#### *The rise of academic patenting in Malaysia*

In Malaysia the number of patents filed by the academic and research institutions have risen since mid 1990s (Table 1). The rise could have been prompted by government intervention in advancing suitable science & technology (S&T), fiscal and economic policies since the mid 1990s. (Rokiah *et.al.*, 2008; Ida Madieha *et. al.*, 2009; Lim Heng Gee *et. al.*, 2009). The policy shift towards patenting as a form of key

performance indicators pressured these academic institutions that are the main recipients of government R & D, to play an active role in the IP world. Prior to that, most of these institutions felt that as part of their accountability for using tax payer’s money, their obligation was to place the research findings in the ‘public domain’ or ‘open science.’ Since then, these institutions were forced to change their paradigm and corporate culture. In a study on the patent behavior of agricultural research institutes in 2011, Ismail (2011) recounts that many institutes prefer patents as opposed to ‘plant variety’ as the optimum protection over agricultural research findings.

From the 2005-2010 figures, public universities have managed to churn out hundreds of patents which amount to a

considerable success to the government’s intervention policies. It could also be surmised from the figures that even the new universities like University Malaysia Pahang, University Malaysia Perlis, University Malaysia Sabah, University Malaysia Sarawak and University Teknikal Malaysia Melaka have accelerated their uptake of patenting.

The increase is distinctly seen from 2006 onwards as the public educational institutions and government led research institutes have become the most dominant local patent players in Malaysia. Table 1 below illustrates this phenomenon.)

As for the government research institutes, MIMOS is leading the league in patenting activities. Table 2 illustrates that MIMOS, i.e. the National R & D Centre

TABLE 1  
Statistics of Patent Application by IPTA and IPTS for year 2005-2010

IPTA	2005	2006	2007	2008	2009	2010	Grand total
International Islamic University Malaysia	3	9	9	2	0	0	23
Universiti Kebangsaan Malaysia	12	10	23	23	40	43	151
Universiti Malaya	30	13	17	18	41	44	163
Universiti Malaysia Pahang	0	0	0	4	49	41	94
Universiti Malaysia Perlis	0	0	0	0	7	4	11
Universiti Malaysia Sabah	1	0	0	2	1	9	13
Universiti Malaysia Sarawak	0	1	1	5	2	2	11
Universiti Malaysia Terengganu	0	0	0	3	0	1	4
Sultan Idris Education University	0	0	1	0	0	0	1
National Defence University	0	0	0	0	1	2	3
Universiti Putra Malaysia	19	22	25	55	71	90	282
Universiti Sains Malaysia	2	6	3	4	29	35	79
Universiti Teknikal Malaysia Melaka	0	0	1	0	10	7	18
Universiti Teknologi Malaysia	7	9	58	132	250	192	648
Universiti Teknologi MARA	6	21	16	12	27	37	119
Total	80	91	154	260	528	507	1620

Source: MYIPO (unpublished)

for information technology has managed to accelerate its production of IP from a mere 1 application in 2006 to a total of 76 in 2007 and a further increase to 144 patents in 2010. Total patents applied for by MIMOS between 2005 and 2010 accounted for 67.5% of the total patents applied by all GRIs. Among the GRIs, MRB has the longest experience in patenting. Its earliest patent filing dated 1934 is concerned with the treatment of rubber latex. However, over the years, other GRIs have surpassed MRB by leaps and bounds although their patenting activities started only two decades ago.

The sudden change in magnitude is attributable to the shift of corporate culture with regards to the importance of patents. The introduction of internal IP policies in these institutes in relation to employee's inventions is another major factor behind this phenomenon. All these changes emanates from policy direction from the government.

The next section continues by examining the policy instruments that have been introduced to maneuver this change.

TABLE 2  
Patent Applications by R & D Institutes for year 2005-2010

R&D INSTITUTES	2005	2006	2007	2008	2009	2010	Total
MIMOS Berhad	2	1	76	110	131	144	464
Malaysian Palm Oil Board (MPOB)	19	10	21	10	19	19	98
Forest Research Institute Malaysia (FRIM)	1	1	0	2	3	16	23
Malaysia Agricultural Research and Development Institute (MARDI)	2	8	4	7	4	7	32
SIRIM Berhad	8	5	1	6	9	4	33
Institute for Medical Research (IMR)	0	2	1	2	2	1	8
Malaysian Nuclear Agency (MNA)	0	2	2	1	1	1	7
Malaysia Rubber Board (MRB)	1	0	1	0	2	2	6
Malaysian Cocoa Board (MCB)	1	1	2	0	1	1	6
Construction Research Institute of Malaysia (CREAM)	0	0	0	2	1	0	3
Institute Kemahiran MARA	0	0	0	1	0	0	1
Science and Technology Research Institute for Defence (STRIDE)	0	1	0	0	0	0	1
Construction Industry Development Board (CIDB)	1	1	0	0	0	0	2
Malaysia Institute for Nuclear technology Research	1	1	0	0	0	0	2
National Hydraulic Research Institute of Malaysia (NAHRIM)	0	0	1	0	0	0	1
Total	36	33	109	141	173	195	687

Source: MYIPO (unpublished)

## **THE POLICY FRAMEWORK FOR IP CREATION AND COMMERCIALIZATION IN MALAYSIA**

Unlike countries that have adopted the Bayh Dole style legislation, Malaysia instead chose to adopt internal regulations. The two most important regulations are the 1999 Government Circular (Circular) and the 2009 Intellectual Property Policy (Policy). Both instruments are drafted by the government and bind universities and research institutions who are the major recipients of research and development grants from the government. As the Circular and Policy contain rules pertaining to ownership of intellectual property derived from government grants, a thorough understanding of the rules are deemed crucial. Some pertinent questions need to be asked as follows: Who owns the intellectual property derived from a government research grant? Does the government have a residual right or special right over the intellectual property? What is the position of the university employer over the academic employee? What if the intellectual property is not properly managed or commercialized by the university, would the government have the power to override the university's interest? These questions will be addressed in the following sections.

*The Government Circular on the Management of Intellectual Property Owned by the Government and the Distribution of Royalties (1999).*

One of the earliest policy instruments on IP creation is the Government Circular on the

Management of Intellectual Property Owned by the Government and the Distribution of Royalties (1999). The Circular governs IPs created and developed by public servants using government funds. The default position under the Circular is that the Government practically owns the intellectual property developed in by its employees. Specifically, under this 1999 Circular, a government department owns the IP property developed by its employees in these situations:

- i. When it is produced by the department;
- ii. When it is devised using the funds or facilities or equipment or materials from the department; and
- iii. When it is brought about without using the funds or facilities or equipment or materials from the department but within the official business of the department.

In addition to those basic situations, the government also asserts ownership of intellectual property in another two situations:

- i. When it is produced with the assistance of an external party, and the parties has already agreed to bestow the ownership of IP to the government department; and
- ii. When the parties have contractually agreed to assign the intellectual property to the department even though the intellectual property is created by the department's officer without using the funds, facilities, equipment or materials from the department and is connected to any official business of the department.

The Circular clearly provides for automatic 'vesting' of IP ownership to the government department. Once bestowed with the employee's IP, the department is allowed to retain ownership even after the end of the employee's service. This does not give enough incentive for the employees to employ their best efforts in research.

In contrast, any copyright created using the funds, facilities, equipment or materials from the department, even if falling within the official business duties or functions of the staff belongs to the individual employee.

The Circular sets a generous royalty scheme whereby half of the royalties generated goes to the officer who creates the intellectual property. The amount payable to the employee is capped to a maximum of RM30, 000 a month or RM360, 000 a year. If there is any lump sum payment, it should not be more than RM500, 000. The remaining half is to be distributed to the Kumpulan Wang Amanah Majlis Pendidikan dan Kemajuan Sains Negara (MPKSN) administered by the then Ministry of Science, Technology and Environment.

One major loophole with the Circular is that it does not deal directly with research funds channeled by the government and administered by the universities or research institutes. At that particular point of time, some public universities such as UM, UPM, UKM, UTM and the then ITM had institutionalised their own internal IP policies. The major objective was to assert rights over IPs developed within their premises. The position taken in these policies stand in contrast to the Circular

which suggest that IPs created using government funds are bestowed to the government. The argument is that as these universities are government universities, their employee-researchers fall within the definition of public servants under the 1999 Circular.

Obviously, this position is not acceptable to both the academic institutions and the government. The universities are the major recipients of the government's R & D funds and their role in the development of new technologies in Malaysia is critical to the economy. With the beginning of the new millennium, the pressure heightened and the time was felt ripe for Malaysia to emulate the US in introducing policy measures, similar to the Bayh-Dole Act. The Act has been instrumental in facilitating commercialization and technology transfer from university laboratories to the private sector and re-positioned the US as a global technology producer and leader (2006, Bayhdole 25, Inc; Bloom (2011).

This gap is filled with the formulation of the Intellectual Property Commercialisation Policy for Research and Development (R&D) Projects Funded by the Government of Malaysia (The Policy) by the Ministry of Science, Technology and Innovation Malaysia (MOSTI) in June 2009.

*Intellectual Property Commercialisation Policy for Research and Development (R&D) Projects Funded by the Government of Malaysia (2009)*

The aim of the Policy is to establish a common framework to regulate the ownership and management of Intellectual

Property from the creation, protection, innovation, exploitation and technology transfer activities carried out by ministries, government agencies and research institutions which use research funds provided by the Government of Malaysia. Under the Policy, generally, the recipient of a government R & D fund is the owner of any intellectual property resulting from the research. This paves the way for more robust commercialization of academic research output as the academic institution has full disposition over its intellectual capital. Under the Policy, the term “commercialisation” is defined to mean the taking of an idea to an outcome – whether a product, service, process or organizational system in order to market by way of licensing, assignment, spin-off, or joint ventures.

The Policy sets out 7 different scenarios. As a first rule, the intellectual property is endowed to the Recipient that receives funding to run the research project. Secondly, where the research project is commissioned onto an institution either through consultancy or commission agreement, the IP belongs to the commissioner. Such a rule is consistent with the standard policy that an IP accrues to the one who commissions the work. Thirdly, where a government agency that is awarded with an R & D grant from the government in turn disburses the fund to a Recipient, in such a case the Recipient may pursue ownership over the IP. In all these three circumstances, the IP is owned by the Recipient as they involve a straight forward case of disbursement of research funds.

The remaining four scenarios spell out situations where there is collaboration between the recipient and a third party. In these instances, it may result in the joint ownership of the IP. This is where,

- i. the IP is developed jointly by the Recipient of the fund and another research institution;
- ii. the research involves a joint research with more than one institution i.e. where there are several Recipients to a project;
- iii. a research institution and a third party partakes in a joint research;
- iv. the funding comes from both the government as well as a third party.

Consistent with the nature of R & D that requires close collaboration with the industry, the Policy provides the default position that the IP belongs solely to the institution which has been granted the R & D fund (Clause 6.2). However, it appreciates the situation where the third party may have made substantial contribution to the collaborative effort that resulted in the IP. In such a situation, the natural consequence is that the IP will be jointly owned. Furthermore, Clause 6.2.3 allows the vesting of IP ownership solely to the third party where:

- i. The project is focused mainly on product development or improvements to the third party’s existing products or services and where only the third party’s existing Intellectual Property is involved;



- ii. The Relevant Body must benefit from the project by acquiring relevant industry experience through the exposure provided by working with the third party; and
- iii. The third party must bear the full project costs, including costs of manpower, equipment and facilities.

In all the three situations above, the funding comes from the industry. The role of the academic institutions is to assist the industry in either product development or involvement in industry training. In that instance, the resulting implication is that the industry must own any IP that comes about from the collaboration.

#### *National Interest First*

Deep in the heart of the Policy is national interest. One is with regard to the prioritization of local manufacture in the licensing of the IP. Clause 10.9 of the Policy imposes the requirement that the invention must be 'manufactured substantially in Malaysia'. The rationale of the Policy is to ensure that all government funded inventions are worked in Malaysia. The Policy sets out two exceptions wherethelocal manufacture requirementis exempted. This is when:

- i. reasonable but unsuccessful efforts have been made to grant licence on similar terms to potential licensee(s) who would be likely to manufacture substantially in Malaysia; or
- ii. under the circumstances, domestic manufacture is not commercially feasible.

The allowance of foreign manufacturing of local technologies is attributable to the low uptake of such technologies by local companies. Some of the academic research are on high end technologies whose application in Malaysia could be limited. It could also be that the demand for the technologies, products and processes in Malaysia is comparatively smaller due to its limited market reach.

Secondly, it is with respect to the government's 'march in' rights. Under the Policy, such 'march in' rights is stipulated in Clause 14.0 of the Policy. It enables the government to request the IP owner to grant a royalty free, non exclusive, sole or exclusive license to a third party. However, the government's 'march in' right is only exercisable in certain exceptional situations i.e.

- i. when the action is necessary as the Recipient has not taken, or is not expected to take effective steps to achieve Commercialisation of the subject invention in any field of use within a reasonable time;
- ii. where such action is necessary to alleviate public health or safety needs.

Accordingly, under the MOSTI Policy, the government reserves its 'march in' right when the Recipient has neglected to commercialise its IP or when there is countervailing public health or safety needs. Such assurance is comforting as the R & D funds come from tax-payers' money. It is of paramount importance that the fund is being used for the development of products

and processes that can advance the quality of life for the citizens and is not left to waste.

This is comparable to the Bayh-Dole Act, where the US Government has several rights in federally funded subject inventions. The agency that granted the federal funds receives from the contractor “a nonexclusive, nontransferrable, irrevocable, paid-up license to practice . . . [the] subject invention.”<sup>1</sup> The agency also possesses “[m]arch-in rights,” which permit the agency to grant a license to a responsible third party under certain circumstances, such as when the contractor fails to take “effective steps to achieve practical application” of the invention.<sup>2</sup> The Act further provides that when the contractor does not elect to retain title to a subject invention, the Government “may consider and after consultation with the contractor grant requests for retention of rights by the inventor.”<sup>3</sup>

The Policy, however, goes beyond the Bayh-Dole Act with respect to the Government’s reserve rights. Under the Policy, the government holds the right to exploit the IP royalty free in certain exceptional situations itemized under Clause 5.6 of the Policy; i.e.:

- i. when there is a national emergency or where there is a public interest, in particular, national security, nutrition, health or the development of other vital sectors of the national economy as determined by the Government of Malaysia so requires; and

- ii. or where a judicial or relevant authority has determined that the manner of the exploitation by the owner of the Intellectual Property or his licensee is anti-competitive.

The additional power to override the ownership of the academic institutions in the circumstances above reflects the government’s interest to keep ‘public interest’ as a major factor in the disposition of IP rights.

#### *Vesting of Ownership Rights*

The Policy categorically endows the IP ownership to the Recipient of the R & D fund. The Bayh-Dole Act instead provides election for the ‘federal contractors’ (any person, small business firm, or nonprofit organization that is a party to a funding agreement) to retain title to any subject invention. The Act defines “subject invention” as “any invention of the contractor conceived or first actually reduced to practice in the performance of work under a funding agreement.”<sup>4</sup> To be able to retain title, a contractor must fulfill a number of obligations imposed by the statute. The contractor must “disclose each subject invention to the [relevant] Federal election within two years after disclosure” stating that the contractor opts to retain title to the invention; and the contractor must “file a patent application prior to any statutory bar date.”<sup>5</sup> The “Federal Government may receive title” to a subject invention if a contractor fails to comply with any of these

<sup>1</sup>§ 202(c)(4)

<sup>2</sup>§ 203

<sup>3</sup>§ 202(d).

<sup>4</sup>§ 201(e)

<sup>5</sup>§§ 202(c)(1)-(3).

obligations". On this score, the MOSTI Policy provides a better policy option than the US Bayh-Dole Act.

The phrase 'elect to retain title' under the Bayh-Dole Act brings about interesting legal arguments on whether it amounts to an automatic divestiture of ownership rights to the 'federal contractors.' In *Board of Trustees of the Leland Stanford Junior University* (2011)<sup>6</sup> it was questioned whether the Bayh-Dole Act gives automatic vesting of IP ownership to the 'federal contractors'.<sup>7</sup> This case relates to a tussle

<sup>6</sup>*Board of Trustees of the Leland Stanford Junior University*, 131 S. Ct. 2188; 180 L. Ed. 2d 1; 2011 U.S. LEXIS 4183; 79 U.S.L.W. 4407; 98 U.S.P.Q.2D (BNA) 1761, 22 Fla. L. Weekly Fed S 1069

<sup>7</sup>In this case the Board of Trustee of the Leland Stanford Junior University sued a private company, Roche Molecular Systems, Inc, claiming that the latter has infringed its patent over a PCR-based procedure for measuring the amount of HIV in a patient's blood. The measurement process was developed by a staff member of Stanford, Holodniy. As a research fellow of the University, Holodniy had signed an agreement stating that he "agree[d] to assign" to Stanford his "right, title and interest in" inventions resulting from his employment there. To test the measurement, Holodniy's supervisor arranged for him to conduct his research at a private company, Cetus, to learn about the PCR procedure. As a condition of gaining access to Cetus, Holodniy was required to sign an agreement stating that he "will assign and do[es] hereby assign" to Cetus his "right, title and interest in . . . the ideas, inventions, and improvements" made "as a consequence of [his] access" to Cetus. Working with Cetus employees, Holodniy devised a PCR-based procedure for measuring the amount of HIV in a patient's blood. Upon returning to Stanford, he and other Stanford employees tested the

between Stanford, where the academic employee is employed and Roche Molecular Systems, where the invention was tested. As part of the arrangement to test the invention, the academic employee assigned his rights to Cetus, a private company, which was later taken over by Roche Molecular Systems. The main issue in this case is the effectiveness of the assignment and the effect of the Bayh-Dole Act. To whom would the intellectual property be vested in? In holding in favour of the defendant, Roche Molecular Systems, the Supreme Court of United States found that the assignment of rights from the academic employee to a private company Cetus for the purpose of testing his invention, was effective<sup>8</sup> as since 1970, the court has respected the right of the inventor over his patent.

The Supreme Court noted that the language used in the Bayh-Dole Act procedure. Stanford secured three patents to the measurement process.

Subsequent to that, another private company, Roche Molecular Systems acquired Cetus's PCR-related assets. After conducting clinical trials on the HIV quantification method developed at Cetus, Roche commercialized the procedure.

<sup>8</sup>In so doing, the Supreme Court examined the legal history of inventorship in the country in the following passages:

*" Since 1790, patent law has operated on the premise that rights in an invention belong to the inventor. See, e.g., Gayler v. Wilder, 51 U.S. 477, 10 How. 477, 493, 13 L. Ed. 504. In most cases, a patent may be issued only to an applying inventor, or--because an inventor's interest in his invention is assignable in law by an instrument in writing--an inventor's assignee".*

suggested that there is no automatic entitlement of the Contractors over their inventions<sup>9</sup>. The Supreme Court further rejected the notion that mere employment is sufficient to vest title of an employee's invention to the employer<sup>10</sup>.

As there is no automatic divestiture of the invention in favour of the university, what is then the mechanism in which the ownership of the work is transferred to

<sup>9</sup> *“Congress has in the past divested inventors of their rights in inventions by providing unambiguously that inventions created pursuant to certain specified federal contracts become the Government's property. Such unambiguous language is notably absent from the Bayh-Dole Act.*

Instead, the Act provides that contractors may "elect to retain title to any subject invention," § 202(a), defining a "subject invention" as "any invention of the contractor conceived or first actually reduced to practice in the performance of work under a funding agreement," § 201(e)."

<sup>10</sup>“Stanford's contrary construction would permit title to an employee's inventions to vest in the University even if the invention was conceived before the inventor became an employee, so long as the invention's reduction to practice was supported by federal funding. It also suggests that the school would obtain title were even one dollar of federal funding applied toward an invention's conception or reduction to practice. It would be noteworthy enough for Congress to supplant one of the fundamental precepts of patent law and deprive inventors of rights in their own inventions. To do so under such unusual terms would be truly surprising. Had Congress intended such a sea change in intellectual property rights it would have said so clearly—not obliquely through an ambiguous definition of "subject invention" and an idiosyncratic use of the word "retain."

the university? In the estimation of the Court, this is done through assignment of rights from the employee-researcher to the university-employer as currently practised in most universities in the US<sup>11</sup>.

The outcome of *Roche* challenges the standard understanding that Bayh-Dole effectively transfers the ownership of IP developed from federal funds to the federal contractors, i.e. in this case the academic institutions involved. To that extent, the Malaysian Policy gives a clearer stand on who has the initial entitlement of rights over intellectual property created using government funds.

From the above discussion, it can be surmised that the Policy has set down several key aspects: the initial entitlement to the intellectual property; joint ownership of intellectual property where there is collaboration between universities and the industry and the government's march in rights. This has set the right tone for the development of intellectual property by the academic institutions and government research institutes.

### **EFFECTIVENESS OF INTERNAL INTELLECTUAL PROPERTY**

<sup>11</sup>“As just noted, universities typically enter into agreements with their employees requiring the assignment to the university of rights in inventions. With an effective assignment, those inventions--if federally funded--become "subject inventions" under the Act, and the statute as a practical matter works pretty much the way Stanford says it should. The only significant difference is that it does so without violence to the basic principle of patent law that inventors own their inventions.”

## POLICIES

Besides the two national policy instruments, the government has also institutionalized intellectual property management in its periodic plan for the socio-economic development for the country. Beginning the Seventh Malaysia Plan (1996-2000), the government mandated that universities devise internal IP policies and management programmes to enable them to transfer their technologies to the industry. The government policy interventions led to the introduction of IP policies in some of the universities since the mid 1990s. These internal IP policies are yet to be tested in the Malaysian courts and hence its efficacy is not known especially if they are in conflict with the two national policy instruments.

The development in other countries on this is therefore of interest to Malaysia. In a US case that involves the interpretation of the Bayh Dole Act as well as internal university intellectual property policy, *Armin Rudd individually and D/B/A Abt Systems, LLC, and the University of Central Florida Board of Trustees on behalf of the University of Central Florida* (2011)<sup>12</sup>, the United States District Court for the Northern District of Illinois, Eastern Division's determined whether certain research findings of a paid research/teaching fellow, Spireas, which were developed with the assistance of Ciba Geigy Corporation's facilities and state of

<sup>12</sup>*Armin Rudd individually and D/B/A Abt Systems, LLC, and the University of Central Florida Board of Trustees on behalf of the University of Central Florida*, 2011 U.S. Dist. LEXIS 4804.

the art equipment, could be owned by the university employer<sup>13</sup>.

Central to the dispute is the applicability of the St. John's College of Pharmacy and Allied Health Professions' IP policy that binds all academic staff and research students. Under the Patent Policy, Dr. Bolton has an obligation to disclose any patentable research findings and assign to the College any inventions resulting from his research at the College. D. Bolton has also agreed to share any licensing royalties out of the commercialisation of his inventions with the College<sup>14</sup>.

The defendants further challenged the Research Agreement they signed with the College, claiming that it was broad so as to

<sup>13</sup>Spireas supervisor, Dr Bolton, was an employee of Bolton University at that time. After the completion of the research and the conferment of his PhD, Spireas, together with Dr. Bolton filed four patent applications related to his PhD. Research. Prior to that Dr. Bolton resigned from University of Bolton.

<sup>14</sup>St. John's College sued Dr. Bolton on the ground of breach of contractual obligations under the College's Patent Policy i.e. breach of assignment obligations and breach of royalty sharing obligations. Further the College contended that Dr. Bolton has breached his fiduciary obligation to the College by misappropriating the inventions to his benefit. He was also accused of conversion, tortious interference with contract, fraud, and unjust enrichment. As a counterclaim, Spireas and Dr. Bolton disputed that the patents they filed were related to the PhD research conducted in the College as they included additional subject matters not present in the earlier filed patents by the College. The District Court, however, did not accept the contention and dismissed the counterclaim.

constitute an open-ended assignment of all an inventor's future inventions. The District Court found the argument to be without merit<sup>15</sup>.

Spireas turned to argue that patent policies were only enforceable with respect to patents applied for during a researcher's affiliation with the university. This was again dismissed by the Court because if accepted, "it would create undesirable incentives for those engaged in productive research to abruptly end their work and leave the university at the first hint that they had made a profitable discovery--or worse, to conceal and hoard scientific discoveries for later exploitation. The court perceives no public policy concern with permitting a university to enforce its rights to intellectual property when, as is the case here, those intellectual property rights are implicated by patent applications filed by its former

employees or students after they leave the university."

The College further claimed that both Bolton and Spireas had breached their fiduciary duty to disclose the patentability of their research findings to the College. Finding in favour of the College, the Court decided that "Bolton and Spireas were entrusted with St. John's resources and the autonomy and discretion to use those resources, because they possessed the special knowledge and expertise required to exploit those resources through useful research that might result in patentable discoveries."

In contrast to *Roche*, the *University of Central Florida* was decided purely on the interpretation of the internal IP policy. In upholding the validity of the Patent Policy, it was found that a staff that deliberately concealed inventions and subsequently misappropriated them for his own benefit to be not only in breach of his contractual duty to his university-employer but also his fiduciary duty to act in the interests of the employer. Such strong findings provide further support to the existing governance of IP within university's compound.

*Roche* became the centre of contention again in *Alzheimer's Institute of America, Inc. v Avid Radiopharmaceuticals, et al*, (2011), a decision by the United States District Court for the Eastern District of Pennsylvania. In this case, the central issue was whether the University's IP Policy operated to vest ownership in the inventor-assignor's employer in the context of inventions created by its academic staff. It was raised in this case that following

<sup>15</sup> "Federal courts have consistently upheld the validity of patent-assignment obligations imposed on university students, faculty, and staff as a condition of their research activities at the university. See, e.g., *Regents of the Univ. of New Mexico v. Knight*, 321 F.3d 1111, 1117-20 (Fed. Cir. 2003); *Univ. of West Virginia, Bd. of Trustees v. VanVoorhies*, 278 F.3d 1288, 1297-98 (Fed. Cir., 2002); *Chou v. Univ. of Chicago*, 254 F.3d 1347, 1356-57 (Fed. Cir., 2001). These patent-assignment provisions do not implicate all of a researcher's future inventions "in gross"; instead, like the Agreements at issue in this case, they apply to inventions derived from research performed while the researcher is at the university."

*Roche*'s case, the Bayh-Dole Act does not automatically vest patent ownership in the university-employer<sup>16</sup>.

Despite the express reference to '*Roche*', the United States District Court for the Eastern District of Pennsylvania distanced itself from *Roche* to hold that 'unlike the Bayh Dole Act, the effect of the Florida regulations is that it unambiguously vests ownership of its employees' inventions in the University'<sup>17</sup>.

<sup>16</sup>As reported in the case:

*"AIA relies on a recent Supreme Court case for the principle that where the ownership of an invention is transferred from the inventor by operation of law, the inventor's rights are not automatically voided unless there is unambiguous language effectuating an automatic transfer of rights. See Bd. of Trustees of the Leland Stanford Jr. Univ. v. Roche Molecular Sys., Inc., U.S. , 131 S. Ct. 2188, 180 L. Ed. 2d 1, 2011 WL 2175210, at 4 (2011), aff'g 583 F.3d 832 (Fed. Cir. 2009). There, the Court found that the Bayh-Dole Act of 1980, 35 U.S.C. §§ 201(c), (e), 202(a), which allocates rights in federally funded inventions between federal contractors and the government, did not contain unambiguous vesting language. Rather, the Act merely gives contractors an option to retain rights to their work. "*

<sup>17</sup>In the speech of the presiding Judge, Timothy J. Savage:

*"The Roche Court held that the Bayh-Dole Act did not "automatically vest" title to federally funded inventions in federal contractors. It concluded that the Act does not disturb the centuries old principle that the rights*

The major deciding factor in this case was the interpretation of the Florida Regulation which explicitly endows ownership of patents created by an employee-inventor to the university-employer<sup>18</sup>. As made

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*to an invention belong to the inventor. Here, the Florida regulation, unlike the Bayh-Dole Act, unambiguously vests ownership of its employees' inventions in the University. It states: "An invention which is made in the field or discipline in which the employee is employed by the University or by using University support is the property of the University and the employee shall share in the proceeds there from." R. 6C4-10.012(3)(c) (emphasis added).*

<sup>18</sup>The learned Timothy J. Savage further declares that:

*"Under Florida law, inventions developed or discovered by an employee in the course of employment with USF are the property of USF. Fla. Admin. Code Ann. r. 6C4-10.012(3)(c), implementing Fla. Stat. § 240.229 (superseded by § 1004.23) (authorizing state universities to secure patents and enforce patent rights). 21 USF employees are under a duty to disclose to the University any inventions made during the course of their employment there. R. 6C4-10.012(3)(a)(1). The University reserves the right to relinquish its ownership interest. The regulation provides that an employee may seek the University's waiver of invention rights, provided that any assignment or release of rights contains a provision making the invention available royalty-free for governmental purposes to the State of Florida. R. 6C4-10.012(3)(e)(2)."*

explicitly clear by the learned Judge, ‘vesting’ confers the initial ownership at the point of conception, unlike transfer of right that takes place after that<sup>19</sup>.

In *Avid Pharmaceuticals*, the existence of the Florida Regulation has bolstered the ownership claims of the Alzheimer Institute of America. The Regulation contains stronger provision on IP ownership in the context of university employment. It is unfortunate that the District Court in *Avid Pharmaceuticals* did not address the anomaly created by *Roche*.

#### *In the course of employment?*

Another possible recourse for the universities is to assert that any inventions created in the course of employment belong to them. On this point, the Policy endorses the common stand on IP ownership of employee invention. If an invention is created in the course of an employee’s employment, the ownership of the IP shall vest in the employer. This is consistent with the Patents Act 1983. Section 20 of the Act that reads:

1. In the absence of any provisions to the contrary in any contract of employment or for the execution of work, the rights to a patent for an invention made in

the performance of such contract of employment or in the execution of such work shall be deemed to accrue to the employer, or the person who commissioned the work, as the case may be.

2. Where an employee whose contract of employment does not require him to engage in any inventive activity makes, in the field of activities of his employer, an invention using data or means placed at his disposal by his employer, the right to the patent of such invention shall be deemed to accrue to the employer in the absence of any provision to the contrary in the contract of employment:

Provided that the employee shall be entitled to equitable remuneration which, in the absence of agreement between the parties, may be fixed by the Court taking into account his emoluments, the economic value of the invention and any benefit derived from it by the employer.

Further to this, it is possible that an employee is not contractually bound to invent but by virtue of him/her using data or means placed at his disposal by his employer, the IP ownership accrues to the employer. It is interesting to note that the Policy has been couched in general terms. Some universities assert ownership only when the staff has made a ‘significant use’ of their administered resources. MIT for example, claims IP ownership when the IP is developed by MIT faculty, students, staff, visitors, or others participating in MIT

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<sup>19</sup> “Again, we emphasize the critical distinction between vesting of and transferring ownership rights. Vesting by law occurs at conception. Transfer takes place after conception, after ownership has vested. The Florida regulation does not require an employee to transfer his ownership of an invention. It effectively declares that the employee does not own the invention in the first instance”.



programs using significant MIT funds or facilities. The phrase “using data or means placed at his disposal” and ‘substantial use’ of resources carries different connotation and outcomes. There has not been any case law to illustrate the position of academic employee inventions, so cases in other countries will be useful.

One particular case is the Australian case, *University of Western Australia v Gray*<sup>20</sup>, the court considered whether the UWA IP Policy has been validly passed or incorporated. In this case, Dr Gray claimed ownership over certain inventions created whilst he was working with the UWA. Dr. Gray’s right depends substantially on the UWA Patent Regulations. Unfortunately, when the issue was examined, French J found that the UWA Patent Regulations had not been validly passed or incorporated. In default, the position of academic employee is to be determined according to the common law applied. Under the common law, the test of ownership depends on whether the invention has been created by the researcher-employee ‘in the course of employment’ with the university-employer.

On this very important point, French J noted that in the context of an academic employee, there is no specific duty to invent, and/or to conduct research for the university-employer. In other words, is the main issue the duty to invent part and parcel of an academic’s duty? The learned Justice French compared the position of the academics from those researchers

<sup>20</sup>*University of Western Australia v Gray* (No 20) (2008) 76 IPR 222; [2008] FCA 498 (UWA v Gray)

in commercial organizations that are specifically hired to conduct research and invent. Research conducted by academics in universities is typically ‘blue sky’ academic endeavour resulting in the “preparation of peer reviewed learned papers”. In the estimation of French J, the idea that academics have an additional duty to invent as a corollary to his duty to research conflicts with the notion of academic freedom. In other words, the academics’ scheme of service requires him to carry out research projects for the advancement of knowledge but he is not under a duty to invent useful technologies and tools for the betterment of the society. The Universities have no control over the direction and scope of the academics’ research unlike the position in private companies. Another aggravating factor that was used against UWA in this case is that the disputed project involved external funds and not internal university funds. Consequently, the private company that funded the project has greater right over it.

In commenting on *UWA v Gray*, Van Caenegem (2010)<sup>21</sup>, argues that to rationalize the findings of the trial and appeal court’s reasons, it is better that universities craft into their employment contracts, the duty to invent. He however cautioned that placing academics under a duty to invent would fundamentally threaten the role and position of universities in society. It would also sit awkwardly with academic freedom, in terms of research direction and publication.

<sup>21</sup>Van Caenegem, W., *VUT v Wilson, UWA v Gray* and University Intellectual Property Policies, (2010) 21 AIPJ 148.

Although the learned French J has confined his deliberation to the common law concept of 'in the course of employment', it has to be noted that the duty to invent, though not specifically expressed in academics' contracts of employment, is implicit in the role of academic institutions nowadays. Academic institutions are no longer expected to conduct 'blue sky' research only but are also required to spearhead science and technology to move the country's economic development. To that extent, the court in *Gray* overlooked the importance of producing 'inventions' within academic spheres.

## CONCLUSION

From the Malaysian experience, the paradigm shift towards intellectual property comes in two forms; external government intervention and as well internal changes in corporate culture and academic research. The formulation of the Policy is definitely a step in the right direction. More fundamentally, the Policy differs on major policy issues from the US Bayh-Dole Act. This demonstrates that the Malaysian government is mindful of all the criticisms against the later Act. Though Malaysia is behind the developed countries by thirty years in terms of innovation policy, we can benefit from their learning curve and avoid all the pitfalls faced by them. The legal challenge on the application of the Bayh-Dole Act as well as the efficacy of the internal university IP Policies that occur in the US and Australia are developments that we need to take into account in our evolution

process. Although the Policy has clearly delineated IP ownership in favour of the employer-university, there is still a need to have institutional IP policies in case there is a dispute between the university employer and academic employee.

The policy move indicates that the government, in Malaysia, as well as other parts of the world, continues to underwrite the cost of basic research with the expectation that the result should be transferred to the market place. The role of universities in creating knowledge and innovation as the key driver of economic and social well-being becomes more critical. Phrases like 'academic patenting', 'university entrepreneurship' 'spin-out companies' become the buzzwords in this new equation.

What then is the impact of IP and technology transfer on the direction of research as has been raised by OECD? Should all patentable academic inventions be patented? What is the impact of patenting on the diffusion of public research? All of these developments demonstrate these concerns remain mere rhetoric with little consideration neither by the policy makers in the government nor by the academic institutions. The remaining issue is how adept are the academic institutions to this new role and how they can rise to the occasion.

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