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## The promise of the science commons and the tragedy of intellectual property rights: The university's IPR policy in perspective

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## UP School of Economics Discussion Papers

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**The Promise of the *Science Commons*  
and the Tragedy of Intellectual Property Rights:  
The University's IPR Policy in Perspective**

by

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THE PROMISE OF THE *SCIENCE* COMMONS  
AND THE TRAGEDY OF INTELLECTUAL PROPERTY RIGHTS  
The University's IPR Policy in Perspective<sup>1</sup>

By Niceto S. Poblador, Ph.D.<sup>2</sup>

**[A note from the author:**

*The title of this essay is a play of words on “The Tragedy of the Commons,” the title of the landmark paper by Garrett Hardin which appeared in **Science** in 1968. After a long period of dormancy, the concept was resuscitated by Elinor Ostrom in 1990 in a book which gained her the Nobel Prize in Economics in 2011.*

*Science Commons is one of an increasing number of academic and scientific advocacy groups that seek to promote open access to published works and data for the purpose of capturing the enormous potential value from the vast numbers of researches being turned out by individuals, businesses, universities and research institutions all over the world (<http://sciencecommons.org/projects/publishing/>).*

*By commons, Hardin and Ostrom meant communally owned and used resources such as grazing lands, forest resources, mineral resources and so on the unmitigated use of which lead to their eventual exhaustion or destruction. By contrast, the ‘commons’ in science commons refers to knowledge and information, resources that follow a totally different economic logic from those that apply to physical resources. Property rights and other governance mechanisms that apply to one do not necessarily apply to the other.]*

**Introduction**

Early this year, the University adopted a policy on Intellectual Property Rights (IPR) which sets certain restrictions on the accessibility of theses, dissertations and defense proceedings. This essay looks closely into the implications of this policy and explores whether or not it is in keeping with the traditional role of the university in creating, preserving and disseminating knowledge. In particular, it examines the potential impact of the new set of guidelines on research output on the rate of technological innovation.

The Rise of the Entrepreneurial University

By long-standing tradition, the **sole** function of a university is to develop, preserve, and disseminate knowledge for the ultimate purpose of enhancing the well-being of society. Historically, it has never been the function of a university to claim economic value from the new knowledge that it has developed or discovered. The generally accepted norm is that research in

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<sup>1</sup> An earlier version of this article appeared in the Commentary section of the June 2012 issue of the **U.P. Newsletter**.

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universities should be guided solely by the quest for knowledge, and should therefore be "...isolated from demands of economic utility" (Nelsen, 1998).

Of late, however, an increasing number of universities, in the U.S. in particular, have become more and more preoccupied with capturing economic value from their research output and publications. They have, in a word, become "entrepreneurial" (Gibb and Hannon, [https://webspaces.utexas.edu/cherwitz/www/articles/gibb\\_hannon.pdf](https://webspaces.utexas.edu/cherwitz/www/articles/gibb_hannon.pdf)), not in the sense of turning out useful and marketable new products and services resulting from their scientific or creative work, but by claiming proprietary rights to the knowledge that they have produced and generating income from them. Patenting, and to a much lesser extent, copyrighting and other forms of proprietary claims to knowledge and information, has become a new *raison d'être* of institutions of higher learning in the United States, and increasingly, in Europe and in other parts of the world as well.

The recent move by the University of the Philippines suggests that it is following the lead of U.S. universities in its treatment of intellectual property rights (IPR). On February 2, 2012, Quezon Hall issued MEMORANDUM NO. PAEP 2012-03 which mandates the University to withhold public access to theses, dissertations and defense proceedings until potential property rights on their content are fully protected by law. While the avowed purpose of the policy is "to generate new knowledge and share this for the benefit of the wider public," an implicit objective of seeking legal protection of intellectual property rights is to prevent others from expropriating economic value from new knowledge created in the University. The underlying belief is that the University has a rightful claim to the economic value resulting from its research activities. To the extent that all research activities in the University are undertaken with publicly owned resources and in many cases with public funding, it follows, so the reasoning goes, that the University has residual rights to the patents that may be granted on these research findings, and by extension, on the revenues that may be generated from their commercialization.

In the implementation of this new policy, authors of theses and dissertations are instructed to allow access to their works **only** under any one of the following two conditions: (a) make them available only after consultation with the author/thesis adviser; or (b) make them available only to those bound by confidentiality agreements. Otherwise, these are to be made available to the general public.

#### Implications of Restricting Access to Research Output

We contend that the new set of constraints imposed by the University on its researches and publications are unusually restrictive, and have far-reaching consequences on the pace of technological development in the country.

By limiting access to its research output over extended periods of time, ***the University's new policy on IPR tends to slow down if not totally inhibit the communal effort that is necessary in order to realize their full potential economic value.***

The University's new IPR policy seeks to withhold access to its research findings until such time that appropriate patents or copyrights shall have been granted. While copyrights are easily obtained, the process of acquiring a patent from an invention, a chemical formula or a new production process is a long and tedious one. In a highly dynamic and volatile knowledge environment, it is very probable that by the time the patent has been granted, the invention, process or formula shall have lost its potential value. The University could very well end up with another "Rembrandt in the attic."

The economic value of new knowledge, ideas or inventions that comes out of the University's research activities, by itself, is quite miniscule. Their potential value can only be fully realized by combining this with the complementary knowledge, ideas and inventions developed by others. The required synergy can only be achieved through an extensive network of collaborating agents.

The process of capturing value from collective effort is a long, complex and arduous one. As we have just noted, it usually takes a long period of time before a new idea or concept is granted a patent. Further development of the patented invention into a functional and commercially viable prototype, and finally bringing the product to market, requires yet another extended period of time, and certainly more interaction with countless others. Only after the product or service has been fully accepted by the ultimate users can the value of the new product or service be firmly established.

In the fast-paced, knowledge-driven and highly-interconnected world, novel ideas and inventions tend to atrophy over time at an accelerated pace. The process of developing a product or production technique and bringing this to market should therefore be accomplished as quickly as possible in order to achieve first mover advantage. This requires that ***all participants in the collective effort - scientists, engineers, marketing experts and financiers - should have unhindered access to each others' information.***

One of the reasons often cited for patent protection is to prevent others from usurping the commercial value of new ideas by surreptitiously copying them and passing these off as their own. However, this generally accepted rationale for patent protection ignores the fact that it is extremely difficult and costly for imitators to copy somebody else's work. It has been shown, for example, that on the average, imitation costs are 65% of the cost of developing it, and that the time it takes to imitate a technology is 75% of the time it took to invent it in the first place (Mansfield, 1986). The cost of possible litigation arising from charges of patent infringement is yet another deterrent to would-be copycats.

The stealing of knowledge and information embodied in the University's research output by unscrupulous outsiders is costly to would-be imitators and is highly unlikely. The cost to the University of insuring their safety from illegal expropriation is equally prohibitive. Considering the highly dubious social benefits arising from the strict enforcement of patents and copyrights, the cost to the University of preventing their infringement is difficult to justify.

## An Emergent Business Model

It appears that the business model that has been adopted by the University is one which is designed to generate income from the patents that it expects to accumulate from the implementation of its new IPR policy. The financial benefits from these patents may be realized not by developing the patented invention, formula or process into useful products or services and bringing them to market, by itself or in partnership with others, but by collecting license fees for their use by other parties.

With its new policy on IPR, the University seems to be following the path taken by a number of American universities such as MIT, Stanford and Carnegie-Mellon. These well-known institutions have set up their own technology licensing operations (TLO) to manage their large arsenals of patents which have been accumulated through the years. However, the University should proceed with caution in pursuing this strategy because unlike many of its American counterparts, it lacks the enormous resources and long experience of university-industry collaboration to be able to successfully manage its own TLO.

The University's technology licensing office, recently renamed the Technology Transfer and Business Development Office (TTBDO) represents yet another layer of bureaucracy and adds yet another player to the already convoluted patenting game. In addition to the TTBDO, we have the "inventor," presumably a UP professor, student or researcher, the "licensee", a business entity which intends to make use of a patent owned partly or wholly by the University, and the University itself which represents the "public" whose interests it is supposed to serve. The presence of positive transaction costs, information asymmetries, and the conflicting interests of the four parties involved leads to a classic Agency Problem, and any contractual arrangement that may emerge from this situation is bound to be socially sub-optimal (Kenney, Martin and Donald Patton, "Reconsidering the Bayh-Dole Act and the Current University Invention Ownership Model," <http://brie.berkeley.edu/publications/wp182.pdf> ).

There are signs that many large industry players (many of which have downsized their R&D operations) notably those in ICT such as IBM, HP and Intel have become increasingly disappointed with their dealings vis-à-vis university TLOs which they find too costly and too cumbersome to do business with. They are instead turning to the cloud, or to independent researchers and research institutions, including European universities, for their external technical input requirements. (Patent Trolls: How Bad Is the Problem? <http://www.popularmechanics.com/technology/gadgets/news/patent-trolls-how-bad-is-the-problem>)

## Patenting and the Rate of Technological Innovation

Historically, patents and other forms of intellectual property rights have been regarded as an effective way of encouraging innovation and creativity. This is achieved by granting patent owners a temporary monopoly over their inventions, and in this way providing them the

opportunity to enjoy the financial rewards from their works. It is for this reason that patents are highly valued, and inventors are willing to go through great lengths and incur enormous costs in acquiring patent rights. ***Seeking patent protection has become one of the most common forms of rent-seeking behavior, and is a major reason for the high costs typically associated with new products and processes*** – high enough to discourage potential product innovators and entrepreneurs, and to slow down the emergence of innovative and potentially useful ideas.

The granting of monopoly power effectively insulates patent owners from would be competitors who all-too-often have far superior (and cheaper) products to offer. Many of these patented products and processes such as the Watt-Boulton steam engine at the turn of the 19th Century, the Windows OS, and the internal combustion engine have become what are known as the dominant designs. (Other cases of inferior products designs that have become industry norms are the QWERTY keyboard design and the VHS recording system.)

Another argument given by advocates of the strict enforcement of IPR is that patenting reduces or eliminates the risks that are typically associated with new products or processes, and therefore accelerates the pace of technological innovation.

There is an alternative and equally plausible argument, however. Risk can be viewed as the market's way of assessing the potential technical and commercial success or failure of a new product or process. It is an effective mechanism by which the market screens out potentially worthless inventions, thereby giving more innovative ones a better chance of being adopted. Patents tend to enhance the probability that inferior products will prevail. ***Thus, by artificially reducing perceived risk, patents are likely to slow down rather than step up the rate of technological innovation.***

There is mounting evidence that the role of patents in encouraging technological innovation has been grossly exaggerated. For example, it has been shown that historically, the larger share of inventions have been developed without the benefit of patent protection. Studies show that most firms rely largely on alternative ways of appropriating returns from their product development activities, such as company secrecy, lead time, product complementation, and the development of company-specific technologies (Sampat, <http://www.cspo.org/products/rocky/Rock-Vol1-2.PDF>).

## Conclusion

With its new strategy on IPR, the University has, in effect, endorsed a policy of strict enforcement of IPR protection, a move which puts the University at odds with current thinking on the issue in scientific and academic circles.

The University should re-examine its position on this matter. Rather than attempting to benefit financially from the strict enforcement of patent laws through the operation of the

TTBDO, the University should instead serve as a facilitator of the free flow of knowledge and information which has become the hallmark of the emerging era of open science and open innovation.

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