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SI 519/PubPol 688

Writing Assignment 1

Topic 7

A World Without Patents: Collaborative Innovation or Secret Knowledge

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## **A World Without Patents: Collaborative Innovation or Secret Knowledge**

The purpose of the U.S. patent system is to promote the full disclosure of useful, novel, non-obvious inventions. In order to encourage such disclosure, the U.S. PTO awards a twenty-year monopoly to the inventor and exclude others “from making, using, or selling an invention covered by the patent.”<sup>1</sup> The patent system has been criticized for overlooking the non-obviousness requirement, unjustly rewarding individuals for insufficient disclosure, and ultimately promoting corporate hegemony over innovation. Though the current system may have its flaws, would innovation be hindered by the absence of patent protection? Significant innovation in the fields of industrial manufacturing, pharmaceutical research and software has occurred outside of the traditional patent system. Furthermore, trade secrets provide an alternative method of protecting intellectual property.

### **Examples of innovation in the absence of patents**

#### *I. The Cornish Engine*

In 1812, British inventor Richard Trevithick created the high-pressure Cornish engine. This engine was an improvement to James Watt’s steam engine which was patented in 1775. Unlike Watt, Trevithick did not patent the Cornish engine and instead allowed it to be freely copied. As the Cornish engine was “amenable to improvement”, this free disclosure “triggered a long and extremely successful period of ‘collective innovation’ in which different firms made small, incremental changes to the original.”<sup>2</sup> UCLA Professors Michele Boldrin and David Levine add, “As a measure of the social value of competition versus monopoly... The duty of steam engines... that during the twenty five years of the Boulton and Watt monopoly (1775-1800), had remained practically constant, improved by roughly a factor of five during the 1810-1835 period.”<sup>3</sup>

<sup>1</sup> “Patents.” *Wisconsin Alumni Research Foundation*, 2008, <http://www.warf.org/inventors/index.jsp?cid=15&scid=10> (accessed 21 October 2008).

<sup>2</sup> Boldrin, Michele and David K. Levine. “Innovation Without Patents.” In *Against Intellectual Monopoly*. 11 November 2005, <http://levine.sscnet.ucla.edu/papers/ip.ch.4.m1004.pdf>, 6, (accessed 21 October 2008).

<sup>3</sup> *Ibid.*

## *II. Pharmaceutical research in India*

It is often contested that innovation in pharmaceutical research is dependent upon the monopoly provided by the U.S. patent system. India's Patents Act of 1970 (IPA), which prevents the patent of pharmaceutical *products*, challenges the validity of that statement.<sup>4</sup> Though the IPA does not abolish patents for pharmaceutical *processes*, it restricts protection to one manufacturing process to one company for a maximum of 7 years.<sup>5</sup> Additionally, a patent becomes invalid if there is no resulting local production within three years of issue. "The Indian experience has shown that it is precisely the relaxation of its national IPR regime that promoted the growth of its domestic industry, thereby ensuring a better patient access to medicines."<sup>6</sup> This relaxation of patents is credited with the growth from 5,126 Indian pharmaceutical companies in 1980 to 20,000 in 2006.<sup>7</sup>

## *III. Open source software*

The Vice President and Assistant General Counsel for Red Hat, a Linux provider, recently posted, "The open, collaborative activity at the heart of open source is at odds with the patent system, which excludes the public from making, using or selling a patented invention. Open source developers seek to contribute code to the community – not to exclude others from using the code."<sup>8</sup> However, Red Hat is among several software companies that have acquired patents as a defense against infringement lawsuits from proprietary firms. Despite the fact that open source software has developed largely outside of the incentive structure of the patent system, "in general, both FOSS [Free and Open Source Software] and proprietary systems are roughly equivalent in terms of

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<sup>4</sup> Kremer, Michael and Rachel Glennerster. "Market and Government Failures." In *Strong Medicine: Creating Incentives for Pharmaceutical Research on Neglected Diseases*, 29-44. Princeton: Princeton University Press, 2004.

<sup>5</sup> Chaisse, Julien L. and Samira Guennif. "Patent Political Economy - Indian Lessons on Pharmaceutical Patent" (December 8, 2006). bepress Legal Series. Working Paper 1902, 8, <http://law.bepress.com/expresso/eps/1902> (accessed 21 October 2008)

<sup>6</sup> Chaisse, 2.

<sup>7</sup> Ibid, 9.

<sup>8</sup> Tiller, Rob. "Red Hat Asks Federal Court To Limit Patents On Software." *Red Hat*, 7 April 2008, <http://www.press.redhat.com/2008/04/07/red-hat-asks-federal-court-to-limit-patents-on-software/> (accessed 21 October 2008)

security and reliability.”<sup>9</sup>

### **Summary**

Innovation is possible and perhaps more effective in the absence of patent restrictions. Evidence:

- The Cornish Engine
- Pharmaceutical industry in India
- Open source software

In the absence of patents, firms may substitute trade secrets to protect their intellectual property. While this may limit innovation by prohibiting collaboration and adaptation, it does not prevent innovation through reverse engineering.

### **What about trade secrets?**

Though this paper has addressed three historical examples of innovation outside of patents from the industrial revolution until present, it is important to acknowledge the possibility that trade secrets could replace patents as a means to protect corporate intellectual property. A 2000 Carnegie Survey found that “only about 1/3rd of respondents feel that patents are effective. Secrecy, lead time – the advantage of being first, and complementary manufacturing are rated as the most effective.”<sup>10</sup>

Intellectual property attorney Joseph Hosteny cites two main advantages for trade secrets over patents: fewer requirements (non-obviousness, novelty, and utility do not apply) and infinite duration of protection. He adds, “Trade secrets have disadvantages – most importantly that someone who independently derives a trade secret can use it, whereas a patent can be infringed even by another inventor of the same invention.”<sup>11</sup> While a trade secret may allow a firm to maintain its competitive advantage, it is not suitable protection for a product that can be easily reversed engineered, such as software or pharmaceutical products.

### **Sources Consulted**

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<sup>9</sup> Boulanger, A. “Open Source Versus Proprietary Software: Is One More Reliable than the Other?” *IBM Systems Journal*, Vol. 44, No. 2, 2005, 246 <http://www.research.ibm.com/journal/sj/442/boulanger.pdf> (accessed 1 March 2008)

<sup>10</sup> Boldrin, 6.

<sup>11</sup> Hosteny, Joseph N. “Patent or Trade Secret: Which One is Best?” August 2008, <http://www.hosteny.com/archive/hosteny%2008-00.pdf> (accessed 21 October 2008)

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