The Great IP Debate: Do patents do more harm than good?

28 Jul 2016 | Viewpoint Patents

A formal debate at Euroscience Open Forum in Manchester pitted pro- and anti-patent experts. You decide the outcome.

Patents have been with us since the 17th century. In exchange for disclosing one's invention, the state grants a limited, legal monopoly over exploitation. In theory, the system encourages more innovation, for the good of society. But recently, voices of dissent have been rising. Legal costs are high. Specialists game the system to their advantage. Life-saving innovations get priced beyond the means of the poor.

On July 26 in Manchester, UK, at Euroscience Open Forum, Europe's biggest biennial science conference, Science|Business Editor-in-Chief Richard L. Hudson organised a formal pro- and anti-patent debate among four experts, moderated by Dame Nancy Rothwell, President and Vice-Chancellor of the University of Manchester. Herewith, his paraphrase of the arguments, so you can judge for yourself.

The case against patents:

David Levine, economist at the European University Institute in Florence, and Alessandro Nuvolari, economist at the Sant'Anna School of Advanced Studies in Pisa.

Patents discourage innovation. When Steve Jobs and Steve Wozniak started developing the first Apple computers in a garage, they did not worry much about patents. They shared and borrowed ideas from their network of fellow geeks. If they had had to pay royalties on all the software they borrowed, today we would have no email, no smartphones, no What's App, no Google. The most important software innovations in the US happened before the US began allowing software patenting (in Europe, software patents as such are not possible.) More recently, the pace of innovation slowed.

Today, patents are often used as weapons. In the 1950s, an American inventor filed so-called "submarine patents" to claim an early form of machine vision technology; when others decades later developed bar code and other machine readers he sued to protect his previously unnoticed patents and collected more than $1 billion – even though the real development work had been done by others.

As another example, big companies today routinely cross-license patents to avoid blocking one another – but in the process also block new entrants that could disrupt the market, improve services and lower costs. That hurts consumers and inventors.

Patents are not necessary for economic growth. While the US and Europe have long-established patent systems, China's high-growth economy does not; only recently has its domestic patent system grown, and its purpose is not so much to protect inventors as to lend credibility to their work.

In fact, patents actually hurt the economy. In the US, the cost of patent trolls – firms that acquire strategic patents and use legal threats to extract steep royalties from real innovators – now amounts to 12 per cent of business R&D spending. It is, in essence, a new tax on innovation.

Society can be more innovative without patents. One study of the Great Exhibition of 1851, the world's first technology fair in London, found that only 10 per cent of the innovations on display had been patented. More recently, a Carnegie Mellon survey of companies in the mid-1990s found fewer than half of innovations had been patented. Another survey of European companies found just 25 percent of process innovations and 36 per cent of product innovations were patented. Most innovations were protected using the advantages of a "first mover" or trade secrets.

As the great Victorian engineer Isembard Kingdom Brunel put it, patents are “almost an unmixed evil.”

The case for patents

Bruno von Pottelsberghe, an economist and Dean at Solvay Brussels School, Université Libre de Bruxelles, and Willem Broekaert, a Flemish bio-entrepreneur and managing partner of V-Bio Ventures.

There are two broad arguments for patents. One is based on the concept of “natural rights” that it is important, out of fairness to the individual inventor, to have a way to recognise and reward innovators. The second is a utilitarian theory which holds that society needs innovators to invest time and money, and the rewards of their work are far greater to society than to the individual – so some method of compensation is needed for the individual.

One case in point is Michelin’s invention of the rubber automobile tyre. The company prospered on its patents, of course; but the value to society has been far greater than Michelin’s own revenues, as an entire tyre industry developed around the invention and that in turn helped advance the automotive sector. None of that would have happened had Michelin not had a secure way to recover the costs of its R&D and market development work over many years. An oft-suggested alternative to private-sector patents is government R&D support; but governments are poor at picking market winners.

The critics of the system also miss an important point: that patents are a necessary but not sufficient condition for innovation. Merely because you can cite examples of patent-system failures does not mean you should scrap the system. In the same way, you would not argue governments should stop building roads merely because some drivers have accidents on them; roads are clearly important to society. Further, that some people abuse the system is not a reason to scrap it; higher-quality patent examination would help reduce such abuses.

There is also no credible evidence that costs outweigh benefits; the data to draw such a conclusion simply do not exist. While you may be able to measure patent expenses, you cannot measure all patent revenues and benefits; for instance, licensing deals are usually private and unreported. (And the Chinese example is inaccurate: the system there is growing fast and China is now one of the top half-dozen filers of patents with the World Intellectual Property Organisation.)

The importance of the patent system depends on the industry. Any sector that has long lead-times for development, or requires large sums for R&D, very much needs a strong patent system. A prime example is the pharmaceutical industry. A new drug can take 10 to 12 years to develop, and costs a few hundred million to a billion pounds. There is no way a private investor would take such a mammoth R&D risk without a guarantee of return, if technically successful. Without a patent system, any competitor could simply wait for the new drug to appear on the market, and then quickly reverse-engineer it and undercut the inventor’s prices because it was not carrying the accumulated development costs. Result: no new medicines.

The patent system has broader, positive effects on competition: it favours industrial diversity, rather than concentration. For instance, the beer industry is concentrated, with the top three companies controlling about half the global market. They do not do much patenting. By contrast, in the pharma sector, about 25 companies together control half the global market. They patent regularly. As an industry, pharma is more diversified and meritocratic.