Reverse incentive theory a powerful action for patents

By Ralph van Niekerk

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The Incentive Theory is the most popular explanation for why the patent system is a good thing for society. According to the Incentive Theory, innovating is inherently risky and expensive and so we need to provide incentives to encourage innovation.

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Without incentives, no profit-driven company would invest in research and development (R&D), knowing that the output of their R&D could immediately be copied by a company that had not incurred the cost of development.

The most dramatic illustration of this is in the pharmaceutical sector, where the total cost of developing a new product that obtains final approval from the US Food and Drug Administration runs into hundreds of millions of dollars. By comparison, the cost of copying a pharmaceutical product is almost negligible. Without incentives, it would be foolish to even attempt creating a new pharmaceutical product, and society would be worse off. Clearly, some form of incentive is needed for companies to invest huge amounts of time and money in R&D.

Various incentives

Incentives can take various forms, and one example is a prize awarded to anyone who achieves a stated goal. An excellent illustration of this is the Longitude Prize which was established by the British government in 1714 for a simple and practical method for the precise determination of a ship's longitude. This is a navigational problem that had plagued mariners ever since they set sail across the ocean. The prize was £20,000 - the equivalent of over £2m today - and the bulk was won by a humble clockmaker called John Harrison.

He came up with an ingenious chronometer that could remain accurate despite the rough conditions encountered at sea. More recent examples of prizes include the Ansari X prize, a space competition which awarded $10m to the first non-

governmental organisation that could launch a reusable manned spacecraft twice within two weeks. It was won by Burt Rutan in 2004 for his SpaceShipOne. Prizes have also been effectively used to encourage the development of treatments for orphan diseases that affect only a small number of people, or for diseases which are prevalent in only the poorest of countries.

The problem with providing incentives through prizes is that it requires advance knowledge of a particular problem or goal, which is not always the case with innovation. The world's most powerful innovation was probably penicillin, discovered by way of a famous accident by Alexander Fleming. Prizes are also expensive to administer and require panels of experts who often disagree as to how the prize money should be allocated. What is needed is a self-managed and self-directed system which can provide incentives for future innovations which are currently unknown.

Patent system

The best system society has for providing these incentives is the patent system. And it's nothing new. In 1787 the following clause was introduced into the US Constitution: "The Congress shall have power...to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries". Modern patent laws trace their history even further, as far back as the Venetian Statute of 1474, which awarded patents in the field of glass making.

While it is certainly true that patents do encourage companies and individuals to innovate, at least in some industry sectors, I would like to shed some light on another rationale for the patent system, one which is seldom mentioned but which I believe is almost as powerful. I call it the Reverse Incentive Theory. I recently came across an excellent example of this in my practice.

My client had developed and patented a mining accessory which was enjoying great commercial success in South Africa. His competitor tried to imitate the accessory and my client promptly sued for patent infringement. The matter settled on the basis that the competitor agreed not to infringe the patent for its remaining term. So far so good from my client's perspective. He continued to enjoy the benefits of being the only supplier of the patented accessory.

A few months went by and I got a call from my clearly flustered client. The competitor was at it again, except this time had completely re-designed the accessory, changed the way it worked and made it lighter, stronger and cheaper. What could be done? I had bad news for my client: the new product was sufficiently different that it didn't utilise the original inventive concept protected by the patent.

There was nothing we could do to stop the competitor from selling the improved product. My client lost market share as a result, and to make up he is now expanding his business in other areas and has invented and patented new products.

Up-front incentive

The interesting thing about this case is that my client's patent did not only provide an up-front incentive for him to be innovative, as predicted by the traditional Incentive Theory. It also forced his competitor to be innovative. Faced with the prospect of being completely shut out of the market and unable to copy my client's accessory, the competitor went back to the drawing board, did its own R&D, and came up with a product that was not only different but better.

This case made me realise that a patent held by one entity can encourage other entities in the marketplace to be innovative, thereby acting as a reverse incentive. The reverse incentive is quite powerful in action. When you think about individuals and companies, only a small percentage are naturally innovative. The rest of us are followers, and as followers the natural thing to do is to copy the leaders. In the case of the reverse incentive, patents held by the leaders force the followers to do something that is uncomfortable for them.

By removing the easy option to copy the leaders, it forces those who can make the adjustment to become leaders themselves. And the more leaders we have in our economy, the more innovation and progress we all enjoy.

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