

## Seeing the light over innovation

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By introducing compulsory, non-market-driven tools in the private sector, state agencies risk stifling innovation, writes Meir Pugatch.

It would be hard to find anyone who actively opposes the concept of innovation. Doing so would be a bit like saying you are against motherhood and apple pie, such is the positive implication of the term. Nowadays, both developed and developing economies alike recognise the importance and impact of innovation on their national economic performance, global competitiveness and overall well-being. In the age of the 'knowledge economy' there has undoubtedly been intensifying interest in identifying the desired set of policy tools needed to encourage innovation.

Innovation is, however, a complex concept, and takes place in various shapes and forms. It is a social and economic phenomenon as much as it is a technological one.

The study of innovation is constantly evolving, adding to our knowledge and understanding of how innovation takes place and how it may be improved or enhanced. Equally challenging is the attempt to understand further the relationship between knowledge and innovation. For example, how does the creation and use of knowledge lead to more innovation? And to what extent do new innovations increase our knowledge? In other words, innovation is such a complex and deep concept that it would be impossible and even presumptuous to try to argue that one is able to predict and control the process.

Despite its complexity, however, one can still identify some governing patterns that underlie the innovation process.

First, technological innovation cannot be characterised in terms of 'good' or 'bad' innovation. In some current public discussions there is a tendency to argue that incremental (improving) innovation contributes less to society than radical (new) innovation and, as such, is less desirable. In other circles, innovation that focuses on the components of a product is afforded a higher status than innovation concerning the manner in which such products are introduced to the market and to the public.

### **Hard to measure**

In real life, though, the contribution of innovation to society cannot be categorised in such a simplistic way. Incremental improvements can have effects as significant as radical innovation, while innovations concerning processes surrounding a product may be as essential to the market and to the public as the original product innovation itself.

Second, technological innovation cannot be dictated or anticipated via top-down processes. History suggests that even the brightest minds cannot be expected to anticipate the manner in which the nature of innovation will evolve and the way in which demand for such innovation will manifest itself. The case of the personal computer is just one example. Until the late 1970s, it was the general consensus at all levels within IBM that the future of computing would be dominated by the demand for computer mainframes. It is reported that in 1977 Ken Olsen, president, chairman and founder of Digital Equipment Corp, argued: "There is no reason for any individual to have a computer in their home."

However, the market experienced a dramatic surge in household demand for personal computers.

In just five years, the annual sales volume of personal computers matched sales of the mainframe market, which had been around for more than 30 years. Despite its failure to predict demand, and contrary to other companies, IBM did produce its own personal computer and, by 1983, dominated the market. When asked why IBM chose to take this path, executives argued: "We realised that everything we'd assumed, everything we were so absolutely certain of, was suddenly being thrown into a cocked hat, and that we had to go out and organise ourselves to take advantage of a development we knew couldn't happen but which did happen."

### **Opportunistic innovation**

Certainly, the professional pursuit of innovation underpins the ability to introduce new products to the market. But, equally important is the fact that innovation can be unpredictable, influenced by external events and ultimately nurtured by the ability of entrepreneurs to identify and seize opportunities.

Technological innovation is deeply rooted in market forces. It is the incentives and rewards that the market provides that drives innovators to make the risky, time-consuming and costly investments needed to bring new products to the market. The innovation process is driven by the voluntary will of the innovator to create and use knowledge rather than any form of compulsion. The voluntary, market-driven efforts of innovators form a bottom-up process.

If we accept that technological innovation is based on these voluntary, market-driven efforts, certain mechanisms need to be in place. One such mechanism is the existence of intellectual property rights (IPRs), which provide the incentives both for the creation and the exchange of knowledge for the sake of promoting technological innovation.

IPRs function as a safety net that allows the process of knowledge creation to take place, not least in the phases that precede the introduction of these technologies to the market. IPRs also allow entities to exchange and share their knowledge assets in a manner that guarantees their expected share of market reward from a given innovation.

Nevertheless, it seems that a perception is emerging in some segments of the policy-making community that the use of compulsory, non-market-driven tools in the private sector will lead to greater innovative output, compared with the existing models of innovation that are based on voluntary market-driven efforts. With regard to the compulsory aspect of the above model, we can broadly define the term 'compulsory' as the act by a national or supra-national authority of forcing the innovator to give up (in total or in part) proprietary knowledge assets, be they technology, knowledge, know-how or trade secrets.

Compulsory practices can be based either on the specific revocation of the legal rights of the innovator to prevent others from free-riding his proprietary knowledge asset without his permission, or by forcing the innovator to actively disclose all the particulars relevant to the use of knowledge assets.

In turn, efforts have been made to translate this perception into concrete actions, both at a strategic as well as at an operational level.

For example, Microsoft's high-profile anti-trust case in Europe is one instance in which the compulsory use of knowledge assets has been invoked. In this case, the European Commission's competition authority (DG COMP) argued that the refusal by Microsoft to supply interoperability information to its competitors, in order to allow them to offer their own work group server operating systems to users of Windows PCs and servers, qualified as an abuse of dominant position under the EC Treaty.

#### **Stifling invention**

In another recent high-profile intervention, the European Commission launched a sectoral enquiry into pharmaceutical markets in the EU in response to a perceived reduction in the number of new products being brought to market. In particular, the inquiry has set out to examine whether agreements between pharmaceutical companies have blocked or led to delays in market entry and whether companies have created artificial barriers to entry for innovative products through the 'misuse' of patent rights, for example.

Although in this case the remedies have not been yet decided, the starting point of this enquiry is based on the assumption that the current innovation model in the pharmaceutical industry is in need of repair. In particular, the belief is that innovation has not been best served by patenting or the exercise of patents and that, as a result, investment in R&D, innovation and consumer choice have been limited.

But in terms of its outcomes and implications, supporting a compulsory, non-market-driven model to promote innovation could prove problematic. First, it is not backed up by theoretical or empirical underpinnings. Second, it is more likely that the exercise of this model is based on political considerations rather than a rational discussion of its merits. Third, it would seem that advocates of this model are suggesting turning the process on its head – for example, they advocate implementing the concept first in the hope and anticipation that it will work.

Certainly experimentation with different models of innovation is not something that should be prohibited, as long as these experiments are undertaken at the expense and efforts of those who wish to pursue them. In this case, alternative models are being touted not as complementary innovation models but as replacements to the long-established innovation process. In other words, the experimentation is taking place at the possible expense of innovation itself and, as a consequence, at the expense of the consumer.

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