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Teece's Competing Through Innovation

Herbert Hovenkamp*

DAVID J. TEECE, *COMPETING THROUGH INNOVATION: TECHNOLOGICAL STRATEGIES AND ANTITRUST POLICIES*. Cheltenham, UK: Edward Elgar (2013) (484 + xxxi pp.)

This book collects the scholarly articles written by David Teece and some co-authors over a period of roughly two decades, although most are since 2000. The topics relate to innovation and competition policy and the range is broad, including market definition, the relationship between antitrust policy and intellectual property rights, and application of antitrust principles to innovation intensive markets. The articles are reproduced in full, with all notes and figures intact, and even the original headings and pagination for the reader's convenience. The book's fundamental theme, as expressed in the introduction, is that competition through innovation is fundamentally a different thing than price and output competition. As a result, traditional price theory and industrial organization often serves us poorly. The sentiments are more than vaguely Schumpeterian.

One principle that pervades Teece's work is that innovation must be facilitated by means of sufficient private rewards, and in our current system the rewards are too low. This is true largely because legal regimes such as antitrust engage in excessive *ex post* restriction on the deployment of innovation, particularly on the use of intellectual property rights, and even more particularly, patents. Teece gives as one example an expansive doctrine of patent "misuse," which historically condemned patent practices that had competitively harmless explanations, such as tying or royalties on total sales. These practices could not realistically serve to expand the patentee's market power. The ordinary remedy in "misuse" cases, which is that the patent becomes unenforceable until the misuse is terminated, decouples legal doctrine from facilitation of innovation by limiting the value of patents in situations where no harm is done to the infringement defendant or, typically, anyone else. Today, of course, successful

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misuse claims are a rarity, as is condemnation of royalties on total sales. The one relic that remains and needs to be overturned is continued application of the *Brulotte* rule disallowing agreements that require royalty or royalty-like payments after a patent's expiration. Even there, running foul of *Brulotte* is usually a result of careless drafting of license agreements, and should not often hinder innovation.

Another theme that Teece and co-authors develop is that antitrust law's traditional tools for measuring market power often go awry when we are talking about high technology markets. This is so for a number of reasons: high fixed costs, the relation between high margins and incentives, and thus the reduced significance of high margins in situations of rapid technological turnover. Also important are network effects, which often serve to make a single platform more efficient than multiple competing platforms, but the single platform is then associated with the evils of monopoly. Additionally, policy makers assessing market power often fail to distinguish between monopoly returns and what Teece terms "Schumpeterian rents," which are the short run returns necessary to facilitate technological turnover. Quite aside from the phenomenon of high fixed costs, the highly innovative firm requires a constant stream of revenue above cost in order to permit continued research and development.

By the same token, Teece believes that the threat of "monopolistic" conduct in such markets – meaning that the dominant firm locks in its own technology, excludes rival technologies, and uses its dominance to suppress output – is relatively unlikely because technology is so difficult to control.

In an interesting piece on innovation in the context of networks and multiple innovators, co-authored with Deepak Somaya and Simon Wakeman, Teece explores the implications of individual firm decisions whether to invent for themselves or purchase their innovations from others. In markets characterized by multiple competing innovators, each of which may have advantages in its own domain, the result will be a great deal of cross-licensing. As Teece also suggests, this is really little more than a corollary of Coase's article on *The Nature of the Firm*. If one firm has internal production and development advantages in hardware while another firm has it in software, the firm who needs both in order

to market its product will produce in the market where it has a comparative advantage, and license from others in markets where it has a comparative disadvantage. The result will be cross licensing. Multiply this out over markets that have numerous innovators or inputs and the resulting phenomenon is widespread cross licensing and its common network companion: standard setting. The story is more complex, they note, in markets that have clear leaders. If one firm is far out in front of the others it may be advantageous for it to produce more internally and license less. If it looks inward too much, however, outside firms will catch up and even surpass it. The leader may then find itself technologically isolated. They give as an example Research in Motion, which developed the Blackberry as a result of its own technological breakthroughs in mobile email technology. The eventual result of going it alone excessively was that rival smartphone technologies caught up and surpassed the Blackberry.

On the patent system, Teece's work generally displays a level of optimism that puts him in the minority among academics today, although his views may be more in accord with many judges on the United States Federal Circuit Court of Appeals. He believes that the value of the patent system in promoting innovation has generally been underappreciated, while its potential harms and shortcomings have been exaggerated. The literature on narrow patenting and patent thickets is one good example. Teece and his co-authors acknowledge the problems posed by large scale patenting, overly narrow and ambiguous patents, anticommons problems, and royalty stacking. However, they believe that the literature discussing these problems has not been sensitive to the offsetting problem of supporting innovation in markets where inventions come from multiple innovators and patents serve to commoditize innovations in markets that are subject to numerous "make or buy" decisions regarding innovation. In such markets firms produce, purchase, or sell their innovations, permitting each participant to optimize over their own capabilities, and the patent system serves the important purpose of creating tradable units of innovation.

That argument may prove too much, however. If firms in a multi-innovator market really wished to facilitate internal innovation where it is cost-justified, and exchange where it is not, they would have a strong interest in articulating the exchangeable units in such a way that property rights were clearly defined,

ownership was unambiguous, and trading was confined to issues of price and technological suitability. In fact, however, that would be a much different situation than the one we actually have. Particularly in information technologies, patents are ambiguously drafted in ways that are calculated to exaggerate the inventor's achievements. Patents are so numerous in some markets, and searching and interpreting them is so costly that the transaction costs of exchange often induce firms to develop without licensing. Indeed, the rights may be so poorly defined that the "make or buy" decision is itself highly ambiguous, with many firms operating under the impression that they are "making," quite innocently, when others believe that they should be buying because their internally developed technology is later found to infringe on the technology of others.

Or to put it more bluntly, a well functioning system of tradable innovation rights would require far lower information and related transaction costs than the system that we actually have. To be sure, the patent itself is certainly a useful "certificate" describing a unit of innovation. One problem with maintain innovation as trade secrets is that, while trade secrets may be effective ways of protecting one's internal innovations from appropriation by others, trade secrets themselves are often too inchoate as certificates of innovation to be readily tradable. Patents can be readily assigned; they can be licensed, both exclusively and nonexclusively. Aggregation of large numbers of them present few problems when they are treated as personal property for purposes of exchange. Everything they stand for is described on a typically small document. Where the patent system fails us, however, especially in information technologies, is that too often these certificates are worthless because what they describe is not really a worthwhile innovation, because interpreting them is very costly, as is determining whether they are worth purchasing. Recent decisions placing a value on FRAND-encumbered patents suggest a ratio between patentee's claimed value and judicially determined value exceeding 2000-to-1. This is very far from a well functioning market.

This may be mainly a collective action problem. As a group, the manufacturers of cellphones might profit from a much smaller number of clearer patents, providing little dispute about who owns what and who needs what, and

thus facilitating exchange. In such a setting make or buy decisions would be optimal and firms could have some confidence that they were choosing the value maximizing course. Individually, however, developers of technology have a strong incentive to overstate and create ambiguity which may serve to enlarge the value of what they have down the road. Here, the unfortunate reality may be that our patent system, with its relentless focus on individual appropriation, may be serving us poorly by undermining rather than facilitating efficient make or buy decision making.

Teece (along with Thomas M. Jorde and J. Gregory Sidak) also argue that mandatory unbundling in telecommunications, which requires incumbent telephone carriers to make their elements available to rivals at administered prices, would have adverse consequences in both the incumbent and the competitive markets. On the incumbent side, mandatory unbundling would diminish the incentive to innovate by reducing the returns to each incumbent's element to prices normally associated with public utility regulation. On the competitive side, the ability to interconnect freely would reduce the incentive of competitive exchange carriers to develop these elements for themselves. Why should they, when they are effectively entitled to connect into the incumbent's technology at below market level prices? The result is to slow innovation at both ends.

This collection of articles is provocative, often controversial, and well worth reading. They provide a great deal to think about, even for the reader who ultimately may not agree with everything.