

New Economy:

Antitrust Review of Merger Analysis Using Innovation Markets

Kristen Riemenschneider

Summary

Traditional methods of antitrust merger review have limited capabilities to review anticompetitive merger activity in high-technology markets. The “innovation market” approach introduced by the Antitrust Guidelines for the Licensing of Intellectual Property (“IP Guidelines”) is a potentially powerful tool that the antitrust enforcement agencies may use to review horizontal mergers in high-technology markets. Commentators, however, strongly disagree on the role that innovation markets have – and should – play in merger review.

This paper posits that the enforcement agencies should continue to use the “innovation market” concept in reviewing horizontal mergers in high-technology markets, but that the agencies must revise and clarify their approach to eliminate costly uncertainties in the merger process. First, the agencies should revise the substantive definition of the “innovation market,” and should restrict its use to future goods markets. The agencies should subsequently promulgate new Horizontal Merger Guidelines, new IP Guidelines, or both, to clarify their position.

Table of Contents

Introduction	3
1. Traditional Antitrust Law Has Limited Capabilities to Review Anticompetitive Activity in High Technology Markets	5
2. The “Innovation Market” Approach Is a Potential Tool to Address Antitrust Concerns in High Technology Markets.....	9
2.1. Origins of the “Innovation Market” Approach	9
2.2. Commentators Strongly Disagree on the Role of Innovation Markets in Horizontal Merger Review	12
2.3. The Agencies’ Application of Innovation Markets to Merger Review Has Been Sparse and Unhelpful	16
3. The Enforcement Agencies Should Continue to Use Innovation Markets in High Technology Market Merger Review, But Should Refine and Clarify Their Approach	20
3.1. The Agencies Should Respond to Commentators’ Criticisms and Revise the Substantive Definition of “Innovation Markets”	20
3.2. The Agencies Should Also Promulgate New Horizontal Merger Guidelines and IP Guidelines Clarifying Their Position with Respect to Innovation Markets.	24
Conclusion.....	27

Introduction

The U.S. Department of Justice (DOJ) and the Federal Trade Commission (FTC) have historically reviewed merger proposals based on their potential anticompetitive effects in current markets for existing goods and services. The agencies' goal is to determine which mergers, if completed, would result in market conditions that could allow the resultant firm either to collude with other firms in the market, or act unilaterally to raise prices in the market. Market conditions that allow firms to raise prices are seen as detracting from consumer welfare, and the main focus of the antitrust laws is to prevent these conditions from occurring. While the agencies do also consider non-price competitive factors, such as quality of the good or service, these are clearly secondary considerations.

As intellectual property and technology have become increasingly important to modern society, the enforcement goals of the antitrust agencies have similarly evolved; the agencies have adopted the now-prevalent theory that just as consumer welfare benefits from low prices, it benefits as much – if not more – by increased technological innovation. While IP and antitrust have traditionally been considered antithetical doctrines, the antitrust agencies' new focus on innovation has conceptually brought the two into alignment.¹ The shift in thinking has been quick and pervasive; one commentator has said that “[the antitrust] authorities’ attempts to regulate innovation is perhaps the most important development in competition law this decade.”²

¹ Lawrence B. Landman, *Innovation and the Structure of Competition*, 81 J. PAT. & TRADEMARK OFF. SOC'Y 728, 729 (1999); *see also* Atari Games Corp. v. Nintendo of America, 897 F.2d 1572 (Fed. Cir. 1990); Antitrust Guidelines for the Licensing of Intellectual Property § 1.0 [hereinafter “IP Guidelines”].

² Landman, *supra* note 1, at 729.

As a result of their new focus, the enforcement agencies have adopted new policies intended to preserve the market conditions that promote innovation. In 1995, the DOJ and the FTC jointly released the Antitrust Guidelines for the Licensing of Intellectual Property (“IP Guidelines”). While antitrust analysis traditionally focused on market power in existing markets in goods or services, the IP Guidelines state that the agencies will also determine whether firms exercise market power in “technology markets” and “innovation markets.”³ Technology markets are markets in which the saleable good is the ownership and/or licensing of intellectual property,⁴ and like traditional goods and services markets, technology markets can be used with the objective of keeping prices – in these cases, IP purchase or licensing fees – low.

The innovation market is a departure from traditional market analysis; it attempts to define the competitive market for goods that do not yet exist. Rather than basing the antitrust analysis on a market definition of goods or services, the agencies can base their analysis on companies’ respective abilities and incentives to innovate. While the technology market has gained widespread acceptance, innovation markets have been considerably more controversial. This paper responds to question B.2 of the Antitrust Modernization Commission’s Request for Public Comment on the “New Economy,”⁵ but specifically addresses the use of innovation markets in the merger context. In Part I of this paper I discuss the perceived limitations of traditional antitrust law with respect to high-technology industries. In Part II, I discuss the history of the innovation market concept, how it is perceived by the antitrust and IP communities, and how the

³ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 3.2 (1995) [hereinafter “IP Guidelines”].

⁴ *Id.* § 3.2.2.

⁵ “Should antitrust law be concerned with ‘innovation markets’? If so, how should antitrust enforcers analyze innovation markets? How often are ‘innovation markets’ analyzed in antitrust enforcement?”

enforcement agencies have used the innovation market context in merger review. Finally, in Part III, I argue that antitrust law should continue to be concerned with innovation markets, and provide a suggested approach for the antitrust agencies to adopt in using innovation market analysis in the merger context.

1. Traditional Antitrust Law Has Limited Capabilities to Review Anticompetitive Activity in High Technology Markets

Traditional antitrust economic analysis is based on the perfect competition model. In a perfect market, initial investments are treated as sunk costs and the market will constrain sellers so that they are only able to sell their goods and services at marginal cost; when a firm gains power in the market, such as through monopoly power, the firm is able to sell at prices higher than marginal cost. The antitrust laws do not make the presence of market power or monopoly power illegal; rather, the laws target specified behaviors that are used to gain, preserve, or exercise this power over the market.

One example of traditionally anticompetitive behavior is collusion. Antitrust theory holds agreements between competitors, such as agreements to fix prices, divide markets, or restrict output, to be *per se* anticompetitive, and therefore illegal under section 1 of the Sherman Act.⁶ Collusion is understood to be anticompetitive because it reduces the firms' incentives to compete on price or other competitive factors, and as a result, consumers end up paying higher prices than they would in a perfectly competitive market. By this theory, collusion also reduces firms' incentives to innovate and create new products, and so firms engaged in collusive behavior will be slower to introduce and adopt new technologies.

⁶ 15 U.S.C. § 1.

It is difficult, however, to make the traditional economic model apply to high technology markets. In high technology markets the initial investment cannot be treated as a sunk cost, ignored in determining the price of the final saleable good. One common example is the pharmaceutical industry: firms must invest significant resources to develop a new drug and bring it to market, but expend minimal resources to replicate the drug. Another example is the software industry: software companies spend years developing new applications, but the replication cost of a CD or a software download is minimal. Those industries could not feasibly operate on an economic model that requires them to label up-front investments as sunk costs and then to sell at marginal cost. It is quite simply too expensive.⁷

Because high-technology markets present a unique economic model, perhaps the traditional antitrust rules should not apply. Many commentators have argued that collusion between competitors in high technology industries is procompetitive, and that antitrust should play less of a policing role in these markets. The most famous proponent of the benefits of collusion is Joseph Schumpeter, who argued that innovation is maximized when one firm holds all of the creative power because that firm is in the best position to exploit that creative power efficiently.⁸ Steady progress or innovation will occur within the firm, and occasionally an outsider will create such a significantly new technology – in a “gale of creative destruction”⁹ – to completely displace the existing firm.

⁷ Richard J. Gilbert & Willard K. Tom, *Is Innovation King at the Antitrust Agencies? The Intellectual Property Guidelines Five Years Later*, 69 Antitrust L.J. 43, 46 (2001).

⁸ JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM AND DEMOCRACY 81-106 (1942).

⁹ *Id.*

As a practical matter, nobody has been able to prove empirically which model, traditional or Schumpeterian, is actually more conducive to innovation. Richard Gilbert has argued that there is a large body of economic evidence proving a positive correlation between market competition and innovation, but notes that there is no proof of causation.¹⁰ Despite widespread disagreement over the maximal market conditions for innovation, the antitrust agencies have adopted the traditional view and continue to apply traditional economic theory to high technology firms.

Mergers are analyzed under § 7 of the Clayton Act,¹¹ and over the years, a fairly straightforward process for this analysis has emerged: (1) identify the relevant shared markets of the merging parties; (2) for each shared market, determine the participants, and assign current and post-merger market shares to each; (3) if the merger will create a threshold level of concentration in the relevant markets, presume that the merger is anticompetitive and therefore unlawful under the Clayton Act; and (4) if the merger is presumed anticompetitive, determine whether the merging parties have rebutted the presumption by proving sufficient procompetitive effects of the merger. This analysis recognizes that mergers may create procompetitive effects, and so they are analyzed under the “rule of reason.”

Conceptually, challenged mergers can be classified as one of three types:

- 1) Mergers that would reduce competition in an existing market;
- 2) Mergers that would reduce potential competition in an existing market; and

¹⁰ Richard J. Gilbert, *New Antitrust Laws for the “New Economy”?*, Testimony before the Antitrust Modernization Commission 8 (Nov. 8, 2005) (transcript available at http://www.amc.gov/commission_hearings/pdf/Statement_Gilbert.pdf).

¹¹ 15 U.S.C. § 18 (Clayton Act § 7).

- 3) Mergers that would reduce competition in a market that does not yet exist, but is predicted to exist in the future.¹²

The first two categories of challenged mergers are dealt with on a regular basis, and their review is widely accepted. Historically, if two oil companies wanted to merge, their respective shares in the oil market were determined, and the existing oil market was the subject of the competitive analysis: would the merger reduce competition in the oil market? As economic theory progressed, antitrust recognized in the “potential competitor doctrine” that companies on the supply side, but not actually in the market, could still constrain prices in the market. For example, in *FTC v. Proctor & Gamble Co.*¹³ the Court cited the potential competitor doctrine in holding that a proposed merger between Proctor & Gamble and Clorox was properly enjoined under § 7 of the Clayton Act. Although Proctor & Gamble was not in the bleach market at the time of the proposed merger, the firms in the bleach market – including Clorox – perceived it as a likely entrant, and its existence at the edge of the market influenced each firm in the market’s prediction of market behavior. By allowing Proctor & Gamble to merge with Clorox, and removing this threat of entry, the market would be largely unconstrained. This, in turn, would have created serious risks of anticompetitive behavior, and a decrease in consumer welfare. But neither traditional antitrust review of existing goods markets, nor the potential competitor doctrine, is sufficient to review a merger in nascent goods markets.

¹² See Gilbert & Tom, *supra* note 7, at 49.

¹³ 386 U.S. 568 (1967).

2. The “Innovation Market” Approach Is a Potential Tool to Address Antitrust Concerns in High Technology Markets

2.1. *Origins of the “Innovation Market” Approach*

The innovation market concept attempts to identify mergers that would reduce competition in a market that does not yet exist, but is predicted to exist in the future. Take, for example, two drug companies who are competing against each other to bring a new cancer drug to market. Neither company is currently able to produce the drug, and no other pharmaceutical firms are engaged in this type of research. If the two companies announce plans to merge, intuitively it seems that the merger proposal should warrant some sort of review. If competition to produce the drug is eliminated, the merged entity loses some of the incentive to bring the drug to market quickly, and has an increased ability to raise prices down the road when the drug is offered for sale.¹⁴ These are the same type of conditions that give rise to merger review in current markets. But under the first two types of analysis review of this merger would not be possible, because there is no existing market for the good.¹⁵

¹⁴ Thomas N. Dahdouh, *The Shape of Things to Come: Innovation Market Analysis in Merger Cases*, 64 ANTITRUST L.J. 405, 424-27 (1996).

¹⁵ The Horizontal Merger Guidelines do make some attempt to address firms not currently in the market. Once the relevant market has been identified, participants may include “uncommitted entrants” – firms not currently producing or selling the good. U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES § 1.32 (1992) (as amended in 1997). To be considered an uncommitted entrant, a firm’s supply response “must be likely to occur within one year and without the expenditure of significant sunk costs of entry and exit,” and “[i]f a firm has the technological capability to achieve such an uncommitted supply response, but likely would not, that firm will not be considered to be a market participant.” *Id.* The Horizontal Merger Guidelines also provide that supply responses occurring within two years, or that require significant sunk costs of entry and exit, are to be considered when analyzing barriers to entry. *Id.* § 3.2. However, neither of these provisions is particularly helpful, given that the Horizontal Merger Guidelines’s relevant market definition is based on the production and sale of current goods – when there is no production or sale of a good, there is no relevant market, and the enforcement agency would not continue to the identification of participants or barriers to entry.

The innovation market concept is intended to solve this problem by giving the antitrust agencies a basis for evaluating the competitive consequences of these types of restructurings. The National Cooperative Research and Production Act (NCRPA)¹⁶ first introduced the concept of “innovation markets,” though not by that name.¹⁷ In the NCRPA, Congress instructed courts to analyze the anticompetitive effect of joint ventures on “properly defined, relevant research, development . . . markets.”¹⁸ The IP Guidelines introduce the term “innovation market,” and define it as “the research and development directed to particular new or improved goods or processes, and the close substitutes for that research and development.” As Davis notes, an innovation market is neither a product market, a service market, nor technology market.¹⁹ “In an innovation market” no one buys or sells anything; rather, one prepares to sell innovative products at some future time.”²⁰ Because firms expand in not always predictable ways, and therefore could potentially be competitors in some type of future innovation (for example, firms previously in the railroad business now compete in telecommunications) the agencies restrict their definition of “innovation markets” to those in which “the relevant research and development can be associated with specialized assets or characteristics of specific firms.”²¹

¹⁶ National Cooperative Research and Production Act of 1993, 15 U.S.C. §§4301-05 (1993) (formerly National Cooperative Research and Production Act, 15 U.S.C. §§4301-05 (1984)).

¹⁷ Congress established the National Cooperative Research and Production Act to lower antitrust liability for certain cooperative ventures between horizontal competitors. Joint ventures between firms – business partnerships created for limited purposes and limited duration, *see, e.g.* BLACK'S LAW DICTIONARY (8th ed. 2004), “joint venture” – should be analyzed under the “rule of reason.”

¹⁸ 15 U.S.C. § 4302.

¹⁹ Ronald W. Davis, *Innovation Markets and Merger Enforcement: Current Practice in Perspective*, 71 ANTITRUST L.J. 677, 679 (2003); *see also* Landman, *supra* note 1, at 730.

²⁰ *Id.*

²¹ Richard J. Gilbert & Steven C. Sunshine, *Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets*, 63 ANTITRUST L.J. 569 (1994).

While Davis’s statement is a helpful conceptual definition, it is not entirely accurate. Innovation markets include R&D directed to a particular product and close substitutes for the R&D directed to that product; the Guidelines define “close substitutes” as “research and development efforts, technologies, and goods that significantly constrain the exercise of market power with respect to the relevant research and development, for example by limiting the ability and incentive of a hypothetical monopolist to retard the pace of research and development.” This means that R&D directed to a particular product may not only compete with other R&D directed towards that product, but that the development efforts may also compete in existing goods or services markets.

The IP Guidelines do not apply the innovation market concept to anything other than the licensing of IP. However, in their landmark article *Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets*,²² Richard Gilbert and Steven Sunshine explained how the innovation market should be applied to traditional merger review. Under their rubric, merger review of innovation markets mirrors the traditional analysis, requiring identification of the market and its participants, the participants’ respective market shares, and the anticipated pro and anticompetitive effects of the merger.²³ The key difference between traditional and innovation market analysis arises in the definition of the market. In traditional market analysis, the scope of a particular product’s market is determined by establishing which goods constrain the price of that product – in other words, how substitutable other goods are for that product. To define the innovation market, Gilbert and Sunshine suggest that there is a three-step

²² *Id.*

²³ More specifically, Gilbert and Sunshine’s five steps are: (1) define the product market; (2) define the geographic market; (3) determine the anticompetitive effects; (4) examine barriers to entry; and (5) examine efficiencies created by the merger. *Id.* at 595-597.

subprocess: (a) identify the set of overlapping R&D activities; (b) identify specialized R&D assets or technical expertise in the overlap area; and (c) identify close substitutes.

2.2. Commentators Strongly Disagree on the Role of Innovation Markets in Horizontal Merger Review

Despite the apparent benefit of the innovation market concept as a tool in merger review, commentators have articulated numerous concerns and objections.²⁴ At an abstract level, innovation markets are strange. Antitrust law is typically concerned with price or proxies for price – the goal has been to lower consumer costs in acquiring a particular good or service. The agencies engage in merger review because of the historic belief that mergers may result in collusion or increased market dominance, of which either would result in higher prices to consumers.

By contrast, at bottom of the innovation market theory is the recognition that firms increasingly compete not just in price, but in technological advancements.²⁵ And innovation effects cannot be measured in the same way as price – how do you determine whether a merger is likely to reduce or retard innovation?²⁶ As discussed above, there is little consensus as to the type of market structure that best facilitates innovation.²⁷ To many, it makes sense to accept the traditional market theory, and accept that innovation is maximized when you have many companies competing head-to-head. For example,

²⁴ See generally Richard T. Rapp, *The Misapplication of the Innovation Market Approach to Merger Analysis*, 64 ANTITRUST L.J. 19 (1995).

²⁵ *Id.*; Willard K. Tom & Joshua A. Newberg, *Antitrust & Intellectual Property: From Separate Spheres to Unified Field*, 66 Antitrust L.J. 167, 222-23 (1997).

²⁶ Dahdoun, *supra* note 14, at 422-23.

²⁷ SCHUMPETER, *supra* note 8; Davis, *supra* note 19, at 681 (citing Kattan, 21 CAN.-U.S. L.J. 115, 117 (1995)).

DeSanti and Yao have written that the importance of preserving innovation is the benefits that arise from having multiple paths towards the same goal.²⁸

But creating a preference for markets in which several firms engage in innovation, i.e. the non-Schumpeterian model, creates an interesting, if unexpected, result. While traditional market analysis would find a reduction in production costs to be procompetitive, in the innovation market context, we generally want to maximize – or at least increase – input. In other words, the goal of innovation market analysis is to preserve a market structure with as many different paths to innovation as possible.²⁹ But as a theoretical matter, increasing the number of paths to innovation would lead to a corresponding decrease in economic efficiency, because more resources will be expended to reach the same result. Higher input costs result in higher prices to consumers – and therefore decrease consumer welfare.

It is for this reason that many commentators have argued that collusion is procompetitive in innovation markets. Collusion allows firms to combine resources, eliminate duplicative efforts, increase “synergies,” and ultimately reduce cost. Theoretically, these cost savings are passed on to consumers, so the merger is said to be procompetitive. Using innovation market analysis to prevent this type of collusion would

²⁸ Gilbert & Tom, *supra* note 7, at 59; Dennis A. Yao & Susan S. DeSanti, *Innovation Issues Under the 1992 Merger Guidelines*, 61 ANTITRUST L.J. 505, 510 (1993).

²⁹ As Davis has remarked:

Antitrust . . . aims to promote productive efficiency; in other words, for any given level of output, the less input, the better. Seen in that context, an enforcement program intended to protect “innovation markets” is an apparent anomaly, in that such a program focuses on input rather than output, and prefers more input to less input – that is, more parallel lines of research to fewer lines of research, and more resources devoted to R&D rather than fewer resources – at least within some range.

Davis, *supra* note 19, at 680-81.

then interfere with socially beneficial mergers, and consumers would pay higher prices than necessary.³⁰

Even accepting the benefit of an innovation market concept, there is also disagreement about how the innovation market should be determined. One primary question is whether R&D is the appropriate proxy or measurement of innovation. It is unclear economically what level of R&D provides optimal innovation: Is more R&D always better?³¹ Is there a finite limit, where increasing R&D results in diminishing returns? Furthermore, R&D efforts are typically protected as trade secrets, so it may be difficult to determine which companies are engaging in R&D sufficiently relevant to be included in the innovation market.³² And even if you can determine all of the relevant R&D to include in the innovation market, today's R&D does not necessarily tell you anything about how it will affect competition for a particular good or service in the future.³³

On a more pragmatic level, some commentators have argued that innovation markets fall outside the legal strictures of the Clayton Act.³⁴ Section 7 prohibits mergers and acquisitions “where in any line of commerce or in any activity affecting commerce in any section of the country, the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly.”³⁵ These commentators have pointed to the “line of commerce” and “affecting commerce” language, arguing that it's not possible for

³⁰ Dahdouh, *supra* note 14, at 409; John J. Flynn, *Antitrust Policy, Innovation Efficiencies, and the Suppression of Technology*, 66 *Antitrust L.J.* 487, 498 (1998).

³¹ Davis, *supra* note 19, at 681.

³² Dahdouh, *supra* note 14, at 420 n. 70. Dahdouh seems to be a bit conflicted, however: early in his article he writes that it is not difficult to determine types of research firms are working on, but later in his article he writes that entry into R&D could be difficult because of secrecy.

³³ John Temple Lang, *European Community Antitrust Law: Innovation Markets and High Technology Industries*, 20 *Fordham Int'l L. J.* 717, 763 (1997).

³⁴ Robert J. Hoerner, *Innovation Markets: New Wine in Old Bottles?*, 64 *ANTITRUST L.J.* 49 (1995).

³⁵ 15 U.S.C. § 18 (Clayton Act § 7).

a non-existent product in a non-existent market to affect commerce.³⁶ Others, such as Dahdouh³⁷ and Gilbert and Sunshine,³⁸ have asserted that this legal analysis is flawed, and it remains a contested issue, as neither the agencies, nor the courts, nor Congress, have made a decisive judgment on this issue.

Finally, other commentators think that the concept is simply repetitive, and detrimental to traditional analysis. In their view, the potential competition doctrine addresses the concerns associated with innovation markets already, and attempts to use innovation markets takes the focus away from potential competition theory.³⁹ While Gilbert and Sunshine posit their five-step analysis as the most effective way of implementing an innovation market scheme, they do allow in their last paragraph that it may be possible to incorporate innovation into traditional analysis by relying on the potential competitor doctrine, but nobody seems to have developed this method of analysis.

Gilbert and Sunshine have continued to defend the innovation market concept. They argue that traditional market analysis is static, and not a useful proxy for determining actual market behavior in the future. By contrast, innovation markets are future-oriented – not a static approach to the market, but an attempt to realistically assess the situation.⁴⁰ Innovation is hugely important to markets and has superseded price as the driving force of competition,⁴¹ so it is important to consider innovation when evaluating the legality of a merger. Furthermore, once a merger in an innovation market goes

³⁶ *Id.*

³⁷ Dahdouh, *supra* note 14, at 412-13.

³⁸ Richard J. Gilbert & Steven C. Sunshine, *The Use of Innovation Markets: A Reply to Hay, Rapp, and Hoerner*, 64 ANTITRUST L.J. 75, 78-80 (1995).

³⁹ Dahdouh, *supra* note 14, at 429-34

⁴⁰ *Id.* at 405-06.

⁴¹ *Id.* at 408-09.

through, it would be incredibly difficult to ameliorate on an ex post basis.⁴² First, it would be difficult to tell if innovation had actually been hurt.⁴³ Second, post-merger remedies are especially difficult to construct in this context because innovation market assets are typically more difficult to “unscramble” than goods market assets.⁴⁴ For example, Dahdouh notes that in innovation markets,

successful competition typically depends on a complex mix of scientific personnel, market knowledge, access to specialized capital markets, access to academic research, and other human factors. Once a merger has combined such assets, it may be impossible to regenerate discrete research tracks. Promising research projects may have been closed and personnel assigned to other tasks. Key personnel may have left the company.⁴⁵

2.3. The Agencies’ Application of Innovation Markets to Merger Review Has Been Sparse and Unhelpful

In the last twenty years the agencies have frequently cited innovation concerns in evaluating proposed mergers, but have not consistently applied the innovation market concept to their review. In the early 1990s the agencies began to include the phrase “research, development, production, and marketing of” in their description of the relevant product market, but the R&D component tended to be either an expansive description of an existing market rather than a true innovation market, or if it was a true innovation market, just another piece of evidence justifying the prevention of an already anticompetitive merger.⁴⁶

As an example of both, in *In re Roche Holding Ltd.* the FTC challenged Roche, Inc.’s proposed acquisition of a controlling share of Genentech, Inc.⁴⁷ The FTC identified the relevant market as “the research, development, production and marketing

⁴² *Id.* at 411-12.

⁴³ *Id.*

⁴⁴ *Id.*

⁴⁵ *Id.*

⁴⁶ See Gilbert & Tom, *supra* note 7, at 50.

⁴⁷ 113 F.T.C. 1086 (1990) (consent order).

of: (1) vitamin C, (2) therapeutics for treatment of human growth hormone [HGH] deficiency, . . . , and (3) CD4-based therapies for the treatment of AIDS and HIV infection.”⁴⁸ Both companies were active participants in the existing vitamin C and HGH therapeutics markets, so R&D efforts in those markets were included in the relevant market definition just as any other product market would include R&D, not as identification of an innovation market. By contrast, the references to CD4-based therapies for the treatment of AIDS/HIV did reference a true innovation market, since the consent order indicates that – at least at that time – there were no companies actually selling CD4-based therapies.⁴⁹ Regardless, the resultant concentration levels in the vitamin C and HGH therapeutics markets would have been sufficient to enjoin the merger, so the anticompetitive consequences in the CD4-based therapies innovation market were not the sole basis of the FTC’s decision.

This was similarly the case in *In re American Home Products Corporation*.⁵⁰ In 1994, American Home Products Corporation (AHP) and American Cyanamid Company (Cyanamid) entered into an agreement to merge.⁵¹ The FTC challenged the merger, identifying a number of different relevant markets: (1) the manufacture and sale of combined tetanus and diphtheria (DT) vaccines for adults; (2) the manufacture and sale of pediatric DT vaccines; (3) the manufacture and sale of the “tetanus toxoid” vaccine; (4) the research and development of a vaccine against the Rotavirus infection; and (5) the

⁴⁸ *Id.* at “COMPLAINT”, Part IV.7 [page numbers unavailable for the current citation].

⁴⁹ *Id.* at “COMPLAINT”, Part V.11.

⁵⁰ 119 F.T.C. 217 (2005) (consent order).

⁵¹ *Id.*

research, development, production and sale of cytokines for white blood cell and platelet restoration.⁵²

Each of the product markets, with the exception of the Rotavirus vaccine R&D market, involved existing products in current markets rather than innovation markets. Furthermore, the market shares in those current markets, combined with the barriers to entry in each, were sufficient to justify enjoining the merger. Analysis of the only true innovation market, the Rotavirus vaccine R&D market, was not required to bolster the FTC's case, but was simply another piece of evidence justifying their challenge. This becomes clear in the Commission's order: the FTC required AHP to divest its tetanus and diphtheria vaccine businesses to approved acquirers,⁵³ but only required AHP to grant a non-exclusive license to Cyanamid's Rotavirus vaccine research, and provide any necessary physical samples, to an FTC-approved licensee.⁵⁴ AHP was not ordered to sell or otherwise transfer its patents in the research, nor was it required to refrain from selling any Rotavirus vaccine that it might develop.

It was not until the mid 1990s, following the agencies' issuance of the IP Guidelines, and Gilbert and Sunshine's article, that the agencies actually began relying solely on innovation markets to challenge proposed mergers and acquisitions. In 1995, the FTC asserted in *In re Glaxo PLC* that Glaxo plc's acquisition of Wellcome plc would create anticompetitive effects in the research and development of non-injectable 5HT1D agonists, a class of drugs known to act on the receptors in the human body that are responsible for migraine attacks.⁵⁵ This innovation market – the development of the non-

⁵² *Id.* at 218-19.

⁵³ *Id.* at 225-36.

⁵⁴ *Id.* at 236-39.

⁵⁵ 119 F.T.C. 815, 817 (1995) (consent order).

injectable version of the drug – was the sole basis for the FTC’s attempt to bar the merger.⁵⁶ The FTC noted the high HHI numbers and the existence of substantial barriers to entry, and alleged that the merger would eliminate actual, direct and substantial competition between Glaxo and Wellcome, decrease the number of R&D tracks, and increase Glaxo’s ability to unilaterally reduce R&D.⁵⁷ In the consent order, the FTC ordered Glaxo to divest all of Wellcome’s assets with respect to this research.⁵⁸

The facts of *In re Sensormatic Electronics Corp.*,⁵⁹ also in 1995, are similar to those in *Glaxo*. Sensormatic proposed to acquire Knogo Corp., and the FTC challenged the acquisition based on allegedly anticompetitive effects in the markets for R&D in disposable labels, and R&D in the processes to manufacture disposable labels.⁶⁰ The FTC alleged that the merger would reduce Knogo’s incentives to engage in R&D, decrease the total number of R&D tracks, and increase Sensormatic’s ability to unilaterally reduce R&D in each of these markets.⁶¹ The consent order allowed Sensormatic to receive a non-exclusive license to Knogo’s relevant patents, but prevented Sensormatic from actually obtaining ownership of the IP.⁶²

In each of these later cases, and others, the FTC tended to emphasize that the anticompetitive effects of the merger would be, *inter alia*, to eliminate the research and development tracks of the particular technology, and to create a dominant firm capable of raising prices.⁶³ It appears, therefore, that the agencies have accepted the traditional

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ *Id.* at 820-27.

⁵⁹ 119 F.T.C. 520 (1995) (consent order).

⁶⁰ *Id.* at 522.

⁶¹ *Id.* at 523.

⁶² *Id.* at 526.

⁶³ *See, e.g., In re The Upjohn Co.*, 121 F.T.C. 44 (1996) (consent order); *In re Baxter Int’l Inc.*, 123 F.T.C. 904 (1997) (consent order); *In re Cadence Design Systems, Inc.* 124 F.T.C. 131 (1997) (consent order).

economic model as it applies to high-technology markets. As Gilbert notes, “[the agencies’] enforcement actions imply a belief that if a merger adversely affects product market competition, it is also likely to reduce innovation.”⁶⁴

3. The Enforcement Agencies Should Continue to Use Innovation Markets in High Technology Market Merger Review, But Should Refine and Clarify Their Approach

3.1. *The Agencies Should Respond to Commentators’ Criticisms and Revise the Substantive Definition of “Innovation Markets”*

Eleven years after the adoption of the IP Guidelines, it is unlikely that innovation markets have significantly altered the agencies’ merger enforcement; in their survey of antitrust analysis in the five years after the IP Guidelines, Gilbert and Tom wrote: “The bottom line for merger enforcement policy at the agencies is that, in most cases, innovation has not changed the enforcement decision, either as a reason to block the merger or as a reason to allow an otherwise troublesome transaction to occur.”⁶⁵

Regardless, the concept is still generating a great deal of confusion and discussion among commentators. Despite the great deal of scholarly interest in the topic in the mid-to-late 1990s, and increasing use of “innovation markets” in the agencies’ enforcement actions, it does not appear that any consensus has been reached as to how the concept has been used, how it is used, and how it should be used, by the agencies in merger review. At the outset, the IP Guidelines do not indicate when anticompetitive effects should be analyzed as a separate competitive effect in a relevant goods or technology market, or as a

⁶⁴ See Gilbert, *supra* note 10, at 8.

⁶⁵ Gilbert & Tom, *supra* note 7, at 52.

competitive effect in a separate innovation market. Uncertainty in the overall merger process is compounded by the legal uncertainties of the innovation market approach; attorneys are unable to reliably advise their clients with regard to particular transactions.⁶⁶ This uncertainty increases the transaction costs of the merging parties, and ultimately increases costs to consumers. The agencies should address the many questions surrounding innovation markets and introduce new guidelines providing instruction as to their approach.

As discussed above, commentators have raised numerous concerns with respect to the use of the innovation market approach in horizontal merger review. The innovation market concept relies on the theoretical premises that (1) the competitive model applies to high technology markets, and (2) there is a direct, causal correlation between increased R&D and increased innovation. One of the primary arguments against the innovation market approach has been the general lack of empirical data supporting these economic theories, and many opponents to the innovation market approach have expressed concerns that these theories are wrong, and that innovation market analysis will prevent socially beneficial mergers from occurring. The agencies need to respond to these arguments and provide empirical data tending to show that the traditional competitive model produces more innovation than a collusive model, and that there is a positive, causative correlation between a firm's level of R&D spending and innovation. It would be beneficial for the agencies to commission some sort of economic study to address these issues.

⁶⁶ For example, Landman notes that attorneys cannot be expected to analyze innovation markets when neither Congress nor the agencies can really define what they are. Lawrence B. Landman, *Did Congress Actually Create Innovation Markets?*, 13 BERKELEY TECH. L.J. 721, 804-05 (1998).

The agencies also need to respond to commentators' concerns about the actual process of market definition in innovation markets. As commentators have noted, since R&D is typically secretive, it is difficult to properly define the market. To use R&D as a better proxy for innovation, it may be necessary for the agencies to obtain confidential information from both the merging parties, as well as others in the industry, to properly determine the true shape of the market. This information could be guarded by an administrative protective order in order to alleviate concerns about potential leaks of proprietary information.⁶⁷ The agencies should also indicate how far along R&D must be to be considered part of the relevant market.

Alternatively, and probably more pragmatically, the agencies should restrict the use of innovation markets to markets in future goods and services. In other words, the agencies should look specifically in

“reference to a forecast goods market in which, at a minimum, the identities of the sellers are predicted and their capacities approximated. . . . This approach would rule out enforcement actions concerning future goods that are justified only by reference to the intentions of the parties or to their R&D facilities or expenditures, rather than by reference to forecasts of goods markets. If the future products are so unpredictable that a rough forecast of the structure of the ultimate goods market cannot be made, then there is no reason to be confident that antitrust intervention into combinations of R&D capabilities will have desirable outcomes.”⁶⁸

Commentators have been most accepting of innovation markets in horizontal merger review when the two firms are obviously destined to compete in a particular market, but aren't able to yet because of some external mechanism – and it seems that the agencies

⁶⁷ For example, the International Trade Commission uses administrative protective orders (APOs) to safeguard information in the adversarial hearings used to resolve Section 337 (importation of goods infringing U.S. patents) disputes. FED. R. CIV. P. 26(c)(7); 19 C.F.R. § 210.34. Presumably the merging parties are not in a context as adversarial as a Section 337 hearing, and so the level of secrecy provided by the APO is likely to be equally sufficient to adequately guard their R&D projects.

⁶⁸ Ilene Knable Gotts and Richard T. Rapp, *Antitrust Treatment of Mergers Involving Future Goods*, *Antitrust Magazine* 102 (2004).

have really only been effective in regulating these future goods markets anyway.⁶⁹

“[E]nforcement actions concerning innovation markets are likely to be limited to situations where there is solid evidence delineating the innovation markets or where the governmental approval process creates an observable ‘pipeline’ for the introduction of new products.”⁷⁰ For example, if two companies are heading through the FDA approval process for a new drug, or if they are in the process of getting patents on two products that are very similar or would do the same thing, it is not difficult to predict that they will end up in the same market. This has been the approach adopted by the European Commission. The European Commission does not define separate “goods markets,” “technology markets,” and “innovation markets,” but has reached much of the same result as the U.S. enforcement agencies by looking at current and future markets.⁷¹ The Commission focuses its efforts on companies with R&D directed towards the same specific goal, giving them an easy way to identify the future good.⁷²

The agencies probably do not, however, need to respond to concerns about the legal validity of innovation markets under the Clayton Act. Getting a definitive statement from the agencies that they believe innovation markets are legal will not change any uncertainty in the merger process, as merging parties can already accept that the agencies consider the innovation market approach legal. To resolve the uncertainty here, either Congress or the courts would have to pass judgment on the legal issue. Until that time, at least with restricting the market definition to future goods markets – whose impact on commerce you can predict, at least to some degree – the risk-averse solution to this

⁶⁹ Landman, *supra* note 1, at 730, 738-39.

⁷⁰ Dahdouh, *supra* note 14, at 422.

⁷¹ John Temple Lang, *European Community Antitrust Law: Innovation Markets and High Technology Industries*, 20 FORDHAM INT’L L. J. 717, 761 (1997).

⁷² Landman, *supra* note 1, at 735, 739-40

problem is for merging parties to assume that the markets are legally valid, and analyze the consequences of their merger in current and nascent goods markets.

Finally, the agencies should explain that the innovation market approach does not displace the potential competitor doctrine, but rather compliments it. It is just another tool in the tool belt of the agencies that they can use to review the competitive effects of mergers. Gilbert has suggested an alternate nomenclature, which could clarify the difference between the two doctrines: “one-sided potential competition theory” would refer to a situation in which one firm has an established product, and a second firm is an actual potential entrant into the market already occupied by the original firm; “two-sided potential competition theory” refers to a situation in which two firms are actual potential entrants into a market that neither firm currently occupies.⁷³ As a semantic matter, the label “innovation market” is not particularly self-explanatory, and a change in name could clarify some of the issues.

3.2. The Agencies Should Also Promulgate New Horizontal Merger Guidelines and IP Guidelines Clarifying Their Position with Respect to Innovation Markets

In 1992 the agencies jointly issued the “Horizontal Merger Guidelines,” a comprehensive explanation of the agencies’ approach to antitrust review of proposed mergers between competitors. In 1997, the agencies jointly released revisions to the Horizontal Merger Guidelines, and since these two documents were issued, “the Agencies have consistently applied the Guidelines’ analytical framework to the

⁷³ Gilbert, *supra* note 8, at 15.

horizontal mergers under their review.”⁷⁴ The Horizontal Merger Guidelines have been extremely well-received by courts and commentators, and antitrust lawyers are now familiar with their general methodology.

As discussed previously, the IP Guidelines define the concept of the “innovation market” with respect to licensing agreements. The Horizontal Merger Guidelines do not, however, provide an explanation of the IP Guidelines’ concept of the innovation market as applied to horizontal mergers. In fact, the Horizontal Merger Guidelines are drafted in such a way as to apparently ignore the existence of innovation markets. As Richard and Sunshine describe the concept, review of mergers in innovation markets is the same as the analysis of mergers in traditional markets, except that in innovation markets the relevant market definition is changed to focus on the firms’ R&D activities and assets. Accordingly, it would seem that the Horizontal Merger Guidelines would explain how the method for defining a traditional relevant market is different from the method used to define a relevant market based on an innovation market. The Horizontal Merger Guidelines do, for example, explain an alternative process for relevant market definition in the presence of price discrimination.⁷⁵ But nowhere in the Horizontal Merger Guidelines is there reference to an innovation market. Relevant markets are specifically defined by an iterative process of determining demand responses to price increases on “each product (narrowly defined) produced or sold by each merging firm.”⁷⁶ The process is rooted on the production and sales of current products – not those that are as yet nonexistent. Based on the Horizontal Merger Guidelines, one could fairly conclude that

⁷⁴ U.S. DEP’T OF JUSTICE AND FED. TRADE COMM’N, COMMENTARY ON THE HORIZONTAL MERGER GUIDELINES v (2006), *available at* <http://www.usdoj.gov/atr/public/guidelines/215247.htm> [hereinafter “Commentary”].

⁷⁵ Horizontal Merger Guidelines § 1.12.

⁷⁶ *Id.* at § 1.11.

innovation markets are not a part of the agencies' enforcement mechanisms – but clearly, as discussed in Part II, this is not true.

Furthermore, in April of 2006, the agencies jointly released their “Commentary on the Horizontal Merger Guidelines”⁷⁷ (“Commentary”). The Commentary is intended to “[enhance] the transparency of the analytical process by which the Agencies apply the antitrust laws to horizontal mergers,”⁷⁸ and explains – in depth – each section of the Horizontal Merger Guidelines. For example, with respect to market definition, the Commentary explains, *inter alia*, the mechanics of defining relevant markets, the breadth of those markets, and the evidentiary sources of these market definitions.⁷⁹ Nowhere in this discussion, however, does the Commentary specifically address how markets are, or should be, defined in actions involving innovation markets. It simply echoes the discussion in the Horizontal Merger Guidelines basing market definition on products that are produced and sold.⁸⁰

The Commentary also cites recent enforcement actions brought by the agencies in each of these sections to provide specific examples of how they have applied their analytical framework.⁸¹ Just in the market definition section of the Commentary, the agencies cite more than twenty recent cases instructing how they determined what the relevant market was. While many of the cited enforcement actions list a reduction in innovation as one reason to challenge the merger, each also cites the anticipated rise in prices associated with the merger. None of the enforcement actions cited by the Commentary rests solely on anticompetitive effects in an innovation market.

⁷⁷ COMMENTARY, *supra* note 74.

⁷⁸ *Id.* at v.

⁷⁹ *Id.* at 5-11.

⁸⁰ *Id.* at 5.

⁸¹ *See, e.g., id.* at 6 (referencing the FTC's 2003 challenge of the Nestle-Dreyer merger).

The agencies need to clarify their position on innovation markets in horizontal merger analysis by either amending the Horizontal Merger Guidelines, amending the IP Guidelines, or introducing a new commentary to either. Merging firms cannot rely on widespread acceptance of the concept, since the issue is still hotly contested, nor can they rely on the enforcement actions brought by the agencies, as these have not been the picture of clarity. The agencies should clarify whether innovation markets are intended to apply to horizontal merger review at all, and if so, they should amend the market definition section of the Horizontal Merger Guidelines to reflect this. The IP Guidelines should similarly explicitly mention their applicability to mergers, rather than just licensing. A commentary, referencing some or all of the cases I have described in Part II would be useful to explain the agencies' past actions with respect to innovation markets.

Conclusion

The innovation market is a useful tool for predicting the dynamic outcome of mergers, and the enforcement agencies should continue to use it in their merger review. However, the agencies must respond to the numerous commentators who have expressed concern over the use of innovation markets, and should clarify their enforcement policies by releasing new guidelines on the concept.