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SECTION 5 AND THE INNOVATION CURVE

Daniel A. Crane¹

THE FTC'S AUTHORITY to use Section 5 of the FTC Act to reach anticompetitive conduct that would not be illegal under the Sherman or Clayton Acts has been much discussed in recent years, particularly in conjunction with the FTC's enforcement action against Intel. As of this writing, a Section 5 action against Google seems imminent.

I have previously written on Section 5 issues as a general matter.² In this chapter, I propose to focus more particularly on the question of Section 5 enforcement in highly innovative industries. To that end, I first recap my general arguments on the justifications for, and limitations of, the Section 5 power. Consistent with my prior work, I propose six general principles to govern the application of Section 5. In the second part, I turn to the application of Section 5 to the innovative sectors of the economy. I distinguish between sectors where innovation is persistent but relatively linear or constant and sectors where the innovation curve is steep—where the rate of innovation is rapidly increasing at the time of the contemplated enforcement action. I suggest that the FTC should receive the most prophylactic space under Section 5 as to industries where the rate of innovation is not accelerating. Conversely, the Commission should be tied to more traditional anti-trust norms as to industries where the rate of innovation is increasing.

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² See DANIEL A. CRANE, *THE INSTITUTIONAL STRUCTURE OF ANTITRUST ENFORCEMENT*, 135–41 (2011); Daniel A. Crane, *Thoughts on Section 5 of the FTC Act and the Case against Intel*, *ANTITRUST CHRON.* (Feb. 2010).

I. General Principles of Section 5

A. SECTION 5 AND NORM CREATION

When Congress designed the FTC in 1914, it did not intend for the Commission to be merely another law enforcement agency such as the Justice Department. It gave the FTC wide investigatory powers, a structure designed to optimize expertise, broad remedial powers, and an open-textured substantive mandate. The FTC was designed to be not merely a law enforcer but a law creator. Given this statutory design, it is remarkable that the FTC has largely become simply an ordinary antitrust litigant—a norm taker rather than a norm maker. The FTC has become subordinate not only to the same norms as the Justice Department (which makes some sense), but to the norms created in private antitrust litigation (which does not).

If the Commission does not enjoy sufficient prophylactic space to shape antitrust norms, there is not much of a reason to have a Commission. Consider the following passage from Cass Sunstein's seminal work, *After the Rights Revolution*:

Imagine . . . the multiple problems that would arise if private litigants were permitted to bring suit against “unfair and deceptive” advertising in the event that the Federal Trade Commission refused to act. Courts would be required to define in the first instance the statutory terms “unfair” and “deceptive.” The process of regulatory implementation would be removed from the agency. Administrative expertise and accountability, so important in giving content to open-ended statutory terms, would be unavailable. All of the factors that gave rise to the agency would be undermined by independent judicial decisions.³

Sunstein's hypothetical ruminations about the loss of the FTC norm-creation authority in its consumer protection function uncannily describes what has actually occurred on the antitrust side. The Commission has lost an independent norm-creation power, and with it, “all of the factors that gave rise to the agency.”

Of course, those who do not embrace the technocratic expert commission model may cheer the demise of an independent, norm-creative FTC and hope that its relegation to conventional law enforcement spells its continued marginalization and perhaps, in the footsteps of the Interstate Commerce Commission and the Public Utilities Holding Company Act, its eventual elimination. Let me offer three brief thoughts to those in this camp.

First, the FTC has survived repeated calls for its elimination and is unlikely to disappear anytime soon. Hence, the pragmatic question is how to optimize the Commission's institutional performance in its present environment, not how to make it go away.

³ CASS SUNSTEIN, *AFTER THE RIGHTS REVOLUTION: RECONCEIVING THE REGULATORY STATE* 222–23 (1990).

Second, it should be remembered that institutional modifications involve trade-offs. The political pressures that give rise to the antitrust impulse will not vanish if the FTC is marginalized; they will merely reappear at different junctures. The growth of private litigation meant an increase in the comparative influence of juries, generalist trial judges, private plaintiffs, and treble damages. The backlash to private litigation led to a contraction of antitrust norms across the board. Now, the “post-Chicago” backlash to the backlash is bringing pressure for antitrust vigor to reemerge somewhere.⁴ Who will be the institutional winners in any antitrust reemergence? Broadly speaking, the choice is between reinvigorating private litigation and its institutional baggage and reinvigorating the public enforcement agencies. Whatever the liabilities of the expert agency model, it has substantial advantages over the institutional realities of private litigation.

Finally, there is the question of what to do about the fact that according the FTC some extra norm-creation space under Section 5 gives the FTC advantages over the Justice Department. This is problematic in at least two ways. First, most of the reasons that justify according the FTC a norm-creation role—its expertise, its broad investigatory powers, its comparative advantages over private litigation—apply equally to the Antitrust Division. Second, given that the two agencies essentially divide markets in terms of enforcement responsibility, application of different legal standards to the FTC and Antitrust Division would lead to different industries facing arbitrarily different substantive rules. For example, computer hardware (usually under the FTC) would face more stringent antitrust rules than computer software (usually under the Antitrust Division). As Bob Pitofsky has explained, a construction of Section 5 that would make the same behavior lawful at the Department of Justice and unlawful at the FTC may be politically “untenable.”⁵

There is no simple answer to this quandary. Ideally, the line should be drawn between public and private enforcement, not between Section 5 and the Sherman Act. In the long run, a legislative modification making that distinction is desirable, if it cannot be achieved through force of judicial common law. In the shorter run, reinvigorating public enforcement as a whole—and not just the FTC’s fiefdom—requires a greater degree of joint enforcement and cooperation between the two agencies than has existed in the past.

B. INVOKING AN INDEPENDENT SECTION 5

The FTC Act gives the Commission a seemingly simple mandate: detect and prohibit “unfair methods of competition ... and unfair or deceptive [trade] practices.”⁶ Under

⁴ On the backlash to the Chicago School, see *HOW THE CHICAGO SCHOOL OVERSHOT THE MARK: THE EFFECT OF CONSERVATIVE ANTITRUST ANALYSIS ON U.S. ANTITRUST* (Robert Pitofsky ed., 2008).

⁵ See Workshop on Section 5 of the FTC Act as a Competition Statute (October 17, 2008), Remarks of Robert Pitofsky, Official Transcript, <http://www.ftc.gov/bc/workshops/section5/transcript.pdf>, at 64.

⁶ 15 U.S.C. § 45.

current law, the Commission's powers under Section 5 are at least coextensive with the substantive reach of the Sherman Act—in other words, anything that is illegal under the Sherman Act is also illegal under the FTC Act.⁷ But the Supreme Court has also held that the FTC may go further than the Sherman Act and “stop in their incipiency acts and practices which, when full blown, would violate those Acts.”⁸ Thus, “the standard of unfairness under the FTC Act ... encompass[es] not only practices that violate the Sherman Act and the other antitrust laws ... but also practices that the Commission determines are against public policy for other reasons.”⁹

All of this is promising given the need to move public norms away from private norms. But, until recently, the Commission frequently tied itself to the Sherman Act, claiming that in enforcing Section 5 of the Sherman Act, it is merely enforcing Sherman Act norms.¹⁰ And that, of course, means accepting all of the Sherman Act's private litigation baggage. This is in part a reaction to the fact that the courts have frequently quashed the FTC's efforts to develop an independent Section 5, even while paying lip service to the independence principle.¹¹ As Bill Kovacic has remarked, it is difficult to find even 10 successfully litigated Section 5 antitrust cases over the Commission's nearly hundred-year history.¹²

The reason for this judicial reluctance to permit deviation from Sherman Act norms is largely institutional. Courts tend to be jealous of their jurisdiction. To cite a venerable precedent, courts are loath to abandon their prerogative “to say what the law is.”¹³ In an early decision—subsequently overruled but never quite forgotten—the Supreme Court applied a *Marbury v. Madison* thematic to the FTC: “The words ‘unfair competition’ are not defined by the statute and their exact meaning is in dispute. It is for the courts, not the commission, ultimately to determine as a matter of law what they include.”¹⁴ Courts are wary of agency assertions that the agency should be accorded independent space to develop *legal* norms.

Hence, although legal doctrine theoretically allows space for an independent Section 5, and there are good policy reasons for some movement away from the constraints of the Sherman Act, great care needs to be taken in the formulation of a “separation strategy.” It simply will not do for the FTC to declare independence from the Sherman Act and

⁷ *FTC v. Cement Inst.*, 333 U.S. 683, 694 (1948).

⁸ *FTC v. Brown Shoe Co.*, 348 U.S. 316, 322 (1966).

⁹ *FTC v. Indiana Fed'n of Dentists*, 476 U.S. 447, 454 (1986).

¹⁰ *See, e.g., Rambus, Inc. v. FTC*, 522 F.3d 456, 462 (D.C. Cir. 2008) (observing that the Commission had expressly limited its theory of liability to conduct that would violate Section 2 of the Sherman Act).

¹¹ *See generally* FTC Workshop, Opening Remarks of Chairman William Kovacic, Official Transcript at 4–20, available at <http://www.ftc.gov/bc/workshops/sections5/transcript.pdf>.

¹² *Id.* at 10.

¹³ *Marbury v. Madison*, 5 U.S. (1 Cranch) 137, 177 (1803) (“It is emphatically the province and duty of the judicial department to say what the law is.”).

¹⁴ *FTC v. Gratz*, 253 U.S. 421, 427 (1920).

then proceed to formulate its own antitrust policy, as the Commission appears to have done in its recent case against Intel.¹⁵ A “just trust us, we’re the FTC,” strategy has little chance of success in the courts. Rather, the FTC needs to pursue a cautious and incremental Section 5 independence strategy. Critical to this strategy is explaining in each case what it is about the particular context of that case that justifies an independent Section 5. I propose six contexts in which judicial deference to Commission norm creation may be particularly justified. Cases that involve a combination of these contexts are particularly likely to secure judicial deference to an independent Section 5.

First, courts are most likely to defer to administrative agency judgments in cases involving commercial practices about which the courts have not developed a deeply rooted body of precedent. In such cases, the courts may allow some administrative experimentation and testing, even though they might not have reached the same result as the agency if they had analogized to conduct already covered by established liability norms. Conversely, courts are least likely to defer when they have already spoken to the exact practice on many occasions and developed a time-tested body of liability rules to govern it. Refusal by the agency to honor the judicially created precedents may look—to judges at least—like intransigence.¹⁶ It is human nature (and judges are human after all) to be more open to an idea on which one has not yet expressed an opinion than to approve of an idea that contradicts one’s prior assertion. Hence, the FTC is most likely to be accorded a norm-creative role on issues that have not yet received a significant airing in the courts, rather than in seeking to reform well-worn areas of precedent such as predatory pricing or exclusive-dealing law.

Second, one area where many commentators have urged the Commission to assert Section 5 independence is where there is a gap between Sections 1 and 2 of the Sherman Act.¹⁷ Although Sections 1 and 2 plausibly could be read to cover all commercial conduct of an anticompetitive nature seamlessly, judicial construction of the statutory texts has created some coverage gaps. Section 1 requires a “contract, combination, or conspiracy”—and hence agreement between at least two unrelated actors—which precludes coverage of purely unilateral acts, such as the unilateral adoption of practices that facilitate tacit price coordination or unsuccessful attempts to induce others to join a cartel. Section 2 requires monopoly power, thus precluding application to anticompetitive acts involving a lesser degree of market power. Further, there is a serious juridical question about the viability under Section 2 of “joint monopolization” offenses where the defendants did not agree on a concerted pattern of conduct but adopted parallel measures, such as exclusive-dealing contracts, that effectively lock up the market to new entrants.

¹⁵ For a fuller discussion of the *Intel* case, see, *Thoughts on Section 5 of the FTC Act*, *supra* note 2. In the interests of full disclosure, I prepared the above paper while an academic consultant for Intel.

¹⁶ See FTC Workshop, Pitofsky Remarks, *supra* note 5, at 65 (“The Federal Trade Commission really cannot overrule the Supreme Court. I don’t care what Section 5 says.”).

¹⁷ See *id.*

During the 1970s, the FTC brought cases that sought to fill these statutory gaps with the seamless and open-ended text of Section 5.¹⁸ Though it was rebuffed by the courts, the Commission is surely on strong ground when asserting Section 5 as a catchall, intended by Congress to avoid end runs around the Sherman Act. The FTC Act's legislative history evidences such as congressional intent.¹⁹ Further, it is not hard to explain to courts why the act should be read broadly to capture conduct that, for statutory construction as opposed to public policy reasons, falls outside the purview of the Sherman Act.

Third, the Commission is on strongest grounds when challenging market power created by fraud or deception. The FTC's original mission, incorporated in the 1914 act creating the Commission, was to prohibit "unfair competition." In the 1938 Wheeler-Lea Amendment, Congress added a prohibition on "unfair or deceptive" trade practices. Although these prohibitions are juridically separate and not every "unfair method of competition" need involve "deception," there are obvious statutory synergies between the amended statute's competition and deception prongs. It follows that the Commission should enjoy the greatest independence from the constraints of Sherman Act law when advocating against market power acquired by deception or in antitrust cases that otherwise involve misrepresentation or fraud.²⁰ As Justice Breyer explained in dissent in *FTC v. California Dental*, the Commission should be afforded an extra measure of discretion when dealing with a restriction that was ostensibly justified as a fraud-prevention measure.²¹

Fourth, the Commission is likely to find greater judicial receptivity to its norm creation in cases involving consumer decision making. The FTC brands itself as first and foremost a consumer protection agency.²² The Commission enjoys its greatest prestige in that capacity, as manifested by the extreme popularity and positive reputational benefits for the Commission of the Do Not Call Registry. Indeed, the courts have afforded the Commission deference almost exclusively in its consumer protection capacity.²³ It

¹⁸ See, e.g., *Boise Cascade Corp. v. FTC*, 637 F.2d 573 (9th Cir. 1980) (rejecting FTC's efforts to challenge unilaterally adopted basing point pricing systems).

¹⁹ See Marc Winerman, *The Origins of the FTC: Concentration, Cooperation, Control, and Competition*, 71 *Antitrust L.J.* 1, 74–75 (2003).

²⁰ See, e.g., *FTC v. Texaco, Inc.*, 393 U.S. 223, 226 (1968) (observing that FTC determinations are entitled to "great weight" when the FTC has previously studied and examined a particular issue on multiple occasions).

²¹ *Cal. Dental Ass'n v. FTC*, 526 U.S. 756, 787 (1999) (Breyer, J., concurring in part and dissenting in part) (observing that the FTC is "an expert in the area of false and misleading advertising," but found no basis for the association's claim that a prohibition on price and quality advertising was necessary to protect consumers against misleading claims).

²² See, e.g., *Proposed Consumer Financial Protection Agency: Implications for Consumers and the Federal Trade Commission*, *Hearing Before the H. Comm. on Energy and Commerce Subcomm. on Commerce, Trade, and Consumer Protection* 111th Congress (July 8, 2009) (Prepared Statement of the Federal Trade Commission), available at <http://www.ftc.gov/os/2009/07/090708Acfpatestimony.pdf> (noting that the "Commission also appreciates the proposal's recognition of the FTC's role as the nation's consumer protection agency").

²³ See Daniel A. Crane, *Technocracy and Antitrust*, 86 *Tex. L. Rev.* 1159, 1206–207 (2009).

follows that the Commission is most likely to secure deference from the courts for an independent Section 5 construction when the Commission is acting directly for the benefit of consumers.

To secure maximum deference, the Commission should not only invoke a general consumer welfare justification for its actions—all antitrust actions should be justified on consumer grounds, whether or not consumers are directly involved in the market segment at issue. Rather, the Commission should pursue an independent Section 5 program primarily in cases that directly involve choices and decisions by consumers and where the Commission can explain how its expertise with consumer psychology, values, and practices justifies a more liberal construction of Section 5 than might be justified under the Sherman Act.

For example, a good bit of the Justice Department’s enforcement action against Microsoft involved claims about consumer behavior. Operating system users allegedly were confused by the existence of multiple browsers on a desktop, which meant that if Microsoft indelibly engraved Internet Explorer on the Windows desktop, OEMs would be reluctant to add Netscape Navigator for fear that their support lines would be overwhelmed by confused and irate consumers.²⁴ Thus, even in a case involving primarily commercial practices between businesses (operating systems, browsers, programmers, OEMs, etc.), consumer mentality, habits, and vulnerabilities played a major role. In a case such as *Microsoft*, the Commission could stake a strong claim to Section 5 independence by invoking its expertise about, and protection of, consumers.

Fifth, agency expertise may be most useful—and hence call for the greatest judicial deference—where it concerns predictions about future consequences of incipient behavior. In such cases, courts may be comparatively ill equipped to divine the future and more likely to trust an agency’s prediction based on its superior familiarity with the type of conduct at issue. Conversely, courts are less likely to defer when the relevant conduct has been in place for some time and its actual effects can be tested using judicial empirics—discovery and adversarial procedures. Judges are more confident in answering the question “have prices gone up” or “has innovation been stifled” than “are prices likely to go up” or “is innovation likely to be stifled.” The more confident that judges are in their own abilities to work out the facts, the less likely they are to defer to administrative agencies.

In the classic formulation of an expansive Section 5 power, the Supreme Court held that the FTC Act “was designed to supplement and bolster the Sherman Act and the Clayton Act ... to stop in their incipiency acts and practices which, when full blown, would violate those Acts ... as well as to condemn as ‘unfair methods of competition’ existing violations of them.”²⁵ As this quotation makes clear, the FTC’s prophylactic Section 5 powers—the power to reach beyond the Sherman Act—exist as to categories of

²⁴ U.S. v. Microsoft Corp., 253 F.3d 34, 61 (2001).

²⁵ FTC v. Brown Shoe Co., 384 U.S. 316, 322 (1966) (quoting FTC v. Motion Picture Adv. Serv. Co., 344 U.S. 392, 394–95 (1953)).

incipient behavior that could “when full blown” blossom into Sherman or Clayton Act violations. Conversely, as to practices that are not incipient but fully developed, *Brown Shoe* suggests that the FTC Act is merely coextensive with the Sherman Act.

Finally, as with the Justice Department, the Commission needs to pay careful attention to the relationship between theory of liability and theory of remedy. One of the chief justifications for giving the FTC prophylactic powers beyond the reach of the Sherman Act is that Section 5 remedies are prospective and preventative rather than compensatory, punitive, or structural.²⁶ The Commission should be accorded the greatest deference on liability norms when it simply orders the defendant to cease and desist from conduct that could impair the competitive functioning of a market in the future. When the Commission seeks extraordinary remedies—such as those that radically restructure an allegedly damaged market and seek to restore competition—the likelihood of judicial deference on liability norms is much smaller.

The Sherman Act’s criminal penalties and treble damages require a strict construction of the act, whereas the semi-regulatory nature of the FTC Act creates greater room for a broad enforcement mandate. As explained in the first treatise on the FTC, written the year after the Commission’s formation (by the son of the first Justice Harlan and the father of the second Justice Harlan):

The word “unfair” is undeniably indefinite in sense and meaning. What one person may consider “unfair” in competitive trade, another may perhaps regard as legitimate. Conceivably, members of a court may disagree as to whether or not, under the circumstances of a particular case, a given method of competition is “unfair,” just as in one case they were unable to agree and adjudge whether or not certain regulations there involved constituted an “unreasonable” restraint of trade within the purview of the Sherman Law. That, however, is of no consequence, so far as concerns the validity of the Trade Law [the FTC Act]. The Trade Law does not purpose to denounce any competitive act as a crime. It does not provide for the imposition of a fine upon, or for the imprisonment of, any person guilty of practicing “unfair methods of competition.” Whatsoever the peril, under the Sherman Law, of practicing “unfair methods of competition,” a person resorting to such practices incurs no other risk, under the Trade Law, than that the Trade Commission, by proceeding as pointed out in the statute, may obtain the order of a court requiring him to cease and desist from such practice.²⁷

²⁶ See, e.g., *FTC v. Texaco, Inc.*, 393 U.S. 223, 226 (1968) (observing that the FTC Act was intended to delegate power to “an administrative body of practical men’ who will be able to apply the rule enacted by Congress to particular business situations, so as to eradicate evils with the least risk of interfering with legitimate business operations”) (citation omitted).

²⁷ JOHN MAYNARD HARLAN & LEWIS WILSON MCCANDLESS, *THE FEDERAL TRADE COMMISSION, ITS NATURE AND POWERS: AN INTERPRETATION OF THE TRADE LAW AND RELATED STATUTES* 31 (1916).

II. Section 5 in Innovative Industries

A. INCIPIENCY AND INNOVATION

The foregoing discussion suggests that the FTC should be at the peak of its Section 5 independence when it encounters uncharted waters and when it proposes forward-looking remedies designed to improve the functioning of a particular market in the future, as opposed to merely incentivizing firms to behave more competitively. This suggests, in turn, that Section 5 should play an important role in innovative industries, ones where new goods or services are coming to market and creating new economic realities for market participants. Not surprisingly, some commentators see a special role for Section 5 in policing technological innovation.²⁸

The idea that Section 5 may be useful in policing innovation, although appealing, must have limits. First, it is important to observe a distinction between incipient *conduct* and incipient *technologies*. Innovation of importance to antitrust law can be of at least three kinds: developments in technology, developments in business practices, and developments in law. It is the second kind of innovation that most clearly calls for the third. Even firms in static industries—meaning ones where the essential industrial technologies are not subject to a high rate of change—may be innovators in business practices, such as the forms of contracts they offer customers or suppliers, pricing practices, or human resource or intellectual property management. The FTC’s Section 5 powers should be at their zenith when firms deploy new business practices, not clearly addressed by existing antitrust law; the risks of anticompetitive effects are high; and reasonable alternative business strategies would likely secure comparable efficiencies. This does not mean, however, that the FTC should necessarily enjoy special latitude when the pace of technological development in an industry is great.

There is a case to be made for using Section 5 to remove restraints on innovation that might not be reachable under the Sherman Act because the technological conditions they raise have not previously been considered. But that case should not amount to an undifferentiated assumption that legal innovation by the FTC should be applied consistently to keep pace with technological innovation. To the contrary, legal innovation will often be grossly outpaced by technological innovation. No amount of effort or determination to enhance the alacrity of legal innovation will do the trick, as even commissions (as contrasted with courts, which are notably ponderous) are constitutionally incapable of keeping up with many fast-moving industries. Nor would it be wise to rush the rate of legal innovation with the hopes of staying within sight of the technological innovation—like the turtle taking steroids to keep within striking distance of the hare.

²⁸ See, e.g., Richard Dagen, *Rambus, Innovation Efficiency, and Section 5 of the FTC Act*, 90 B.U. L. Rev. 1479 (2010).

A legal innovation that lags a generation behind the technological state of the art will often do far more damage than good.

It should be clear that there is a time for declining to apply even traditional antitrust rules when the pace of innovation is so fast that application of the rule might interfere with technological progress. In the specific context of Section 5, the question is whether the Commission should be entitled to go *beyond* traditional antitrust principles—to impose liability beyond that which would obtain under the Sherman Act. Where the rate of innovation is high, and particularly where the innovation curve is steep, it should not.

The shape of the innovation curve is of particular importance in determining the call for novel theories of intervention. An industry may be innovative without being at a steep point in the innovation curve. For example, an industry may expend a large amount on research and development (R&D) and regularly develop new products or services, but do so in a fairly linear or constant way. Or, it may be still innovative and yet exhibiting a slower pace of innovation than in the past. On the other hand, there are industries when the innovation curve is steep, where there is not only a high degree of innovation but also an increasing rate of innovation. The steepness of the curve cannot last indefinitely—there are limits to the available progress in every technology. Moments during which the curve is steep are poor times for experimenting with legal norms.

In his widely discussed study of innovation, *The Singularity is Near*,²⁹ Ray Kurzweil shows that technological paradigms typically go through a life cycle in three phases. First, there is an early phase of slow, exponential growth. In the middle-to-end of the life cycle there comes a phase of explosive exponential growth, where the technology changes rapidly—where the curve is nearly vertical. Finally, in the last phase, the curve levels off as the paradigm matures and is eventually replaced by a different paradigm.

Antitrust experimentation is only advisable during the first or third phase. During the first, the rate of change is slow enough that antitrust developments might hope to keep up. The same is true during the third, although any rules developed during that period may be more useful as beta tests for the coming paradigm than in redressing wrongs in technology that is coming near the end of its shelf life. During the middle period of explosive and accelerating innovation, the case for antitrust innovation is weak. When markets are highly dynamic competition is already doing its work. That legally mandated enhancements in competition could make the market even more innovative must be weighed against the possibility that bad legal interventions—particularly those that would have made sense a generation or two earlier but rest on yesterday's news—will slow the rate of innovation. The nod should generally go to the bird in the hand.

²⁹ RAY KURZWEIL, *THE SINGULARITY IS NEAR: WHEN HUMANS TRANSCEND BIOLOGY* 43–44 (2005).

B. TWO EXAMPLES: PHARMACEUTICALS AND COMPUTING

One of the difficulties in applying the principles suggested in the previous section is identifying where a market is in its technological curve at any given moment. The shape of a curve cannot be fully identified until all of its data points are determined, which means that antitrust agencies can never be sure whether they are on the innovation curve. There is also the problem of identifying the relevant unit. Should the degree of FTC independence under Section 5 depend on the rate of innovation in a particular industry (i.e., pharmaceuticals) or in much more narrowly defined technology (i.e., second-generation ace inhibitors)?

The relevant unit for judging the innovation curve should depend not on formalistic market definition but on the scope of the rule the Commission is considering. If the Commission is considering a rule that would apply categorically to all patent settlements between pioneer drug makers and generics, then the relevant unit is the innovation curve of the pharmaceutical industry as a whole. Conversely, if the Commission is considering a rule tailored much more closely to a particular feature of a particular industry—such as bias in organic Internet search results—then the relevant unit for consideration should not be the Internet as a whole but organic search. Of course, it might be prudent to consider the possibility of a narrower or broader rule given differences or similarities between the pace of innovation in different market segments. However, once the Commission identifies the relevant unit to which it proposes to exercise Section 5 powers, it is the rate of innovation in that unit that should count.

Another problem is how to judge the relevant rate of innovation. Simply counting trends in R&D expenditures or the incidence of patenting would be a poor proxy for judging where an industry is in its curve. R&D expenditures may be disproportionately spent during the first and third phases of the innovation cycle, where firms are making foundational discoveries or preparing for paradigmatic change, even though the biggest leaps in innovation may occur in the middle and steepest part of the curve. Further, even if the incidence of patenting is highly correlated with innovation intensity—which is somewhat doubtful³⁰—there may be a temporal disconnect between the patenting and innovation intensity.

Given differences between innovation drivers and manifestations of innovation among industries, it would probably be counterproductive to suggest broad rules to determine how quickly innovation is occurring. Illustrations from two industries—pharmaceuticals and information technology—demonstrate how innovation curve analysis, and implications for Section 5, might play out.

First, the pharmaceutical industry *may* be an example of an industry in which the rate of innovation is, at least for the moment, decelerating. To repeat an earlier point, this assumes that the entire industry is the relevant regulated unit as opposed to particular

³⁰ See, e.g., Jonathan M. Barnett, *Is Intellectual Property Trivial?*, 157 U. Pa. L. Rev. 1691, 1703 (2009).

therapies, where the rate of innovation may still be high. But, pharma, as a whole, may be receding from a golden era of rapid-fire introduction of new pioneer drugs into an era where innovation proceeds at a more sedulous pace. According to the NIH, the pace of new drug introductions has been slowing for the last 15 years.³¹ The NIH believes that pharmaceutical companies are failing to pursue promising leads for drugs for maladies such as depression and Parkinson's disease.³² The ratio of branded to generic prescriptions also tells a story. In 2004, 57 percent of all prescriptions were generic. In 2009, the number was 75 percent, and IMS Health projects that it will rise to 80 percent in 2012.³³ Although this may sound promising from a static efficiency perspective, one more ominous reason is that blockbuster drugs are going off patent and are not being replaced by new ones. In 2011, the Obama administration announced that it had become so concerned about the lethargic pace of new drug introductions that the administration is starting a new billion-dollar drug development center in the NIH.³⁴

Observe that, to say that the rate of innovation in pharmaceuticals may be slowing is not to say that the pharmaceutical industry is no longer innovative. The question is how quickly new generations of drugs are superseding old ones in relation to how quickly that occurred in the past and might occur again in the future following a paradigmatic shift. If, in fact, we are presently in a period of flattening on the innovation curve, then the case for Section 5 innovation may be stronger. This does not, of course, mean that more antitrust enforcement or new antitrust theories will prompt innovation in the pharmaceutical industry. It is possible that an excess of generic free riding or other competitive forces have eroded the pioneer firms' incentives to invest adequately in risky R&D portfolios. The point is merely that, if the rate of innovation in pharmaceuticals is no longer accelerating, the deployment of innovation Section 5 theories may be more justified than at a period of a steeper innovation curve.

Computing and information technology is a very different matter. Under the familiar Moore's law, formulated in 1965, the number of transistors on integrated circuits doubles approximately every two years.³⁵ Even as computer processing speed and dynamic random access memory have accelerated dramatically in the last few decades, prices for processors and memory have fallen dramatically.³⁶ Kurzweil projects that the innovation

³¹ Gardiner Harris, *Federal Research Center Will Help Develop Medicines*, N.Y. TIMES, Jan. 22, 2011.

³² *Id.*

³³ Kathlyn Stone, *74 Percent and Growing: Most Prescriptions Now Written for Generic Drugs* (May 25, 2011), available at <http://pharma.about.com/b/2011/05/25/74-percent-and-growing-most-prescriptions-now-written-for-generic-drugs.htm>.

³⁴ Gardiner Harris, *Citing Slow Pace of New Drugs, US to Open \$1b Development Center*, N.Y. TIMES, Jan. 23, 2011, available at http://www.boston.com/lifestyle/health/articles/2011/01/23/citing_slow_pace_of_new_drugs_us_to_open_1b_development_center/.

³⁵ Gordon E. Moore, *Cramming More Components into Integrated Circuit*, available at http://download.intel.com/museum/Moores_Law/Articles-Press_Releases/Gordon_Moore_1965_Article.pdf, [last visited March 18, 2013].

³⁶ KURZWEIL, *supra* note 29, at 56–72.

curve for integrated circuit computing will continue to grow exponentially until around 2020, at which time it will reach the level off and be replaced in a paradigm shift to three-dimensional molecular computing.³⁷ Overall, the innovation curve for computer power and cost continues to steepen.³⁸

Similar acceleration in the innovation curve is occurring in other areas of information technology. Internet search appears to be transitioning from its first phase of slower exponential growth into an intermediate phase of explosive growth. Search engines are redefining the very understanding of organic search, shifting it from a library catalogue of links to possibly relevant sites to an integrated information portal dynamically responsive to users' needs and demands.³⁹ Transformative shifts in Internet search functionality and capability seem to be occurring in smaller and smaller increments of time, suggesting that the curve is steepening.

Again, the fact that computing and information technology may be in a particularly steep part of its innovation curve does not mean that such industries should receive a free pass from antitrust law. As to commercial practices that are well understood and clearly anticompetitive, there should be no hesitancy to apply the Sherman Act. On the other hand, it would be inadvisable to develop new norms under Section 5 to govern industrial segments that are in a state of rapid and accelerating innovation. Any such norms would likely be outdated before promulgated.

III. Conclusion

In the coming decade, the FTC will make critical choices about how it presents its case for Section 5 independence. The case it makes is not only critical for the future of the Commission, but for the future of public enforcement more broadly. As innovation in legal norms is often driven by innovation in human technologies, the conversations about FTC innovation and technological innovation are certain to be intertwined. It would be prudent for the Commission to have a clear vision not only about the justifications for and boundaries of Section 5 as a general matter, but its special roles and limitations in innovative industries.

³⁷ *Id.* at 67.

³⁸ *Id.* at 68–70.

³⁹ See Daniel A. Crane, *Search Neutrality as an Antitrust Principle*, 19 GEO. MASON L. REV. 1199 (2012).