

# Consumer Welfare In Competition And Intellectual Property Law

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Whether antitrust policy should pursue a goal of “general welfare” or “consumer welfare” has been debated for decades. The academic debate is much more varied than the case law, however, which has consistently adopted consumer welfare as a goal.

While some practices such as mergers might produce greater gains in productive efficiency than losses in consumer welfare, identifying such situations would be extraordinarily difficult. First, these efficiencies would have to be “transaction specific,” meaning that they could not be attained by other means. Second, these would necessarily be gains that accrue at lower output levels than previous to the practice; otherwise there would be no consumer harm to balance. But most efficiency gains accrue at higher rather than lower output levels. Third, collusion facilitating practices spread welfare losses across an entire industry, while production gains typically accrue only to the participants in a merger or similar practice. Fourth, the reigning tradeoff models generally assume a market that was competitive prior to the practice and monopolized after. Most practices that facilitate the exercise of market power occur in markets that were noncompetitive to begin with. In these situations consumer losses are relatively larger and producer gains smaller.

Relatively little has been written about consumer welfare and intellectual property law. A well functioning IP system would increase consumer welfare in both the short and long run, so no tradeoff would be needed. In the imperfect system that we have, however, consumer losses do occur, mainly when IP rights are excessive in relation to innovation incentives, or when the rights are given to things that would have been developed (or have already been developed) anyway by ordinary market processes.

Both competition law and intellectual law are concerned with promoting economic welfare. Two fundamental questions for both are determining how welfare should be defined, and how these welfare goals should be implemented. Producer welfare rises as the amount producers receive exceeds the lowest amount they are willing to accept, which is generally their cost. Consumer welfare rises with the difference between the amount consumers must pay and the amount they are willing to pay. When we speak of economic welfare we ordinarily mean the sum of these two differences, or total “surplus.” A perfectly competitive economy is said to be efficient because it maximizes the sum of producers’ and consumers’ surplus. In addition, competition drives selling prices toward marginal cost, and purchasing prices to the marginal consumer’s willingness to pay, assuming there is no price discrimination.

**BOTH COMPETITION LAW AND INTELLECTUAL LAW ARE CONCERNED WITH PROMOTING ECONOMIC WELFARE. TWO FUNDAMENTAL QUESTIONS FOR BOTH ARE DETERMINING HOW WELFARE SHOULD BE DEFINED, AND HOW THESE WELFARE GOALS SHOULD BE IMPLEMENTED.**

Innovation complicates this model by incorporating incentives over the long run. Firms want to break out of competitive returns by doing something different, whether developing a new product or process, or simply

differentiating their product offering from someone else's. Over the long run innovation contributes a great deal to economic growth, much more than the general movement of markets from lesser to greater price competition.<sup>2</sup> Private innovation is costly, however, and requires an inducement. The principal inducement the legal system provides is exclusive rights that facilitate short-run returns above competitive levels. The Patent and Copyright Act's temporary periods of exclusivity create exclusive rights that diminish competitive pressures and yield supracompetitive returns for successful inventions.

An ideal innovation policy would facilitate the optimal amount of innovation. Privately, this occurs when the amount of increasing investment in innovation just equals the incremental return.<sup>3</sup> In order to be socially optimal, the returns must also net out the social value of the innovation and the inefficiency, or deadweight loss, that results from any exclusive rights that IP protection provides. A precisely tailored policy must determine the optimal duration and scope of intellectual property rights that would produce this result. For example, a right that simply forbids copying, such as copyright and trade secret law convey, is much narrower than a right that condemns all duplication, whether or not the infringer copied or even knew about the right, such as patent law conveys. A patent that lasts 100 years might provide a greater incentive to innovate in some markets, but the longer period would also yield greater deadweight loss by postponing competition.

Identifying and achieving the optimal social level of innovation would be heroic. *Ex post*, one can often conclude that a certain investment in innovation was or was not cost justified. *Ex ante*, however, successful innovation is dominated by the unexpected. Over time, the managers of innovative firms may acquire considerable experience in distinguishing worthwhile from less promising research investments, but the level of uncertainty is almost always higher than when we are considering ongoing production of unchanging products sold in established markets. Further, while the costs of innovation are specific to the industry and the project, the legal system meters returns by providing largely one-size-fits-all regulation of the duration and scope of IP rights. For example, a patent lasts twenty years from the application date, with some adjustments. This applies in both the chemical and pharmaceutical industries, where products can have a commercial life of many decades, and also in electronic communications and computers, where technologies often become obsolete in a few years.

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The transaction costs of operating a system that took individual market differences into account would be very high. Further, we have extraordinarily poor information about such basic questions as the optimal duration and scope of a patent or copyright. Further, in at least some situations the optimal amount is zero.<sup>4</sup>

Competition policy is also concerned with maximizing welfare. A significant debate has developed over whether "general welfare" or "consumer welfare" should be the goal of the antitrust laws. General welfare looks

at the sum of consumers' plus producers' surplus, while consumer welfare looks only at the former. Economists who write about competition policy almost always speak about general welfare. This includes both the Harvard and Chicago Schools, the two groups that have dominated antitrust economics over nearly a century. The debate among antitrust writers is more balanced, with many advocating consumer welfare as antitrust's goal.<sup>5</sup>

The debate offers a degree of richness and complexity that is completely belied by the case law, however.

With virtually no exceptions, the courts take a consumer welfare approach to antitrust and competition law. A recent example is the Supreme Court's divided *Actavis* decision on pay-for-delay settlements in pharmaceutical drug patent cases. The five-member majority evaluated the issue entirely from a consumer welfare perspective. But even the three dissenters acknowledged that "the point of antitrust law is to encourage competitive markets to promote consumer welfare."<sup>6</sup>

To be sure, producer welfare (surplus) is relevant to background policy decisions, such as why we have a rule of reason and when we apply it. But when it comes to specifics the courts uniformly apply a consumer welfare approach.

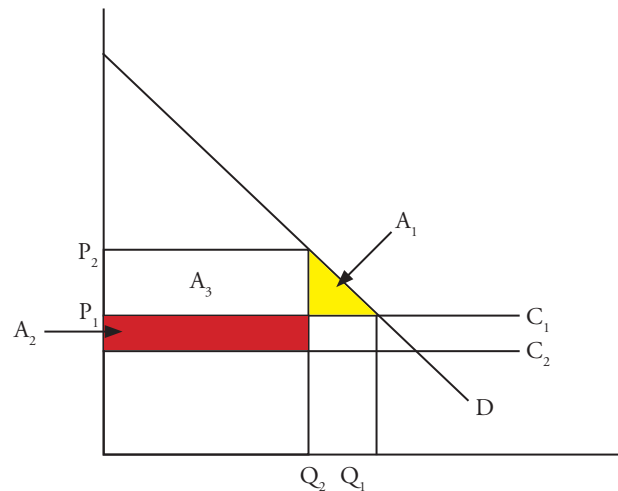
This is not to say that producer gains are taken lightly. On the contrary, they are accorded great weight, but principally because they lead to consumer gains. For example, the market power/structure screen used for rule of reason and merger analysis assumes that consumers can only gain from efficiencies that firms without market power attain.<sup>7</sup> If 10 Italian restaurants in Manhattan decide to grow tomatoes collectively, competitive harm in the market for either tomatoes or Italian restaurant prices is unlikely. This joint venture will be profitable only if it makes cheaper or better tomatoes, and consumers can only benefit. The same thing would be true if any two of those restaurants should merge. In general, efficiencies from joint activities in competitive markets benefit consumers, but they also benefit producers by giving them advantages over rivals who have not yet duplicated the efficient technology or organization. At the other extreme, naked collusion benefits producers and harms consumers, and antitrust condemns it.<sup>8</sup>

Complexities occur in antitrust efficiency analysis when a practice simultaneously produces efficiency gains and leads to reduced competition, such as some mergers or joint ventures where the participants have significant market power. In general, these situations can be divided into two kinds. First are situations where the firms involved in the challenged activity have or threaten to have serious market power, but the activity produces efficiencies so significant that they fully offset any likely power effects. Prices are lower, or at least no higher, than they had been previously. A good example in the joint venture context is the Supreme Court's *Broadcast Music* (BMI's) decision, which involved copyright blanket license agreements that included virtually every piece of commercially recorded music. The scope of the arrangement created an inference of power, but it was largely undermined by the fact that individual agreements with copyright holders were all nonexclusive, meaning that any one of BMI's 20,000 artists or ASCAP's 22,000 members was free to make unlimited sales outside of the blanket license agreement. Since cartels can profit only by restricting output, achieving that result in this situation was unthinkable.<sup>9</sup> Further, the licensing arrangement, which created the play-on-demand authorization that programmers use to this day, was so efficient that the market as we know it could not exist. So there was no balancing of consumer losses against producer gains. Both groups were winners, leaving nothing to balance.

Another example is the merger that both creates monopoly power or facilitates its exercise, and also yields production efficiencies so substantial that the post-merger price (or quality) is better for consumers than the pre-merger situation had been. Once again, there is nothing to trade off. The merging firms may have higher price/cost margins, profiting them, but consumers are better off as well. The merger should be lawful under either a general welfare or a consumer welfare test. This is in fact the test that the Government applies under its Merger Guidelines. In order to defend a *prima facie* anticompetitive merger on the basis of efficiencies the proponents must show that the efficiencies are "merger specific"—that is, that they cannot readily be achieved

without the merger. They must also show that proven efficiencies are of sufficient magnitude that the market price following the merger will be no higher than it had been before.<sup>10</sup> In that case there is nothing to trade off.

The more difficult cases occur when a tradeoff is necessary. In the 1960s, Oliver E. Williamson famously illustrated that a merger that actually raised prices could nonetheless improve total welfare if the production efficiency gains resulting from the merger were greater than the consumer losses. He also concluded that relatively modest efficiency gains could achieve this goal.<sup>11</sup>



The figure shows the result of a merger, joint venture or other practice that both creates monopoly and produces gains in productive efficiency. Prior to the practice the market was competitive. Prices were at  $P_1$ , which is equal to cost  $C_1$ . The challenged practice causes two things. First, the firm's costs decline to  $C_2$ . Second, however, the firm acquires a monopoly and no longer prices at cost. Rather it reduces output to  $Q_2$  and raises price to  $P_2$ .

Under this model, which Williamson conceded to be highly simplified, consumer prices go up, producing a monopoly deadweight loss equal to  $A_1$  in the figure. However, productive efficiency also goes up, producing gains of  $A_2$ , which in this particular figure are clearly larger than the  $A_1$  losses. So the practice is efficient in the economic sense of increasing total welfare, even though prices are higher. While  $A_3$  also represents producer gains and consumer losses, it is a “wash” because producers are better off by the same amount as consumers are worse off.

Williamson's model has been subjected to a fair amount of criticism. First, if the merger facilitates market wide collusion, which is a common rationale for condemning mergers, then the price increases will occur across the market, but only the merging firms will enjoy the production cost savings. This could change the calculus considerably in collusion-facilitating mergers of, say, five-to-four players, or four-to-three players.

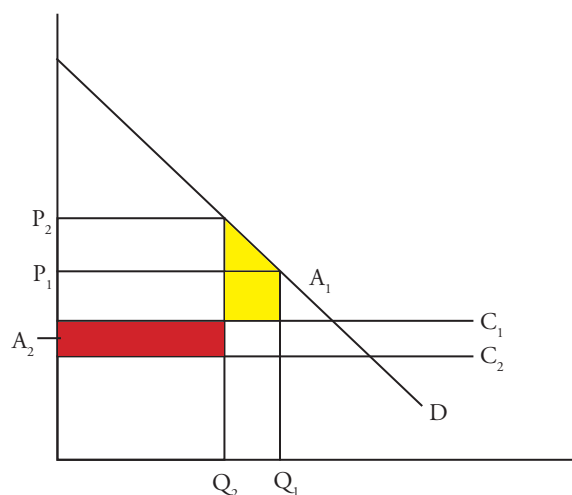
Second, the analysis assumes that the efficiencies are strictly “merger specific,” which means that only the merger that reduces competition can produce them. Often efficiencies can be attained in less harmful ways, including licensing as an alternative to acquisition, or partial spinoffs to other sellers.

Third, the efficiencies that Williamson's model illustrates usually have to come from some effect other than scale economies, because in the tradeoff situation output is actually lower than it had been before. To be sure,

some mergers can enable firms to take advantage of scale economies even as they reduce output. An example might be two firms that each have an inefficient 10,000 unit plant. After a merger the firm might produce 18,000 units efficiently out of a single larger plant. Note that the merger itself does not achieve this result, however. It simply leaves the firm with two inefficiently small plants. None of this is to suggest that there are no efficiencies that can be attained at reduced output; however, the universe of efficiencies that occur at lower rather than higher output may be small, particularly when one adds in the requirement that they must be merger specific.

Fourth, some care must be taken to ensure that the cost savings are not merely pecuniary. For example, a merger that creates a monopoly on the selling side might also create significant power on the buying side, enabling the firm to suppress the prices that it pays. But in that case any gains to the merging firm could be more than offset by the losses that accrue to its suppliers, and the case for overall efficiency evaporates.

Fifth, the Williamson model assumes a market that was perfectly competitive before the challenged practice but monopolized afterward. This would be a rarity. More likely the market prior to the merger or joint venture was already noncompetitive, but to a lesser degree. One of the reasons that Williamson's picture shows a small deadweight loss is because at the competitive level the sales are taken from "marginal" consumers who place a low value on the product. As a result, loss of these sales entails a fairly low deadweight loss. At higher levels the amount of surplus per consumer is much greater, making an output reduction of the same magnitude more costly. Further, at these higher levels any efficiency gains must be spread over a lower output.<sup>12</sup>



The second figure illustrates this idea. It shows the same market as the first figure, and with a merger or other practice that produces the same per unit cost reduction. In this case, however, the market was already noncompetitive to begin with, reflecting  $P1$  prices that were higher than cost  $C1$ . As a result two things happen. First, consumer deadweight loss is larger because output is being taken from consumers whose willingness to pay is higher in relation to the product's cost. Second, because output is already lower to begin with, the efficiency gains resulting from a further output reduction are spread over a smaller number of units. Even though the demand curve is identical to the one in the first figure and the per unit amount of the efficiency gains (the height of the rectangle  $A2$ ) is the same, it is now no longer clear that the area covered by the red figure is greater than the area of deadweight loss defined by  $A1$ .

Finally, note that the "tradeoff" model applies to a limited range of situations—namely, where the ef-

efficiency gain is sufficiently large to offset the deadweight loss, but not so large that it actually results in a lower price than before the merger or joint venture occurred. If the gains were that large there would be no tradeoff; both consumers and producers would be better off. It is difficult to say what percentage of mergers, joint ventures or other practices lead to both increased market power and a higher price, but offset production gains that exceed consumer losses.

One reason that the consumer welfare principle entirely dominates antitrust analysis is administrability. Anytime measurement makes a difference—that is, where a practice both facilitates an actual output reduction resulting from market power but also produces efficiencies—the fact finder would have to quantify these effects and net them out. That would require a cardinal measurement of deadweight loss and offsetting gains in production efficiency.

Measuring deadweight loss is much different from measuring simple consumer overcharges. Deadweight loss is equal to the amount of consumers' and producers' surplus that is lost as the result of a monopoly output reduction. Computing this requires knowledge about the demand and supply curves in a region where there is currently no output. Quantifying efficiency gains would require the fact finder to identify merger specific gains and then compute the value of either cost savings or product or service improvement over the post-practice output. I know of no court that has even attempted this in a situation where both numbers are positive and significant. Rather, they cite efficiencies as justifying a practice when no market power is present or it is clear that the practice is not reducing output at all. Alternatively, they cite competitive harm in situations where market power effects indicate an actual output reduction, ignoring efficiencies. The approaches taken in these two situations are tractable because there is nothing to balance.

ONE REASON THAT THE CONSUMER WELFARE PRINCIPLE ENTIRELY DOMINATES ANTITRUST ANALYSIS IS ADMINISTRABILITY. ANYTIME MEASUREMENT MAKES A DIFFERENCE—THAT IS, WHERE A PRACTICE BOTH FACILITATES AN ACTUAL OUTPUT REDUCTION RESULTING FROM MARKET POWER BUT ALSO PRODUCES EFFICIENCIES—THE FACT FINDER WOULD HAVE TO QUANTIFY THESE EFFECTS AND NET THEM OUT. THAT WOULD REQUIRE A CARDINAL MEASUREMENT OF DEADWEIGHT LOSS AND OFFSETTING GAINS IN PRODUCTION EFFICIENCY.

Setting aside these administrative difficulties, one historical defense of a total welfare approach is that producers compete with one another and will compete away any producer gains into consumer gains.<sup>13</sup> Of course, if we have calculated correctly, then the market power created by a practice will be sufficiently durable that we cannot have confidence that this will happen in the near term. More fundamentally, however, there is no reason for giving a preference to producer competition over consumer robustness. To the extent a practice makes a market bigger there will be more demand and more inducement to innovate. *A priori*, increased output and even efficiency is just as likely to “trickle up” from increased consumer demand as it is to trickle down from decreased producer supply.

Suppose that we have identified an efficiency that can be attained only by an output-reducing merger.

What will be the impact of a legal rule that prohibits this merger as long as the output reduction is likely? First, the firms might simply give up their efforts to attain this particular efficiency. Second, they might try to fix the merger in such a way as to preserve the efficiency but blunt the competitive harm; as a result, output will be



higher than previously, or at least not any lower. Third, they might try to attain the efficiency by some other means than merger. For example, a large firm that wants a smaller firm's technology might be able to get it with a nonexclusive license, which facilitates the efficiency but without the competitive harm. Fourth, they might attempt to increase the magnitude of any efficiencies so that resulting prices will be no higher than they were before, thus eliminating any need for trading off. Any one of these alternatives would make everyone better off. Given our inability actually to balance consumer harm from output reductions against productive efficiency gains, antitrust's insistence that a practice do no harm to consumers makes a good deal of sense.

Nevertheless, the importance of Williamson's conclusion remains: a significant set of mergers (or other practices, such as joint ventures) could exist in which the practice causes an actual market-power-induced price increase, but offsetting efficiencies make overall effects positive under a general welfare test. The window is narrow, however. The efficiencies must be large enough to offset deadweight loss, but not so large as to offset the consumer overcharge altogether.

When one looks at actual antitrust policy, the set of cases trading off actual productive efficiency gains against actual consumer losses is close to empty. Courts simply do not find, first, that a practice actually facilitates the exercise of market power and leads to higher prices, but second, that the practice should be approved because producer gains are bigger than consumer losses. Instead, while efficiency gains are important and often even central, the court must be assured that there are no consumer losses at all—either because market power cannot reasonably be exercised or else because the efficiency gains are so significant that they fully offset any market power effects.

What happens to the consumer welfare principle when we think about innovation and intellectual property policy? At first glance IP law seems different. Courts and other writers often speak of patent and copyright interests as “monopolies.” Inherent in the concept of exclusive IP rights is that they provide returns above the competitive level for a period long enough that developers can recoup their research and development costs.

If the IP system does what it should be doing, however, consumer loss is not an inherent part of the design. New innovation typically competes with existing technology, which largely stays in place. Consumers obtain the benefit of the new products or processes that IP rights make possible, and these should yield a surplus even at monopoly prices.

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Consider the world just before Pfizer's blockbuster drug Lipitor, which reduces LDL cholesterol, was brought to market. When Lipitor was not yet available it did not create a consumers' surplus, and consumers used whatever cholesterol-reducing products and activities that the market offered. The drug was then introduced at a very high price. Consumers were not injured by this transition, however, whether or not the price was set at monopoly levels. People who did not buy Lipitor were unaffected. Not only were the earlier alternatives still available, they may even have become cheaper by virtue of Lipitor's competition. By contrast, those who did buy Lipitor obtained at least as much value as its price. The fact that it is purchased at all entails that it is producing consumer wealth. Total output of cholesterol reducing formulations has gone up rather than down. To be sure, Lipitor might not be creating as much consumer wealth as it would if it were competitively priced, but it is clearly creating more consumer wealth than a market without Lipitor or its equivalent. The relevant comparison is not between competitively and monopoly priced Lipitor, but between monopoly-priced Lipitor and a market with no Lipitor at all.

A subset of patents operates differently in that the patents actually remove older consumer choices from the market. For example, a cost reducing process patent might give its owner so large an advantage over rivals that it is able to drive them out of business. Further, because consumers don't get to select the process, the older process might be unavailable as an alternative. Even here, however, the patentee would not be able to charge more for the product than it did before its new process was developed, because the older technology is still profitable at the pre-invention price. For example, suppose that under the older technology widgets could be produced for \$5 each. The patentee invents a technology that enables production of equally good widgets at \$4. As long as the patentee held its output price under \$5 it would be in a position to drive out rivals using the old technology. However, if it attempted to use its newly acquired monopoly position to set a price higher than \$5, the old technology would remain profitable. Consumers would not be worse off, and they could be much better off.

The all-important "welfare" question for legal policy is the role of the patent system in getting socially beneficial products and processes developed. Consumer harm does result when the intellectual property system provides more exclusionary power than is necessary to develop some new thing, or when it excludes without providing anything new at all. For example, if a 10-year patent rather than the actual twenty year patent was all that was needed to motivate the development of Lipitor, then the additional patent coverage is both a wealth transfer from consumers and a deadweight loss.

Consumer harm also results when the patent system permits a firm to obtain exclusive rights on something that is either publicly available or that soon would be in the ordinary course of events. That is hardly the case with Lipitor, a drug that was in very high demand after it was introduced, and that led to robust generic competition when the Lipitor patent expired late in 2011. In general, pharmaceutical patents on active ingredients are among the most robust patents in the system, and patent coverage is warranted for the soundest of reasons: development costs are high but copying costs are typically low. By contrast, "evergreened" extension patents on drugs, which are typically on new dosages or delivery mechanisms rather than the active ingredient, have a significantly higher failure rate and, when granted, can harm consumers by extending patent exclusivity periods.<sup>14</sup>

Patents are sometimes granted on ideas that do not meet patent law's requirement of nonobvious subject matter. These ideas would soon have been developed, or in some cases they have already been developed in areas that are not readily searchable. Certain industries, such as information technologies, or certain types of patents, such as software and business method patents, are particularly prone to such abuses. "Obvious" patents harm



consumers by creating exclusive rights in things that would otherwise sell competitively. The deadweight loss of obvious patents is high. As the previous discussion suggests, it tends to be higher in markets that are already noncompetitive to begin with, because marginal consumers in those markets have more consumers' surplus to lose. Many pharmaceutical extension patents very likely fall into this category.

The deadweight loss caused by obvious patents results partly from an overly generous patent-granting process. But we would have to put far more resources into patent examination and prosecution than we currently do in order to catch most problems effectively.<sup>15</sup> One thing that Congress could and should change is the statutory presumption of validity. The presumption is something of an oddball. Most presumptions are recognized because the association of two things is highly probable. For example, a letter that has been mailed is presumed to have been delivered, because nearly all are.<sup>16</sup> In that case it makes sense to assign the burden of proof to the person with the least plausible claim. But litigated patents are found to be invalid anywhere from one-third to one-half of the time, even under the current presumption.<sup>17</sup> Given that, the patentee should have the burden of proving its validity case, just as it must prove infringement and damages.<sup>18</sup> Nevertheless, Congress is unlikely to change the statutory presumption, and in 2011 the Supreme Court re-affirmed that it can be defeated only by clear and convincing evidence.<sup>19</sup>

More generally, the problem of socially harmful patents lies with a statutory drafting process in both patent and copyright law that has persistently placed producers in charge, paying little attention to consumer interests. That was true of the 1952 Patent Act, and even truer of the 1976 Copyright Act.<sup>20</sup> More recently the America Invents Act began as a series of high minded and excellent ideas but the drafting was quickly taken over by a veritable war among various producer groups. Consumer interests were largely ignored.<sup>21</sup>

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Permitting producers to control the law making process is sad because in this particular case consumers have the right set of incentives to produce optimal innovation policy. By and large consumer interests favor low prices, high output, high quality, and cost justified improvements.

Producer interests are much less aligned with the public interest, although their situation is far more complex. First, producers generally favor high margins on their own output, although they also want lower prices on inputs that they purchase from others. Second, to the extent producers are owners of intellectual property rights and profit either by excluding or licensing, they tend to regard more as better. They want longer terms and broader scope. By contrast, if they appear on the market as both owners (licensors) and licensees, their interests become more complex. If technology is fast moving and has a fairly short commercial life, as it is in many information technologies, then first mover advantages are more significant protectors of innovation returns. Patenting may be little more than a socially costly nuisance. In general, producers want their own patent portfolios to be as valuable as possible and those of rivals or others in a position to license to them to have as little value as possible. In many patent-rich environments firms that do a great deal of patenting profit from ambiguity and indeterminacy in the system. This hotchpot of producer interests is hardly calculated to produce an optimal system.

To be sure, some producers are aligned more closely with consumers. These tend to be firms that do not do a

great deal of protectable innovation themselves but who purchase their IP-protected inputs from other suppliers, and whose own IP portfolios are minimal—typically some trademarks and perhaps a few copyrights or trade secrets. A great deal of small business falls into this category, particularly retailing, as well as a fair amount of traditional manufacturing in commodity industries. But these groups have not been well represented in the patent legislation process either.

One well-known example of excessive producer orientation is the ever increasing length of copyright protection, even as the commercial shelf life of most copyrighted products is becoming shorter. If the incentive to produce requires a measured period of protection during a copyrighted product's commercial life, it follows that no protection should be required once the commercial life has come to an end. In fact, the vast majority of copyrighted works being produced today have a commercial life that falls far, far short of the century or so of

IN FACT, THE VAST MAJORITY OF COPYRIGHTED WORKS BEING PRODUCED TODAY HAVE A COMMERCIAL LIFE THAT FALLS FAR, FAR SHORT OF THE CENTURY OR SO OF PROTECTION THAT THE COPYRIGHT ACT OFFERS.<sup>22</sup> INDEED, FOR A SIGNIFICANT PORTION OF COPYRIGHTED WORKS, THE STATUTE DOES PRECISELY THE OPPOSITE OF WHAT IT SHOULD BE DOING: IT HAS MADE THE WORKS VIRTUALLY UNAVAILABLE.

protection that the Copyright Act offers.<sup>22</sup> Indeed, for a significant portion of copyrighted works, the statute does precisely the opposite of what it should be doing: it has made the works virtually unavailable. For example, out-of-print books published in 1923 or later may still be under copyright, but a researcher can obtain them only by going to a library or a used bookstore, which may or may not have them. The same thing is often true for journal articles, software, and at least a fair amount of music, photography and video content. Authors and assignees are getting either no or trivial royalties on these out-of-print works, but the public is not getting access to them either. One solution for this problem is a copyright act that is more aligned with our empirical knowledge about the changing value of copyright works over time. For example, a statute that offered a

short period of protection accompanied by a moderately costly right of periodic renewal would serve to keep things under protection as long as the copyright holder reasonably expected a positive commercial return.<sup>23</sup>

Unfortunately, the consumer interests that are best aligned with optimal innovation are also the interests that have the smallest amount of involvement in the IP systems themselves. In the copyright system consumers can be sued, although most of the lawsuits are limited to illegal downloading and pirating. Even in copyright, however, producers have largely controlled legislative processes. Patent infringement lawsuits against consumers are infrequent, and as a result the patent process is largely hidden from them. Most patent activity, even in patent-rich environments such as cell phones or computers, occurs upstream in the distribution chain. Excessive patent coverage or litigation costs are certainly reflected in higher consumer prices, but to most consumers the cause is invisible.

Quite naturally, when Congress seeks advice on how to improve patenting it goes to those who have the experience and expertise. This is a common occurrence and explains a great deal of regulatory capture. For example, those who generate electricity and must procure the technologies, build the networks, and determine the fuels know a great deal more about power generation than someone whose principal experience is turning on a light switch. For legislative or regulatory bodies to go to producers rather than consumers for regulatory

advice is hardly an irrational thing. But this makes the regulatory capture phenomenon much more fundamental to regulation than many people realize. Patent law is particularly prone to this. Not only is the law old, idiosyncratic, complex, and technical, but consumers are hardly involved in the process at all except indirectly as purchasers or users of patented technology. It is only natural for a legislative body or agency to go to those with the experience.

One important step toward greater consumer orientation would be development of a “political economy” of the patenting process, aligning patent doctrine more closely with economic or innovation effects. Here, antitrust has a distinct institutional advantage over patent law. Through decades of study, antitrust enforcers have developed empirically-supported models predicting how practices such as mergers affect pricing and output, the links between industry structure and propensity to collude, the values and costs of vertical integration and contract practices, and the like. One should not push the point too far, because empirical study has hardly eliminated controversy. Nevertheless, at a fundamental level, antitrust policy making today has an empirical content that is rooted in economic theory about how markets work.

Notwithstanding its strong identification with newness and innovation, patent law is in fact built on an ancient appropriation model borrowed from the law of property, particularly land titles, in which the economic effects of particular technical rules were seldom made explicit. In this sense patent law resembles property law before the rise of cost-benefit analysis approaches to public land use policy and environmental law. While economic studies of innovation are manifold and have produced a rich literature relating innovation rates to such things as market structure,<sup>24</sup> we know surprisingly little about the effects of specific patent doctrines.

As a result, patent law does a much poorer job of “metering” innovation than antitrust law does of metering competition, deficiencies notwithstanding.

One example of this is patent law’s nonobvious requirement, which differs from the novelty requirement and is much more difficult to apply. Novelty fails when something in the prior art reveals that the thing for which the patent is claimed already exists, a backward looking question asking whether something in the prior art anticipates all of the elements of a patent claim.<sup>25</sup> By contrast, non-obviousness, or “inventive step” in European law, considers whether a person skilled in this particular art would be likely to have come up with this idea on her own.<sup>26</sup>

Determining nonobvious subject matter requires going beyond what the prior art actually contains in order to assess whether someone of “ordinary” skill, and who is acquainted with the prior art in that field would be

FOR LEGISLATIVE OR REGULATORY BODIES TO GO TO PRODUCERS RATHER THAN CONSUMERS FOR REGULATORY ADVICE IS HARDLY AN IRRATIONAL THING. BUT THIS MAKES THE REGULATORY CAPTURE PHENOMENON MUCH MORE FUNDAMENTAL TO REGULATION THAN MANY PEOPLE REALIZE. PATENT LAW IS PARTICULARLY PRONE TO THIS. NOT ONLY IS THE LAW OLD, IDIOSYNCRATIC, COMPLEX, AND TECHNICAL, BUT CONSUMERS ARE HARDLY INVOLVED IN THE PROCESS AT ALL EXCEPT INDIRECTLY AS PURCHASERS OR USERS OF PATENTED TECHNOLOGY. IT IS ONLY NATURAL FOR A LEGISLATIVE BODY OR AGENCY TO GO TO THOSE WITH THE EXPERIENCE.

likely to come up with the invention independently. In the patent granting process non-obviousness queries typically involve situations where there are multiple pieces of prior art but no single piece fully anticipates a particular patent claim; or where the invention is anticipated in a different market, or “field of endeavor,” but not in the one where the patent is sought. In addition, the non-obviousness inquiry may involve considerations that do not show up in the patent prior art, such as acknowledged but unmet needs, or general experience and

EVEN WHEN REMEDIES ON UNPRACTICED PATENTS ARE LIMITED TO DAMAGES, MANY PATENTS HAVE A LITIGATION VALUE IN EXCESS OF THEIR TECHNOLOGICAL VALUE, WHICH MAY IN FACT BE ZERO. AS A RESULT, LARGE-SCALE LITIGATION BY PATENT AGGREGATORS IS ACTUALLY CREATING A MARKET FOR BAD PATENTS.<sup>35</sup>

understanding in an industry.<sup>27</sup> For example, evidence that others skilled in the art had tried to solve a problem but failed points toward nonobvious subject matter.<sup>28</sup> Examiners may also rely on their own expertise in a field to intuit whether the claimed invention is nonobvious. The Supreme Court has observed that in many fields there may be “little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends.”<sup>29</sup> The Patent Office’s examination guidelines acknowledge that the printed

prior art, both patent and non-patent, will not invariably answer every question.<sup>30</sup>

Neither the case law on nonobvious subject matter nor the patent examination guidelines suggest empirical studies of the extent to which accused infringers are copyists rather than independent inventors. Patent examiners have neither the time nor the resources to conduct such studies in determining whether to grant a particular patent. But the forward-looking question of ambiguity can never be addressed effectively by backward looking inquiries revealing what the prior art contains. The real thing we want to know is whether the inventor is contributing something that is worthy of an exclusive right because society was unlikely to get this particular invention through ordinary market processes.

Here, evidence about the extent of independent invention in different areas could be very helpful. The popular conception of a patent infringer may be the person who willfully copies someone else’s invention. In fact, the patent infringement case law reveals relatively few copyists. Only some 11 percent of complaints allege “willful” infringement and only 30 percent allege that a defendant actually knew about the patent it was infringing. Further, only 2 percent percent of reported decisions include a fact finding of actual copying.<sup>31</sup> This is all the more important because the Patent Act provides heightened damages for willful infringement.<sup>32</sup> If patentees knew that alleged infringers had copied their patented technology they would have every motive to bring willful infringement claims. Further, the copying numbers vary significantly by industry, ranging from a high of 20 percent in pharmaceuticals, where the value of copying is obvious, to very close to zero in biotechnology, semiconductors, electronics, and computers.<sup>33</sup> This suggests that in at least some markets numerous patents are being granted for technologies that were likely to be produced through ordinary competitive processes.

To be sure, distinguishing copying from independent invention is not necessarily easy. Someone who buys one unit of a patented product may be able to identify its patented technology without leaving much of a record. However, many patents relate to processes rather than products and are not readily discoverable. Many other patents are not practiced at all, and the only record of their existence is in the patent databases. An unpracticed patent is also creating no surplus: its only “value” is the limitation it places on others to develop and use the covered invention. As a result, granting enforcement of unused patents against independent discoverers of the

patent technology is perverse. It actually removes technologies from consumer availability, precisely the opposite of what the patent system should be contemplating. Subsequent to the Supreme Court's *eBay* decision the lower courts have increasingly been limiting remedies on unpracticed patents to damages.<sup>34</sup> But that is hardly a complete solution. Even when remedies on unpracticed patents are limited to damages, many patents have a litigation value in excess of their technological value, which may in fact be zero. As a result, large-scale litigation by patent aggregators is actually creating a market for bad patents.<sup>35</sup>

We have never developed a strong empirical literature on rates of independent discovery and how it varies from one technology to another. The "property" queries that the courts and examiners currently use are not well designed for determining the extent of independent invention. The evidence would certainly be market specific. For example, in the pharmaceutical industry it is highly unlikely that a firm would duplicate a patented molecule unless it had knowledge of the patent. By contrast, business method patents are routinely given on trivial changes in distribution that others often come up with on their own. Copying of minor advances is the way that competition works in many industries. The real impact of excessive business method patenting is to create unwarranted product differentiation that reduces market output while providing little or nothing in return.

Closely related is the problem of patent notice. The obligation to obtain information and the obligation to provide it are correlative. Optimizing requires that the obligation be given to the person who can act at the lowest cost. In general, the cost of providing notice is lower than the cost of searching.<sup>36</sup> Thus for example, the real property recording acts place the obligation to record on the landowner, who usually records once. Otherwise the prospective purchaser must do a lengthy and difficult history in order to determine land ownership. "Notice" in patent law requires two different things. First, one must be able to discover relevant patents; second, one must be able to interpret them once discovered. The problems are at least partially interrelated: if a patent is very difficult to interpret it will also be difficult to discover.

The economics of notice suggest that patentees should have the primary duty to provide realistic and timely notice to likely infringers. Of course, issued patents are searchable public records. That does not solve the problem, however, when an area of enterprise has thousands of patents that are cut very thin and notable for their ambiguity. In the context of standard setting the problem is beginning to be addressed through arrangements that require patentees who wish their patents to be declared standards essential to disclose them up front and promise to make them available on FRAND terms. Upon inspection, even standard-essential patents turn out frequently not to be worth much.<sup>37</sup>

Ambiguity undermines notice when a lengthy, costly interpretation of a patent is necessary before one can determine its coverage and the resulting expert opinions are frequently unreliable. Patent practice encourages ambiguity in many technologies by enabling drafters to have it both ways, particularly for subsequently developed technology. Ambiguity permits a broader construction if no objections are raised, but a narrower construction if the patent encounters problems on anticipation or non-obviousness grounds, or perhaps when the applicant cannot show that it was in "possession" of the invention as broadly construed, which is another way of saying that he did not have a complete conception of it. As Judge Plager wrote in a recent Federal Circuit decision:

Sometimes such ambiguity is the result of sloppy drafting, and sometimes it appears that claims are drafted with a degree of indefiniteness so as to leave room to later argue for a broad interpretation designed to capture later-developed competition. The problem is exacerbated when,



as here, there is a conflicting or indeterminate written description and prosecution history with regard to the claim terms at issue. Claim construction then becomes a game of crystal ball gazing, not resolved until this court's gaze is announced.<sup>38</sup>

Judge Plager then proposed that patent claim construction follow the general common law rule that ambiguous claims should be construed against the drafter.<sup>39</sup> That rule might require some adjustment for patents that have already been issued, but applied prospectively it would lead to clearer and more searchable patents. Indeed, the common law's one bite at the apple rule has always worked quite well for privately drafted documents of all sorts. Ambiguities are construed against the drafter and most of the time we do not permit adjustments after the fact. That gives the drafter a strong incentive for clarity the first time around.

## CONCLUSION

Giving recognition to consumer interests in intellectual property will require more than tweaking, although some tweaks could help. Further, because actually

GIVING RECOGNITION TO CONSUMER INTERESTS IN INTELLECTUAL PROPERTY WILL REQUIRE MORE THAN TWEAKING, ALTHOUGH SOME TWEAKS COULD HELP. FURTHER, BECAUSE ACTUALLY INCLUDING CONSUMERS IN THE LAW MAKING PROCESS MAY BE IMPRACTICAL, CONSUMER WISHES MAY HAVE TO BE INFERRED OBJECTIVELY FROM INFORMATION ABOUT PERCEIVED VALUE.<sup>40</sup>

including consumers in the law making process may be impractical, consumer wishes may have to be inferred objectively from information about perceived value.<sup>40</sup> In any event, rewriting IP law so as to serve consumers would require upending a good deal of history, producing a policy that is driven less by historical property rules and more by empirical economic study linking the benefits and costs of innovation to specific IP doctrines. The courts can certainly do some of the work. For example, the 1970s revolution that moved antitrust law away from small business protectionism was very largely a creature of the courts.<sup>41</sup> Mainly, however, reform would require a special effort by Congress to give properly identified consumer interests or their effective surrogate a seat at the legislative drafting table. ▲

1. Ben V. & Dorothy Willie Professor of Law and History, University of Iowa.
2. The substantial literature is discussed in CHRISTINA BOHANNAN & HERBERT HOVENKAMP, CREATION WITHOUT RESTRAINT: PROMOTING LIBERTY AND RIVALRY IN INNOVATION 7-11 (2012)
3. The American philosopher of science Charles Sanders Peirce made this observation already in the nineteenth century. See Charles S. Peirce, *Note on the Theory of the Economy of Research*, 1875 COAST SURVEY REPORT 197–201, reprinted in THE WRITINGS OF CHARLES S. PEIRCE: 1879–1884 at 73 (Christian J.W. Kloesel, ed., Bloomington: Indiana Univ. Press, 1989).
4. Dan L. Burk & Mark A. Lemley, Policy Levers in Patent Law, 89 Va. L. Rev. 1575 (2003); BOHANNAN AND HOVENKAMP, CREATION WITHOUT RESTRAINT 44-46.
5. See Herbert Hovenkamp, *Implementing Antitrust's Welfare Goals*, 81 FORDHAM L.REV. 2471 (2013) (discussing the alternatives); see generally Barak Orbach, *Forward: Symposium on The Goals of Antitrust*, 81 FORDHAM L.REV. 2451 (2013).
6. FTC Actavis, Inc. 133 S.Ct. 2223, 2238 (2013) (Roberts, C.J., dissenting, joined by Justices Scalia and Thomas; Justice Alito did not participate).
7. See 2B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶500 et seq (4th ed. 2014) (market power generally); 4 id. ¶901 (3d ed. 2009) (mergers).
8. 12 id. ¶2004 (3d ed. 2012).

9. Broadcast Music, Inc. v. Columbia Broadcasting Sys., Inc., 441 U.S. 1, 5, 11 (1979) (Members “retain the rights individually to license public performances, along with the rights to license the use of their compositions for other purposes”).
10. US Department of Justice, Antitrust Division, and Federal Trade Commission, Horizontal Merger Guidelines §10 (2010, available at <http://www.justice.gov/atr/public/guidelines/hmg-2010.html#10>).
11. Oliver E. Williamson, *Economies as an Antitrust Defense: The Welfare Tradeoffs*, 58 AM.ECON.REV. 18, 21 (1968).
12. See Areeda Hovenkamp ¶970e (4th ed. 2014). Williamson also acknowledged the point: Oliver E. Williamson, *Economies as an Antitrust Defense Revisited*, 125 Univ. Penn.L.Rev. 699, 710 (1977).
13. See ROBERT H. BORK, *THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF* (1978).
14. See, e.g. Ely Lilly & Co. v. Sicor Pharma., Inc., 426 Fed. Appx. 892 (Fed. Cir. 2011) (pharmaceutical extension patent invalid for obviousness-type double patenting); Anthony M. Insogna, et. al, *Obviousness-Type Double Patenting*, 5 LANDSLIDE 37 (No. 1 2012).
15. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. UNIV.L.REV. 1495 (2001).
16. E.g., Echavarría v. Nat. Grant Mut. Ins. Co., 275 Conn. 4008 (2005); JOHN HENRY WIGMORE, *EVIDENCE* §2519 (Chadbourn ed. 1981 & Supp.).
17. WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 338 (2003).
18. Douglas G. Lichtman and Mark A. Lemley, “Presume Nothing: Rethinking Patent Law’s Presumption of Validity”, in *COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY: REGULATING INNOVATION* (Geoffrey A. Manne & Joshua D. Wright, eds., 2011).
19. 35 U.S.C. § 282. See *Microsoft Corp. v. i4i Ltd. Partnership*, 131 S.Ct. 2238 (2011).
20. On patents, see HERBERT HOVENKAMP, *THE OPENING OF AMERICAN LAW: NEOCLASSICAL LEGAL THOUGHT, 1870-1970*, ch. 10 (2014); on copyright, see BOHANNAN & HOVENKAMP, *CREATION WITHOUT RESTRAINT*, *supra* 137-140; William Patry, *Copyright and the Legislative Process: A Personal Perspective*, 14 CARDOZO ARTS & ENT. L.J. 139, 141 (1996).
21. On the interest groups that drove the America Invents Act, see Zach Carter, *The Spoilsmen: How Congress Corrupted Patent Reform*, HUFFINGTON POST (Oct. 4, 2011, 6:12 AM), [http://www.huffingtonpost.com/2011/08/04/patent-reform-congress\\_n\\_906278.html](http://www.huffingtonpost.com/2011/08/04/patent-reform-congress_n_906278.html); Steve Lohr, *Inventor Challenges and a Sweeping Revision in Patent Law*, N.Y. TIMES (Aug. 26, 2012), <http://www.nytimes.com/2012/08/27/technology/mark-stadnyk-challenges-sweeping-revision-in-patent-law.html>; Amanda Becker, *Patent Reform Measure Ignited Fierce Lobbying Effort*, WASH. POST (Mar. 27, 2011), [http://articles.washingtonpost.com/2011-03-27/business/35208767\\_1\\_first-to-file-system-patent-system-patent-office](http://articles.washingtonpost.com/2011-03-27/business/35208767_1_first-to-file-system-patent-system-patent-office). See also Charles E. Miller & Daniel P. Archibald, *Beware the Suppression of District-Court Jurisdiction of Administrative Decisions in Patent-Validity Challenges Under the America Invents Act: A Critical Analysis of a Legislative Black Swan in an Age of Preconceived Notions and Special-Interest Lobbying*, J. PAT. & TRADEMARK OFF. SOC’Y 124, 135 (2013); David Orozco, *Administrative Patent Levers*, 117 PENN. ST. L. REV. 1, 49–50 (2012); Renee Kaswan, David Boundy & Ron Katznelson, *Patent Reform: Effects on Medical Innovation Businesses*, PAT. & INNOVATION ECON., Summer 2010, at 11–12.
22. The basic protection is seventy years plus life of author. 17 U.S.C. §302(a). See *Eldred v. Ashcroft*, 537 U.S. 186, 219 (2003) (upholding Congressional retroactive extension of copyright term).
23. See BOHANNAN & HOVENKAMP, *CREATION WITHOUT RESTRAINT*, *SUPRA*, 400-401.
24. See *id.*, 8-11; Wesley Cohen & Richard Levin, “Empirical Studies of Innovation and Market Structure,” in 2 *HANDBOOK OF INDUSTRIAL ORGANIZATION* 1059–1107 (Richard Schmalensee & Robert Willig eds., 1989).
25. See 35 U.S.C. §102(a), (d), (e).
26. 35 U.S.C. §103.
27. *KSR Intern. Co. v. Teleflex, Inc.*, 550 U.S. 398, 420-421 (2007).
28. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).
29. *KSR*, 550 U.S. at 419.
30. See USPTO, *Examination Guidelines for Determining Obviousness under 35 U.S.C. §103* (last modified Sep. 13, 2012), available at <http://www.uspto.gov/web/offices/pac/mpep/s2141.html>.
31. Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law*, 87 N.C.L. REV. 1421, 1422, 1450–51 (2009) (proof of copying uncommon in patent infringement cases, except pharmaceuticals); Mark A. Lemley, *Should Patent Infringement Require Proof of Copying?*, 105 MICH. L. REV. 1525 (2007); Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 MICH. L.REV. 475 (2006).
32. 35 U.S.C. § 284. *In re Seagate Tech. LLC*, 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc).

33. Cotropia and Lemley, *id.* at 1456.
34. *eBay, Inc. v. MercExchange*, 547 U.S. 388 (2006) (injunction as remedy for patent infringement not automatic). See *Ricoh Co., Ltd. v. Quanta Computer Inc.*, 2010 WL 1607908 (W.D.Wis. 2010) (denying injunction to non-practicing entity). However, the courts are not unanimous. See, e.g., *Callaway Golf Co. v. Acushnet Co.*, 585 F.Supp.2d 600 (D.Del. 2008) (granting permanent injunction even though patentee owner no longer manufactured the device incorporating the patent). See also *Paice LLC v. Toyota*, 504 F.3d 1193, 1314 (Fed. Cir. 2007) (noting possibility of ongoing royalty in lieu of injunction).
35. See Erik N. Hovenkamp, *Predatory Patent Litigation* (Northwestern Univ. Economics Working Paper, Aug. 5, 2013), available at SSRN, abstract #2308115.
36. See Hovenkamp, *Notice and Patent Remedies*, 88 TEX.L.REV. ONLINE 221 (2011), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1596789](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1596789).
37. See, e.g., *Microsoft Corp. v. Motorola, Inc.*, 2013 WL 2111217 (W.D.Wash. Apr. 25, 2013). See Herbert Hovenkamp, "Competition in Information Technologies: Standards-Essential Patents, Non-Practicing Entities, and FRAND Bidding," *INTERNATIONAL ANTITRUST LAW & POLICY* 439 (2013 Competition Law Institute, Fordham Univ. School of Law), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2154203](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2154203).
38. *3M Innovative Properties Co. v. Tredegar Corp.*, 725 F.3d 1315, 1335 (Fed. Cir. 2013) (Plager, J., concurring).
39. *Id.* at 1336.
40. Cf. GUIDO CALABRESI, *THE COST OF ACCIDENTS: A LEGAL AND ECONOMIC ANALYSIS* (1970) (when those about to have an accident cannot actually bargain to the most efficient result the legal system should try to predict the result of a free bargain, typically by assigning liability to the person able to avoid the accident at lowest cost).
41. See BOHANNAN & HOVENKAMP, *CREATION WITHOUT RESTRAINT*, *supra*, Ch. 33-59.