1997

The Economics of Innovation: Protecting Unpatentable Goods

Douglas Gary Lichtman

Follow this and additional works at: https://scholarship.law.umn.edu/mlr

Part of the Law Commons

Recommended Citation
https://scholarship.law.umn.edu/mlr/1164

This Article is brought to you for free and open access by the University of Minnesota Law School. It has been accepted for inclusion in Minnesota Law Review collection by an authorized administrator of the Scholarship Repository. For more information, please contact lenzx009@umn.edu.
The Economics of Innovation: Protecting Unpatentable Goods

Douglas Gary Lichtman*

In many ways, legal rules seem hopelessly irrelevant to a real understanding of innovation. Forget what the patent laws say. Ignore economic principles. Edison was destined to be an inventor, Barishnikov was born to be a dancer, and no matter what the legal rules, Edison would no more have stopped inventing than Barishnikov would have stopped dancing. On the individual level, innovation is not about law.

On a broader level, of course, legal rules do have an impact on innovation. Patent law creates ownership rights in the results of certain types of innovation. This attracts investment capital to those research efforts, arming modern-day Edisons with the resources they need to develop innovative ideas.

For innovators developing unpatentable goods, however, federal law offers little solace. Unpatentable innovation can be both expensive and worthwhile; yet patent law does nothing to attract investment capital to unpatentable research. State laws specifically designed to remedy this imbalance have frequently been struck down by courts too quick to read the word “unpatentable” to mean “unprotetable.” The result is a modern intellectual property regime that underrewards (and hence a society that underproduces) unpatentable innovation.


This Article argues that, when appropriately crafted, state laws designed to protect unpatentable innovation neither conflict with the policies underlying federal patent law nor undermine patent law's incentive structure. Unpatentable need not mean unprotectable. Instead, state laws that merely prohibit the unauthorized use of particularly fast and inexpensive copying techniques actually complement the federal scheme, encouraging innovation in areas where patent law simply cannot reach.

To place these issues in their proper context, Part I briefly traces the history of the state law/federal law conflict in Supreme Court jurisprudence. This Part introduces the negative inference of patent law, the dubious assumption that by virtue of its being denied patent protection, unpatentable innovation must be denied all forms of state protection as well.

Part II develops a simple model of an idealized, efficient intellectual property regime. It argues that development costs—costs incurred by an innovator in the production of an original good that are neither repeated by that innovator in the production of a later copy nor repeated by a competitor in the production of his first copy—establish the baseline level of rewards that an efficient system would grant to innovators. Rewards might exceed this baseline, but they ought never to fall below it.

In Part III, the Article compares the real-world patent system to this simplified, idealized alternative. It points out differences, suggests explanations, and argues that appropriately crafted state laws can help the real-world patent system to more closely approximate the idealized model. Part IV suggests that state protections will neither conflict with federal patent policies nor undermine patent law's incentives so long as the statutes allow innovators to recoup only their development costs. Part V then shows that the laws advocated here—narrow protections that prohibit the unauthorized use of particularly fast, inexpensive copying technologies—are so limited.

The Article concludes by warning that unpatentable innovation is more at risk today than ever before. Copying technologies are increasingly cheap, fast, and accessible; and valuable intellectual property is more often in the form of raw information, an inherently copyable good. The federal regime cannot keep pace with this ever-changing landscape; therefore the need for appropriately limited state protections is all the more pressing. State law can provide for a more graceful
transition from the strong protections of federal patent law to the competitive realities of the unfettered market, if only the courts would allow it. This Article will attempt to explain why they should.

I. SUPREME COURT JURISPRUDENCE

Although the Supreme Court did not directly consider narrowly tailored state protections of unpatentable goods until the 1989 case of Bonito Boats, Inc. v. Thunder Craft Boats, Inc., two cases in the preceding thirty years set the stage for the Bonito decision. This Part begins by highlighting those three cases, then confronts Bonito and its troubling implications.

A. THE ROAD TO BONITO

In Sears, Roebuck & Co. v. Stiffel Co., the Supreme Court considered a state law that seemed to completely prohibit the copying of an unpatented good. Sears, hoping to copy the good, challenged the law, arguing that because the product was not patentable, state law could not prohibit the copying. The Court agreed, explaining that patent law not only defines which innovations qualify for patent protection, but, by negative inference, also defines which innovations must remain free for all to use.

The Court’s decision in Compco Corp. v. Day-Brite Lighting reaffirmed this negative inference of patent law. "To for-

---

3. 376 U.S. 225 (1964). The dispute involved Stiffel's design for the "pole lamp," a "vertical tube having lamp fixtures along the outside, the tube being so made that it will stand upright between the floor and ceiling of a room." Id. at 225-26. The lamp was a huge commercial success but was deemed to be too "obvious" to warrant patent protection. Id. at 231. A lower court already had held Stiffel's patents on the lamp to be invalid, so the Supreme Court faced only the question of whether Illinois's "unfair competition" statute could prohibit Sears from selling a virtually indistinguishable product. Id. at 227-28.

A complete discussion of unfair competition statutes and their role in protecting against consumer confusion (as distinct from their role in protecting intellectual property more generally) is beyond the scope of this Article. The interested reader is encouraged to consult J. THOMAS MCCARTHY, TRADEMARKS AND UNFAIR COMPETITION §§ 23:1-23:35 (2d ed. 1984).

4. Sears, 376 U.S. at 231 ("An unpatentable article . . . is in the public domain and may be made and sold by whoever chooses to do so.").
5. 376 U.S. 234 (1964). Decided on the same day as Sears, Compco involved a dispute over the design of a fluorescent lighting fixture. Again, the original innovator had received a patent; again, a lower court had held that patent to be invalid for want of inventiveness. Id. at 235. The question that
bid [the] copying [of an unpatentable good] would interfere with the federal policy ... of allowing free access to copy whatever the federal patent and copyright laws leave in the public domain. Patent law, by denying patent protection, was interpreted as prohibiting state protection as well.

In *Kewanee Oil Co. v. Bicron Corp.*, however, the Court carved out an exception to this negative inference. *Kewanee* concerned state trade secret law, a body of law that protects "secret" business information from unauthorized duplication. Trade secrets are valuable but unpatentable goods. According to the logic of *Sears* and *Compco*, state laws protecting them should be held invalid. In *Kewanee*, however, the Court upheld state trade secret law. In what was later described as a "pragmatic approach," the Court suggested that trade secret law offers such weak protection that, despite the negative inference, state protection is permissible. The Court reasoned:

Where patent law acts as a barrier, trade secret law functions relatively as a sieve. The possibility that an inventor who believes his invention meets the standards of patentability will sit back, rely on trade secret law, and ... forfeit any right to patent protection ... is remote indeed.

By providing significantly "weaker protection" than patent law, state trade secret law survived preemption.

remained before the Court was whether the fact that the two fixtures were "the same, to the eye of the ordinary observer, as [to their] overall appearance" was enough to justify significant state protection under Illinois's broad "unfair competition" statute. *Id.*

6. *Id.* at 237.

7. 416 U.S. 470 (1974). In *Kewanee*, one chemical company confronted another in a battle over the intellectual property rights to a process by which the original company had grown the world's first seventeen-inch crystal. The process was not patented, but the employees involved had all signed agreements promising not to disclose its details. *Id.* at 473. Ohio law purported to make such agreements binding, and circumstances indicated that those promises had been broken. Thus the Court was once again faced with an apparent conflict between a state law protecting unpatentable innovation and patent law's supposed "negative inference." *Id.* at 474.

8. Trade secrets are secret in the sense that they derive "economic value ... from not being generally known to, and not being readily ascertainable ... by, other persons ... ." D. CHISUM & M. JACOBS, UNDERSTANDING INTELLECTUAL PROPERTY LAW § 1B[2] (1992) (quoting Uniform Trade Secrets Act § 1(4)). For example, the process by which carbonated water, fructose corn syrup, and sodium benzoate become Coca-Cola is a trade secret.


12. *Id.* at 489.
B. THE *BONITO* DECISION

Although when taken individually the analyses in *Sears*, *Compco*, and *Kewanee* produced reasonable results, the net effect of the decisions was nothing short of confounding. While patent law’s supposed negative inference meant that state law could not protect unpatentable goods, the logic of *Kewanee* implied that weak state protections were nonetheless permissible. The issue presented in *Bonito* thus became the acid test: Outside the context of trade secret law, would the Court tolerate a weak state statute that protected unpatentable innovation against unauthorized duplication?

The facts in *Bonito* were straightforward. Bonito had invested substantial resources in the development of an innovative, but unpatentable, boat hull. Thunder Craft, a competitor, copied the finished product through a process called “direct molding,” whereby the original served as a mold for the duplicate. The Florida legislature had explicitly forbidden this form of unauthorized duplication; accordingly, Bonito sued, arguing that state law protected the boat hull even though federal law did not.13

The Court’s analysis in *Bonito* followed the logical framework established by cases like *Sears* and *Kewanee*. First, the Court discussed the negative inference of patent law: “Taken together, [patent law’s threshold requirements] express a congressional determination that the purposes behind the Patent Clause are best served by free competition and exploitation of [all unpatentable goods].”4 The Court interpreted patent law as intimating a “federal policy of favoring free competition in ideas which do not merit patent protection.”5 The Florida statute seemed to conflict with this policy.

The Court next evaluated the strength of the state law. The statute prohibited only one copying process (direct molding) and prohibited this process only as it applied to boat hulls

---

13. A more complete version of the facts can be found in *Bonito*, 489 U.S. at 144-45.
14. *Id.* at 150. The Patent Clause empowers Congress to create patent law in order to “promote the Progress of Science.” U.S. CONST. art. I, § 8, cl. 8; see also *Bonito*, 489 U.S. at 151 (“To a limited extent, the federal patent laws must determine not only what is protected, but also what is free for all to use . . . .”).
and other boat components. The Court nevertheless deemed this to be too strong a form of protection:

The rights offered by the statute are similar in scope and operation to the rights accorded a federal patentee. Like the patentee, the beneficiary of the Florida statute may prevent a competitor from “making” the product in what is evidently the most efficient manner available and from “selling” the product when it is produced in that fashion.

This raised several serious concerns. A strong state law could become a “significant competitor” to the federal patent system, luring innovations away from patent law and toward concomitant state protections. Strong state laws could also interfere with patent law’s incentives. As the Court explained, “[T]he competitive reality of [not protecting certain goods] may act as a spur to the inventor, creating an incentive to develop inventions that meet the rigorous requirements of patentability.” The Florida law—according to the Court—undermined this incentive.

On the basis of this analysis, the Court held that federal patent law preempted the state statute: “[I]deas in general circulation [must] be dedicated to the common good unless they are protected by a valid patent.” Florida’s law interfered with this fundamental principle and was therefore struck down.

C. Bonito’s Implications

To explore the implications of the Bonito decision, consider two hypotheticals. First, imagine that a boat manufacturer, BoatCo, is thinking of investing in the next generation of recreational boats. Two improvements are within reach, a new hull design and a new engine design. Because of Bonito, how-

16. FLA. STAT. ANN. § 559.94(2) (West 1988) (repealed 1991) (“It is unlawful for any person to use the direct molding process to duplicate for the purpose of sale any manufactured vessel hull or component part of a vessel made by another without the written permission of that other person.”).
17. Bonito, 489 U.S. at 158.
18. Id. at 161.
19. Id. at 160; see also id. at 157 (“[T]hrough the creation of patent-like rights, the States could essentially redirect inventive efforts away from the careful criteria of patentability developed by Congress over the last 200 years . . . ”).
20. Id. at 159-60 (quoting Lear, Inc. v. Adkins, 395 U.S. 653, 668 (1969)).
21. This is precisely the proposition for which Bonito now stands. See, e.g., Rasmussen & Assocs. v. Kalitta Flying Serv., 958 F.2d 896, 904 (9th Cir. 1992) (“[A] machine or process that does not satisfy the requirements of federal patent law . . . cannot be protected under either federal or state law.”) (citing Bonito).
ever, these two improvements are not equally appealing. BoatCo is much more likely to invest in engine improvements. Such improvements are patentable, ensuring BoatCo exclusive ownership of the resulting innovation. The same is not true for boat hulls. Boat hulls are unprotected and unprotectable; any competitive advantage that BoatCo can "buy" through research will be quickly lost through unauthorized duplication. Thus, Bonito results in drastic underinvestment in boat hulls and other unprotected innovations. Although society would be better off with boats that have both improved engines and improved hulls, after Bonito, manufacturers will disproportionately favor engine improvements.

To further understand the implications of Bonito, picture two goods: innovation A and innovation B. Assume that they are of approximately equal value to society, but that innovation A fails to qualify for patent protection whereas innovation B qualifies. Note that these are not contrary assumptions. To qualify for federal protection, an innovation must satisfy three requirements: It must be utile ("operable and capable of satisfying some function of benefit to humanity"); novel (not fully anticipated by any other single invention); and nonobvious (inventive or creative). Innovation A might therefore be more "obvious" than innovation B (thereby failing to qualify for patent protection) but still be equally valuable to society.

Under Bonito, innovation B (the patentable innovation) will be generously rewarded. Its innovator will receive a patent, a legal monopoly on the right to sell, use, and make the innovation. Innovation A, by contrast, will be significantly underrewarded. By virtue of being denied patent protection, innovation A will be denied all forms of protection. Thus, although the two goods are virtually indistinguishable except for

22. Some boat hull innovation will, of course, continue. The hypothetical is meant only to point out that (unpatentable) boat hull innovation will be far less attractive than (patentable) engine design.
24. CHISUM & JACOBS, supra note 8, at § 2C[2].
25. The nonobviousness requirement "means that not all new and useful inventions qualify for patent protection." Id. at § 2C[4]. Indeed, any invention that is more the product of hard work than it is the result of insightful innovation will fail this prong (and be denied patent protection). Semiconductor chips fell into this category until a separate federal regime was created to protect them. See infra notes 56-58 and accompanying text. Patent law's threshold requirements do not test for social utility per se.
a slight difference that places one above the patent threshold and the other below it, they will receive significantly different levels of protection. *Bonito* mandates this result; logic questions it.  

This argument does not mean to suggest that boat hulls and type-A goods will never be produced. Boat manufacturers occasionally do introduce new, unpatentable designs. Instead, the argument suggests that such innovations will be underproduced. Society would willingly pay for the creation of more of these goods if only the law would allow it. As one scholar explained:  

If a potential customer believes she can obtain a resource for free [by unauthorized copying], she is unlikely to pay anything for it, even if she would have been willing to pay a significantly high price for it if that were the only way to obtain the resource.  

By invalidating a state statute simply because it prohibited the unauthorized duplication of an unpatentable good, the *Bonito* Court seems to have missed this point. Unauthorized duplication deprives consumers of their practical ability to reward innovators. This, in turn, deprives society of worthwhile innovation, violating the fundamental purpose of patent law.  

II. A MODEL INTELLECTUAL PROPERTY REGIME  

Our critical analysis of *Bonito* starts with a simple model. Later, this model will help to redefine patent law's negative inference and the role "weakness" plays in the relationship between state and federal law. For now, however, the model is designed only to crystallize several fundamental aspects of efficient intellectual property protection.  

An innovation's "development costs" include all costs incurred in the production of an original innovation that are nei-

---

26. This point is even more disturbing considering how difficult it is to distinguish between type-A and type-B goods. Is an innovation sufficiently nonobvious? Is it novel and useful? Surely these questions do not lend themselves to clear, precise, or consistent answers. Yet, under *Bonito*, the answers to these questions result in wildly disparate treatment for potentially comparable goods.  

This does not necessarily lead to the conclusion that type-A and type-B goods merit the same level of protection. The core concern is the severity of the contrast: strong patent protection on the one hand, the unbridled free market on the other. Where it is difficult to distinguish between these two types of goods, perhaps the contrast ought not be so sharp.  

ther repeated by the innovator in the production of a later copy nor repeated by a competitor in the production of his first copy. Development costs are expenses that innovators incur but imitators avoid. In *Bonito*, for example, Bonito spent money developing engineering drawings and building a hardwood model. These investments are the hull's development costs. They are costs that Bonito incurred only once, and they are costs that Thunder Craft was able to avoid by copying Bonito's finished product.

Development costs are the reason why society needs intellectual property protection in the first place. Consider the production of apples. As I have defined the term, there are no development costs associated with apple production. The fact that Farmer A has already brought an apple to market gives Farmer B no economic advantage. Contrast this with the production of a short story. No matter how much energy Innovator/Author A expends developing an interesting plot and envisioning complex characters, Imitator/Author B can duplicate the finished story at little to no cost. In the end, both will have possession of a manuscript; but only A will have invested the energy and incurred the expense of actually creating the innovation.

This simple fact creates enormous difficulties in the marketplace. Without intellectual property protection, an innovator would bring a new idea to market only to find that his competitors would quickly have their own versions of that same idea. Worse still, the imitators would enjoy a significant competitive advantage since their development costs (the costs of copying) would be relatively small compared to the innovator's development costs (the full creative investment.)

28. As noted supra note 1, development costs—even for unpatentable goods—can be significant. California's "direct molding" statute was passed after manufacturers of ceramic spas reported that original spa molds cost between $20,000 and $40,000, but unauthorized copies could be made by competitors for less than $3000. Ralph S. Brown, *Design Protection: An Overview*, 34 UCLA L. REV. 1341, 1391 n.223 (1987).

29. Although a short story falls under the purview of federal copyright law, the example is used here because it offers an intuitive, familiar way to explain development costs. For examples within the subject matter of patent law, see infra note 58 (semiconductor chips) & supra note 28 (ceramic spas).

30. To the extent that copying is a slow process, the original innovator will enjoy the advantages of being first to market. See infra note 54 and accompanying text (discussing lead time). However, as copying technology is becoming faster, cheaper, and more accessible, these advantages are becoming less and less significant.
ing this, few would want to be innovators, preferring instead to wait and free-ride on someone else's good idea.

Development costs establish not only the need for intellectual property protection, but also the minimum level of protection required. Consider an innovator who is planning to design a new radio receiver. If he knows that his development costs will be $200 but that the intellectual property regime will reward his receiver with protection worth only $50, he will never make the original investment. Moreover, even if he were willing to proceed with the project, he would find it difficult to attract investors willing to fund his work, since the investors would be paying $200 to purchase a $50 property right. Thus, effective intellectual property protection must, at a minimum, promise to reimburse innovators for their development costs.

This is only the minimum level of protection. An optimal incentive system would offer incentives above this level both to compensate innovators for the risks of innovation and to help them internalize societal preferences for certain goods. The

31. An efficient incentive system would also encourage innovators to develop their goods at low cost. If an innovator is capable of developing a product at a cost of $50, the ideal intellectual property regime would encourage the innovator to spend only that amount. An inefficient system would leave the innovator indifferent between the $50 approach and a more expensive alternative. The patent system provides the appropriate incentive (see infra note 43); so, too, do state laws of the type advocated in this Article (see infra note 88).

32. To understand how the risks of innovation might change the efficient level of incentives, consider a firm that is researching five different innovations. If only three of those innovative efforts are successful, the firm will have devoted capital to five research efforts but it will be rewarded for only three. Thus, for the firm to stay in business, the compensation it receives for its three successes must be sufficient to underwrite the development costs of all five attempts.

This same logic applies to an innovator working on only one innovation. This innovator—an innovator who does not know whether his investment will lead to success or failure—will invest in a new idea only if the rewards from success sufficiently outweigh both the costs of success and the risks (and accompanying costs) of failure. A system that paid only development costs (the costs of success) would pay nothing toward this risk premium and therefore would not sufficiently reward the innovator.

33. An incentive system based on development costs and adjusted for risk would still be inefficient, because society values certain innovations more than others. A breakthrough in nuclear fusion technology, for example, might be more valuable to society than a breakthrough in stereo design. Thus, even if these innovations have the same development costs and the same inherent risk of failure, society would want to reward fusion technology at a higher level than stereo design. This extra incentive would help innovators internalize societal preferences for (in this case) advances in fusion technology.
level of these “extra” rewards is more a question of policy than economics; reasonable arguments can be made for a variety of options. The critical insight here is that the minimum level, defined by development costs, is a matter of economic fact. Incentives above this level might make society better off, but incentives below this level will necessarily make society worse off.34

If every innovation is to be rewarded for at least its development costs, then an efficient intellectual property regime must be able to offer rewards over a wide range of values. Innovations with development costs of $X must lead to rewards of at least $X. Innovations with development costs of $(X+1) must lead to rewards of at least $(X+1). Figure 1 captures this simple relationship.

Figure 1

A breakpoint (or discontinuity) anywhere in this range leads to inefficiency. Imagine that we were to increase the level of rewards, moving part of the line up (Figure 2). This might overreward certain innovations, artificially attracting more research capital to these development efforts. Alternatively, if we were to decrease the level of rewards, thereby moving part of the line down (Figure 3), certain goods would be underrewarded, inadequately reimbursing innovators and therefore inadequately attracting research capital.

34. One caveat bears mention. This model assumes that all innovation is worthwhile. Obviously, this is not true. If a particular innovation’s development costs exceed its societal value, the patent system should neither encourage its development nor, once developed, reimburse development costs in full. These issues will be addressed infra note 44 and accompanying text.
In summary, simple economic analysis suggests that development costs are the driving force behind intellectual property protection. They are the reason society offers intellectual property protection, and they establish the minimum level of that protection.

III. THE FEDERAL PATENT SYSTEM

If the federal patent system perfectly simulated the idealized model just described, there would be neither a place nor a need for state protections. Thus, this section sets out to find that place and establish that need. The section begins with a brief explanation of how patents work, then progresses to a broader discussion of the federal patent system, its weaknesses, and evidence that those weaknesses matter.

A. HOW PATENTS REWARD INNOVATORS

A patent creates a simple monopoly. It grants to an original innovator the exclusive right to make, use, and sell an innovation for a fixed number of years.35 A patent allows an innovator to earn monopoly profits as a reward for his initial investment. The market determines the exact size of that reward; the government grants the monopoly but consumers ultimately determine its worth.36

---


36. The market-based patent system is so familiar that modern audiences often forget that there are other options. In 1714, for example, England was desperately searching for a device that might help sailors navigate the seas.
Understanding this process requires the definition of four terms: 37

1. **Consumer surplus** is the difference between what a consumer would be willing to pay for a good and the price that consumer actually pays. If a consumer buys a television he values at $100 for a price of only $60, he enjoys a consumer surplus of $40.

2. **Producer surplus** is the corresponding concept for producers. If a producer sells a television that costs him only $50 to produce at a price of $60, he receives a surplus of $10.

3. **Societal value** is the sum of consumer and producer surplus. This is the inherent worth of a good. No matter how this value is ultimately divided between consumers and producers, this is the benefit that society receives from having the innovation.

Parliament passed a statute offering a prize of approximately $12 million (in today's figures) to anyone whose device or process could "determine longitude to an accuracy of one-half a degree of a great circle." Dava Sobel, Longitude 53 (1995) (citing the Longitude Act issued during the reign of Queen Anne on July 8, 1714). The winner—and note the interesting parallels to patent law—not only had to surrender the device "for the Use of the Public" but also had to supervise the production of a duplicate. Id. at 84, 129 (quoting requirements as established by the Board of Longitude).

A "prize system"—a series of awards like those devised in eighteenth century England, offered by the government in order to encourage specific innovative tasks—could accomplish many of the goals of patent law without the use of either monopolies or markets. True, there would be risks; the prize system is vulnerable to both abuse (Queen Anne favoring her preferred scientist) and error (paying too much money for one innovation, too little for another). However, such a system would have one compelling advantage: Under the prize system, innovations instantly become part of the public domain, free to be enjoyed and improved upon by both users and innovators alike.

Commentators occasionally discuss variants of the prize system even today. For example, an economist at the Massachusetts Institute of Technology recently suggested replacing patents on pharmaceuticals with an auction at which rival drug companies would bid on a new drug and thereby establish its value. The government could then buy the drug at this "market price" (the prize) and release it into the public domain. See A Patent Cure-All?, Economist, June 15, 1996, at 75 (discussing MIT economist Michael Kremer's paper entitled A Mechanism for Encouraging Innovation, HIID Discussion Paper No. 533, May 1996). The auction system as currently described is vulnerable to strategic misbehavior, but refinements might ultimately make the idea viable.

4. Societal waste is any societal value that theoretically could be achieved but, due to the structure of the market, is nevertheless lost. If, for example, the television referred to above was never sold, there would be societal waste in the amount of $50 (the sum of potential consumer and producer surplus).

Societal value is created whenever an innovation is brought to market. Consumers who have a need for the item rush to buy it;\textsuperscript{38} producers who can produce the good at a cost below price rush to sell it. In a perfectly competitive market, this process drives prices down until consumer surplus is maximized.\textsuperscript{39} This benefits society in that it also maximizes societal value.\textsuperscript{40} For producers, however, this is an unappealing result because little societal value remains in the form of producer surplus, the reward a producer might have received as compensation for development costs.

Introducing a patent into the market changes this result. Patents, and monopolies generally, transform consumer surplus into producer surplus.\textsuperscript{41} The transformation is imperfect;

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure4.png}
\caption{Figure 4}
\end{figure}

38. This "need" might be a need for a product that embodies the idea (a short story) or a need for licensing rights to the idea itself (movie rights).

39. Figure 4 demonstrates this result in a simple market. The diagonal line shows consumer demand, the horizontal line shows a producer's marginal cost, and the point of intersection sets the price and quantity for a competitive market. All of the innovation's societal value is in the form of consumer surplus. See SAMUELSON & NORDHAUS, supra note 37, at 551.

40. As shown infra note 41, raising prices above the competitive level creates societal waste which, by definition, lessens societal value.

41. Figure 5 depicts a simple monopoly. The monopolist sells at a higher price than the competitive price suggested by Figure 4, and produces less. See SAMUELSON & NORDHAUS, supra note 37, at 583.
some of the consumer surplus is lost to societal waste. The result, however, divides societal value. Producers get some. Consumers get some. If the patent is adjusted perfectly, this process can reward producers with the efficient rewards described in Part II of this Article.

Using the patent system to encourage innovation has much to recommend it. First, the rewards from a patent monopoly (producer surplus) can never exceed the societal value of a good. This is true because producer surplus is carved out of societal value; and a piece can never be bigger than the whole. Second, innovations pay for themselves. The societal value from which producer surplus is derived was made possible by the innovation itself and, moreover, comes from consumers who willingly buy (demand) the good.

A final advantage to the patent system is that it encourages only worthwhile innovation. Consider a "worthless" good, one for which development costs exceed societal value. An innovator will intentionally produce such a good only if he believes that, despite the innovation's "worthless" nature, his own personal reward (producer surplus) will exceed his own personal expenses (development costs). But this could never happen. By definition, producer surplus is something less than

---

42. In practice, three factors determine the value of a patent: its duration, its scope (how broad the monopoly is), and the demand for the underlying innovation. Our simple model can take these factors into account by shifting and pivoting the demand curve. A greater scope, for example, reduces the number of available substitute goods and, hence, increases demand.

43. This was one of the worries regarding the prize system. See supra note 36. Patents also encourage innovators to keep their development costs low. The size of a producer's reward is not a function of his costs; he gets the same amount (producer surplus) whether he spent $100 to create the innovation or wastefully spent $110. Thus, innovators have every incentive to keep their costs down and thereby enjoy higher net rewards.
societal value. Thus, if societal value is less than development costs ("worthless"), producer surplus also will be less than development costs ("unprofitable").

There is one significant drawback to using patent monopolies to reward innovation: Monopolies engender societal waste. As shown in Figure 5, monopolists earn producer surplus by restricting output and raising prices. Consumers who are still willing to buy the good, do so; but many consumers are priced out of the market. This means that some consumers—consumers who would willingly pay a price above cost in order to purchase the innovation—will nevertheless be unable to buy the good. In technical terms, consumer surplus will be needlessly discarded. Luckily, this is not as wasteful as it sounds. After all, without that monopolist, the innovation would never have been created at all. Thus, consumer surplus is not so clearly lost as it is simply unachievable.

B. THE PATENT SYSTEM

With this understanding of how a patent affects the market for a single innovation, we can now consider how the patent system encourages innovation overall. Figure 6 is a simplified

44. The question remains as to what to do when a "worthless" good is inadvertently created. Our incentive system is not at fault; patent law did not encourage this waste of societal resources. But now what? Although we might be tempted to refuse to grant patent protection in the hope that society would thereby get the fullest possible gain out of the "worthless" creation, such a policy is inadvisable for two reasons. First, at the moment when patents are granted—before goods have been brought to market—it is difficult to distinguish "worthless" from "worthwhile" innovation. Thus, so long as the patent system neither encourages "worthless" innovation nor reimburses its development costs in full, society is better off awarding patents to all qualifying innovations and letting the market be the final judge of what is and what is not "worthless."

Second, even if society could identify "worthless" innovation immediately, awarding patent protection to these innovations might still be a good idea because protection encourages innovators to bring goods to market. In the absence of patent protection, an innovator might just bury his "worthless" innovation, not spending another dime to tell people about it. With protection, by contrast, the innovator will market the good, hoping to recoup some fraction of his development costs (good for him) while simultaneously allowing society to get some value out of his inadvertently wasteful creation (good for society).

45. Put another way, societal waste is a necessary by-product of a monopoly-based patent system. So long as innovation is encouraged by the granting of monopoly power, society cannot avoid this loss. By contrast, a patent system that did not grant monopolies—a prize system—could conceivably preserve even this societal value. See supra note 36 (discussing the prize system as an alternative intellectual property regime).
representation of the patent system. The horizontal axis measures an innovation's novelty, utility, and nonobviousness. The dashed line shows the threshold of patent protection. Innovations to the right of the dashed line qualify for patent protection, whereas innovations to the left do not. The vertical axis estimates the size of the producer surplus that an innovator would receive were he awarded a patent for the good in question.

Figure 6

Note how difficult this translation of the patent system is. Utility, novelty, and nonobviousness are not necessarily good proxies for development cost, the variable upon which efficient patent protection would be based. Moreover, the value of a patent is difficult to estimate. As discussed previously, it varies with the patent's duration, its scope, and the demand for the underlying innovation.

In order to highlight what is troubling about Figure 6, consider an unpatentable innovation. Such an innovation would register to the left of the dashed line and, as the graph shows, it would receive zero protection. Patent law is an all-or-

46. These are patent law's three threshold requirements. See supra note 23 and accompanying text.

47. To be precise, this figure should actually have four independent axes, one each for utility, novelty, nonobviousness, and value. For the purposes of this discussion, the simpler, two-axis version will suffice.

48. Because this Article focuses mainly on unpatentable goods, the exact shape and slope of the line drawn in Figure 6 is left as an approximation. A more precise version would require various assumptions regarding the relationships between development costs, societal value, novelty, utility, and nonobviousness. Although many such assumptions are implicit in the logic of patent law, this Article need neither explore nor challenge them, focusing instead on the efficiency of patent law with respect to unpatentable goods.
nothing incentive system; goods that fall below the requisite level of utility, novelty, and nonobviousness receive no reward. This violates a fundamental tenet of efficient intellectual property protection. If those unpatentable goods have any development costs whatsoever (and presumably they do), an efficient patent system would reward them with a patent worth at least that amount. The federal system denies them this compensation, leaving many innovations underrewarded.

C. EXPLANATIONS FOR WHY PATENT LAW NEGLECTS UNPATENTABLE GOODS

Before asking why the patent system refuses to protect certain innovative goods, it is important to articulate more clearly why such protection might be a good idea. An innovation is good for society whenever its societal value (the sum of consumer and producer surplus) exceeds its development costs. We will call this Criterion 1. Goods that satisfy this criterion will be produced whenever an original innovator believes that his own personal reward (producer surplus) will exceed those same development costs. We will call this Criterion 2. Patent law recognizes that it is in society’s best interest to guarantee that whenever Criterion 1 is met, Criterion 2 also holds true. It does this by using patent monopolies to transform consumer surplus into producer surplus, and over the range of patentable goods, we will assume that it does this effectively. Nothing changes, however, when this logic is applied to unpatentable goods. So long as an innovation satisfies Criterion 1, it is in society’s best interest to ensure that it also satisfies Criterion 2.

Using this conceptual framework, we can now understand why patent law leaves some goods unprotected. First, transaction costs cause some goods to fail Criterion 1. Transaction

---

49. Again, this level represents only the minimum trigger. The producer might need the lure of a higher reward in order to compensate him for the risks of innovation. Moreover, efficient levels of innovation might not be achieved until that reward also reflects societal preferences for certain innovations. See supra notes 32-33.

50. Even patent law cannot perfectly synchronize Criterion 1 with Criterion 2. Figures 4 and 5, supra notes 39 & 41, show that patents, while transforming consumer surplus into producer surplus, lose some consumer surplus to societal waste. Thus, a worthwhile innovation might pass Criterion 1 ((consumer surplus + producer surplus) > development costs) but nonetheless fail Criterion 2 (producer surplus > development costs) despite the efforts of the patent system.
costs include money spent to check, challenge, and record patent applications, as well as expenses incurred in patent-related litigation. These costs affect Criterion 1 by diminishing societal value. If an innovation brings $100 worth of benefit to society but causes $200 worth of transaction costs, the innovation is "worthless." Further, if an innovation brings $100 worth of benefit and has development costs of $99, then transaction costs of more than $1 would cause the innovation to fail Criterion 1. Thus, the patent system denies protection to unpatentable goods under the implicit assumption that many of these goods are, from a practical standpoint, worthless.

Second, patent law leaves some goods unprotected because certain goods can pass Criterion 2 on their own, without any government intervention. The phenomenon that makes this possible is "lead time," which may be loosely defined as the period of time between an innovator's unveiling of a new idea and a competitor's successful duplication of it. Lead time is a real and valuable force. An original producer is a monopolist from the time he unveils his product until the time a competing good is brought to market. For some unpatentable goods, this de facto monopoly is sufficient to reward the original innovator for his development costs.

Third, patent law might leave some goods unprotected because, in certain cases, patent protection is too generous. As discussed in Part II, patent monopolies reward innovators for

51. See CHISUM & JACOBS, supra note 8, at § 2D[1] (describing patent process).
52. Many of these transaction costs are unique to the patent system. A different protection scheme—with a different transaction cost structure—might allow some of these goods to be protected. See infra note 97 (noting that narrow state protections might eliminate many of the transaction costs inherent in the federal scheme).
53. See, e.g., Aronson v. Quick Point Pencil Co., 440 U.S. 257, 263 (1979) (describing the "costs involved in being the first to introduce a new product to the market, such as outlays for research and development" as "well worth paying").
54. Lead time confers other advantages as well. The original producer is first to establish production facilities and distribution networks, and first to advance along the "learning curve" in terms of his ability to use, market, and improve the innovation. The original innovation might even become an industry standard. For a discussion of lead time, reverse engineering, and the interplay between these market forces and intellectual property protection, see J.H. Reichman, Legal Hybrids Between the Patent and Copyright Paradigms, 94 COLUM. L. REV. 2432, 2506-10, 2547-48 (1994). But see Why First May Not Last, ECONOMIST, Mar. 16, 1996, at 65 (suggesting that first-mover advantages are not as powerful as previously thought).
more than just their development costs. The patent-holder is able to earn returns that compensate him for the risks of innovation and additional moneys that help the innovator to internalize societal preferences for certain goods. Where these “extra” incentives are not needed, however, patent protection is inappropriate. Consider, for example, an “obvious” innovation. If “obvious” means that the “risks of innovation” were small, patent protection would be rewarding the innovator for risks not taken. Hence, patent law might exclude obvious innovations not because they are undeserving of protection, but because patent protection is simply too strong.

Finally, patent law might leave some goods unprotected because of the societal waste caused by the patent process. Imagine, for example, that Isaac Newton had received a patent on the laws of physics. Monopolist Newton would want to restrict the use of those laws, selling “laws-of-physics” licenses at an inflated monopoly price and a restricted monopoly quantity. Aside from the practical concerns with this scheme, this result would be unacceptable from a policy perspective. The laws of physics are the building blocks for nearly all scientific endeavors. Moreover, they are innovations that society used before Newton explained them. Although Newton’s research is valuable, encouraging his work through patent law seems unwise.55

D. EVIDENCE THAT IMPORTANT INNOVATIONS STILL LACK PROTECTION

At this point, it might not be clear that there are any important innovations still in need of protection. Patent law seems to protect most valuable goods; and those that are left might very well be adequately protected by lead time. However, federal law itself offers evidence that valuable, unpatent-

55. In cases such as this, society has found other ways to encourage innovation, including the use of public universities and government-sponsored basic research grants.

Distinguishing between “normal” innovation and fundamental discovery is a difficult task. Are computer algorithms more like automobiles (patentable inventions) or do they more closely resemble Newton’s laws of physics? Bill Gates, Microsoft’s Chief Executive Officer, recently expressed his concern that current law has incorrectly drawn this boundary. “If people had understood how patents would be granted when most of today’s ideas were invented, and had taken out patents, the industry would be at a complete standstill today.” Robert L. Scheier, Gates: Let’s Get Tougher With Patents, PC WEEK, June 24, 1991, at 13 (quoting Gates).
able innovations remain—and are worthy of supplemental protection.

The Semiconductor Chip Protection Act (SCPA) is one such federal law.\(^{56}\) It is a supplement to the patent regime, offering limited intellectual property protection to semiconductor chips, an unpatentable good. Semiconductor chips are considered to be "obvious" innovations; they are more the product of hard work than they are the result of insightful innovation.\(^{57}\) They have large development costs, they are easily copied, and they are inadequately protected by lead time advantages.\(^{58}\) The SCPA therefore protects these unpatentable, valuable goods.

Further evidence that unpatentable goods may be both valuable and worthy of protection is provided by the Plant Patent Act\(^ {59},\) and the Plant Variety Protection Act (PVPA).\(^ {60}\) The former offers protection that is weaker than traditional patent protection. It accords innovators who develop new, nonobvious plant hybrids the "right to exclude others from asexually reproducing the plant or selling or using the plant so reproduced."\(^ {61}\) In other words, competitors can develop an identical hybrid; the law merely prohibits them from using one of the patented plants to do so. The PVPA, by contrast, awards patent-like protection. It, however, does not require that the newly developed plant be "nonobvious."\(^ {62}\)

Although these laws are each quite narrow in application, their logic is more difficult to constrain. Plant hybrids and


\(^{57}\) Chesser, supra note 56, at 251 n.10.

\(^{58}\) Developing a new family of chips can cost up to $80 million; they can be copied for less than $1 million. Id. at 251-52 n.15.


\(^{62}\) CHISUM & JACOBS, supra note 8, at § 6C[2] (noting absence of nonobviousness requirement). It is sometimes argued that Congress is without constitutional authority to award patent-like protection to "obvious" innovation. The Patent Clause (under this argument) requires that "innovation" be creative and, hence, nonobvious. Id.; cf. Feist Publications v. Rural Tel. Serv. Co., 499 U.S. 340, 345 (1991) (holding that, to qualify for copyright protection, works must possess "at least some minimal degree of creativity" beyond merely being "original" work). One is hard pressed, however, to find this requirement in the text or spirit of the Constitution itself. The "Progress of Science" surely occurs in both inventive and mundane steps. See U.S. CONST. art I, § 8, cl. 8.
semiconductor chips are not unique. They are unpatentable innovations with potentially significant development costs that are victimized by fast, inexpensive, effective copying techniques. Patent law neglects them; lead time advantages are insufficient; so supplemental protection regimes were devised. These laws explicitly recognize that their respective unpatentable goods can and should be protected, and they implicitly bolster the claim that the same might be true for other unpatentable goods.63

IV. THE NEGATIVE INference OF PatENT LAW

The Bonito Court struggled with two competing intuitions regarding the appropriate treatment of unpatentable goods. The first was the negative inference, patent law's supposed implicit warning that unpatentable goods ought not be protected. The second was the competing notion that, if state protections were sufficiently weak, they should survive preemption despite the inference. Thus far, I have argued that the ideal intellectual property regime would reward, at minimum, development costs; and that the patent system, while presumably meeting this goal for patentable goods, fails to meet it for unpatentable ones. In this Part, these four lines of inquiry merge first to redefine the "negative inference" and then to establish a more precise understanding as to why weak state protections neither undermine nor conflict with patent policies.

A. THE NEGATIVE INERENCE

Bonito, like Sears and Kewanee before it, assumed that the threshold qualifications of patent law define not only what is eligible to receive patent protection, but also what must remain free for all to use. This is the Court's negative inference. The result seems logical; if Congress requires X for an object to earn a patent, objects without X cannot possibly deserve any protection. However, this is simply untrue. The real negative inference of patent law is that objects that fail to meet patent law's stringent requirements do not deserve patents. Unpatentable does not necessarily mean unprotectable.

Our model of an efficient patent system confirms this result. Figures 7 and 8 repeat conclusions from earlier in the

Article. Figure 7 depicts an idealized intellectual property regime—one that, at a minimum, rewards every innovation’s development costs. An optimal patent system offers rewards above this level; only an inefficient system offers rewards below it. Figure 8 shows the federal patent system, the dashed line representing the minimum level of utility, novelty, and nonobviousness that an innovation must show in order to be granted a patent. The dark black line superimposed on this figure represents the Court’s negative inference.

![Figure 7](chart1.png)  
![Figure 8](chart2.png)

As Figure 7 suggests, all innovations deserve some reward. Congress might deny some of these goods full-fledged patent protection, and other considerations (like transaction costs) might mean that some of these goods cannot be protected at all. But to interpret Congress’s denial of powerful protection (patent law) as a mandate in favor of clearly inefficient protection (the Court’s negative inference) is to argue that Congress’s intent in enacting patent law was to violate the fundamental purpose of intellectual property protection: encouraging all worthwhile innovation. This is an unconvincing and unnecessary interpretation.6

B. A ROLE FOR “WEAKNESS”

Although the Court’s negative inference mischaracterizes the relationship between federal patent law and state laws de-

---

64. The Court based its interpretation neither on the specific language of the federal statutes nor on the legislative history of congressional debates. Instead, the Court rooted its “negative inference” in its conception of patent law, a conception that (this Article argues) misses the critical insight captured by Figures 7 and 8.
signed to protect unpatentable innovation, there is something to the Court's intuition. Patent law does indeed bear a hidden message regarding the appropriate level of state intellectual property protection. That message: State protections cannot be so great as to undermine the incentives created by the federal regime.

To understand the implications of this revised negative inference, consider first the owner of the neighborhood McDonald's. This entrepreneur needs no special legal protections. If he is the first fast food entrepreneur on the block, he enjoys "lead time" advantages and makes abnormal returns. When competition begins, the market settles into a long-run equilibrium wherein he recovers both his daily expenses (e.g., the costs of ingredients and salaries) and his fixed costs (e.g., the costs of building and maintaining the restaurant). Normal markets do not drive entrepreneurs into poverty; instead, markets that are undistorted by the unique characteristics of intellectual property simply reimburse entrepreneurs for their expenses and reward first-movers for being first.

State laws that accomplish this same result for innovators who create unpatentable goods do not threaten the federal patent regime. Development costs are the "fixed costs" of unpatentable innovation. Lead time—to whatever extent it even exists for modern intellectual property—rewards first-movers for opening a new market. Thus, state laws that allow innovators to recover their development costs and capitalize on lead time advantages merely transform markets for unpatentable goods into markets that more closely resemble traditional markets. Such a transformation poses no threat to patent law.

Critics might respond by arguing that underrewarding innovators who create unpatentable goods helps to make patent law seem artificially strong. This is true. But that same effect could be achieved by a "you-are-not-an-innovator" tax on entrepreneurs or a law that somehow made the fast food market

---

65. Fixed costs are expenses incurred even in the absence of output. Most markets have fixed costs (e.g., maintaining office space) and simple economic theory suggests that these markets experience entry and tend toward a zero-profit state. SAMUELSON & NORDHAUS, supra note 37, at 481.

The above discussion does not explicitly account for opportunity costs like the time value of money and the salary the entrepreneur would have earned at his next-best alternative employment. For the purposes of the above analysis, these implicit expenses can be considered to be fixed costs.

66. See infra notes 99-100 and accompanying text (suggesting that technological advance threatens lead time by decreasing the costs of duplication).
less profitable. Neither option is appealing because, in the process of boosting the patent system's incentive effects, both would inadvertently discourage other worthwhile endeavors. The same argument applies to unpatentable innovation.67

So why has unpatentable innovation been systematically underrewarded for so long? Why have innovators who create unpatentable goods been treated differently—worse—than investors and entrepreneurs in every other type of market? As the next two paragraphs suggest, one explanation might be an outdated conception of patent law, a conception that mistak-

67. Put another way, patent law (as it currently exists) is an all-or-nothing, winner-take-all incentive system. Cf. ROBERT H. FRANK & PHILIP J. COOK, THE WINNER-TAKE-ALL SOCIETY (1995). Goods that pass the eligibility threshold are awarded a patent windfall; goods that fall below, by contrast, are left to fend for themselves in competitive markets. In this context, however, such a winner-take-all scheme makes little sense.

If unpatentable innovation were the accidental by-product of research into patentable goods, a winner-take-all incentive system might be justifiable. The patent windfall would lure would-be scientists into the race; and society would be blessed with a large degree of innovative activity. Patentable goods would result from scientific "success"; unpatentable goods would result from scientific "failure." However, as pointed out supra note 22, (unpatentable) boat hulls are not the inadvertent by-product of research into (patentable) boat engines. Therefore, a winner-take-all reward for patentable innovation does little to encourage the development of unpatentable goods.

Alternatively, a winner-take-all system would be appealing if "lesser" (unpatentable) innovation were undesirable. Think of the reward system used to encourage recording stars. Mariah Carey makes millions; my sister Marlene makes nothing—and that is good because it costs the same to produce Mariah's records as it does to produce Marlene's, and I, for one, strictly prefer to listen to Mariah. In the market for recorded music, then, a winner-take-all system has some intuitive appeal. Here, however, the scheme does not reflect reality. Society needs patentable innovation. Society likewise needs unpatentable innovation. This is a fundamental difference between the recording industry and the market for innovative research.

Finally, a winner-take-all incentive would make sense if unpatentable innovation were somehow a prerequisite to patentable discovery. Companies pay their Chief Executive Officers extraordinarily well, in part because the high pay motivates corporate vice-presidents to work diligently in the hope of becoming the next CEO. As with the first example above, however, this pattern simply does not apply in the context of intellectual property.

The point here is simple: Society benefits from both unpatentable and patentable innovation, but the former is neither a prerequisite to, nor an inadvertent by-product of, the latter. Moreover, patentable innovation is not strictly preferred to unpatentable innovation. Unlike other winner-take-all products, society is only wealthy when both types of innovation are present. Thus, the fact that state law can improve patent law's efficiency by dampening its all-or-nothing effect should not be surprising; patent law's winner-take-all design should have been suspect from the start.
enly focuses on the individual innovator instead of considering patent law's role in allocating financial resources.

Assume, first, that patent law was designed to influence Edison's behavior, encouraging him to spend his time thinking about (patentable) fusion technology instead of (unpatentable) bottle shapes. Under this assumption, underrewarding the latter would make considerable sense. Underpayment would reinforce the message that bottle design is less important than fusion technology. Edison would likely react by engaging in fusion research.

Now consider what happens when we recognize that patent law is fundamentally about allocating financial resources. If investment in unpatentable innovation proves unprofitable, investors can invest in shopping centers, movie theaters, even fast food restaurants. Unlike Edison (who can be assumed to be choosing between research in patentable innovation and research in unpatentable innovation), investors have diverse options. Underrewarding unpatentable innovation does little to shift investment toward patentable innovation; it merely shifts resources away from unpatentable innovation (and toward any of a myriad of more attractive options.)

The point here is that patent law is an effective incentive system because it rewards innovators (and, hence, investors) at levels above those available in traditional markets. This is why investors choose to support the work of modern-day Edisons; this is why innovators are willing to assume the risks of innovation. Systematically underrewarding innovators who produce unpatentable goods, however, is not a necessary part of this calculus.

The real negative inference of patent law (and, correspondingly, the appropriate role "weakness" ought to play in the Court's analysis) is as follows: State statutes do not undermine federal patent incentives so long as they allow innovators to recoup only their development costs. These innovators might additionally enjoy lead time advantages; however, even then, the state regime would only be allowing innovators to earn a reward comparable to that received by first-movers in every other type of market.
V. APPLYING THE WEAKNESS TEST TO BONITO

The Court's arguments in Sears, Compco, and Kewanee come close to capturing the correct relationship between state law and patent law. Indeed, even though the Court did not itself recognize that state protections had to approximate the level of development costs, the Court invalidated protections in Sears and Compco that violated this standard and upheld a law in Kewanee that seemed to satisfy it. But the logic of Bonito went astray. This section will first show that state statutes like the one considered in Bonito do, in fact, offer protection that approximates the level of development costs. Then it will consider the implementation of state law protections, delineating a specific, limited role for state law.

A. THE BONITO STATUTE IS SUFFICIENTLY WEAK

Statutes like the one at issue in Bonito do not offer patent-like protection. They do not prohibit competitors from producing particular goods; they merely restrict the unauthorized use of specific cheap, fast, and efficient copying technologies. This section begins by sketching the rough contours of a market operating under such a legal rule, then gradually refines the model by considering transaction costs, imperfect information, enforcement, market imperfections, and lead time. Ultimately, the model is used to show that, under the appropriate conditions, Bonito-like statutes allow innovators to recoup (at most) their development costs.

68. See supra notes 3-12 and accompanying text (discussing Sears, Compco, and Kewanee).

69. The protection asserted in those cases was the functional equivalent of patent protection: full monopoly power.

70. For now, this conclusion relies on the Court's intuitive arguments; the discussion which follows will make these arguments even more convincing. After all, trade secret law is fundamentally about prohibiting particularly cheap, fast, and effective methods of copying—like bribery and corporate espionage.

71. There are actually several additional limitations which should be imposed upon Bonito-like state laws. For example, the laws should exclude formerly-patented goods from their purview. Otherwise, the statutes might accidently increase the rewards earned by innovators who create patentable goods. Additionally, state protections should ultimately sunset. It makes little sense to limit public access to unpatentable innovation forever. These and other details merit further consideration; the primary question, however, asks whether the laws provide too great a reward to innovators who create unpatentable goods. It is to that question that we now turn.
1. A Simple Model

Let us suppose that, after months of experimentation, the Acme Boat Company has designed a new, hydrodynamic boat hull. The hull, although novel and useful, does not qualify for patent protection because it is not sufficiently “nonobvious.”

Acme, quite clearly, has a problem. The moment it brings its boat to market, Beta Boats (a competitor) will make a mold of the new hull and, days later, begin selling a comparable good. Worse still, Beta will enjoy a competitive advantage since its start-up costs (the costs of molding) will be relatively small as compared to Acme’s start-up costs (the aforementioned months of experimentation). A sympathetic state legislator might therefore propose the following statute:

Because boat hulls are produced at significant expense but can be copied at comparatively low cost, boat producers are hereby prohibited from molding competitors’ hulls without express written permission.

Specifics aside, the proposed law simply prohibits a particularly fast, inexpensive, and accurate method of duplication. Beta Boats continues to have other options. It can study Acme’s hull, for example, measuring the curves and photographing the overall design; then, it can design its own competing version. In fact, the only option denied Beta is the option of molding the original boat. Molding is too fast, too cheap, and too effective a method of unauthorized duplication.

To see how this legal rule would affect the market, let us first define several variables. Imagine that Acme spent “D” dollars to develop the original hull; that a competitor can mold the boat for a total of “M” dollars; and that a competitor’s next-best option (say, examining Acme’s hull and then creating a comparable good) costs a greater amount, “N” dollars. Assuming that imitation is cheaper than innovation, we know that: 0 < M < N < D.

One possible long-run equilibrium would find Acme’s competitors (C₁, C₂, . . . Cₙ) each incurring costs of N dollars and entering the boat hull market. That is, each competitor would use the next-best copying technique instead of seeking permission to use the cheaper, restricted method. In this case, they would examine Acme’s boat, learn from its design, but then independently create a comparable product.

In a world of low transaction costs, however, a different result would obtain. For a small fee (call it F), Acme would offer to authorize any competitor to mold its boat. The authorization
would extend only to that competitor. $C_1$, for example, would not be allowed to pay the fee and then authorize $C_2$ to mold its mold. For the competitors, this would be appealing so long as their new total costs (the fee, $F$, plus the costs of molding, $M$) equaled something less than their next-best option (re-creating the hull at cost $N$). Written as an inequality, the bargain would be appealing so long as:

$$(M + F) < N$$

or, solving for $F$,

$$F < (N - M).$$

This result would be good for Acme as well. By striking a deal with each competitor ($C_1, C_2, \ldots C_n$), Acme would earn $n$ payments of the fee ($F$), recovering a total of $nF$ dollars. In fact, the deal seems almost too generous. Thus far, the fee is only limited by the fact that it must be less than the difference between the cost of re-creating the hull ($N$) and the costs of molding ($M$)—and, if $N$ is significantly greater than $M$, this is not much of a limitation at all. 72

However, there is a second and more subtle constraint on Acme's fee. The above analysis assumes that Acme is the only competitor who can authorize molding. In a limited sense, this is true. Acme created the boat and, according to the law, Acme enjoys the right to authorize (or refuse to authorize) molding at its sole discretion. In truth, however, this is only a temporary advantage. Beta Boats can—without violating the law—create a comparable hull (incurring a cost of $N$) and then it, too, would be able to authorize molding. Indeed, if Beta did this and then offered to charge a fee slightly lower than Acme's fee ($F_B$ instead of $F$), Beta could conceivably collect payments from each of the remaining ($n-1$) competitors and thereby recoup the bulk of its expense.

This puts significant pressure on Acme to keep its fee low. If Acme were to propose a high fee, Beta (competitor $C_1$) would turn to competitors $C_2, C_3, \ldots C_n$ and offer to create an identical boat if those remaining competitors would sign a contract promising to mold from Beta and to pay Beta's fee. Acme would either respond by lowering its proposed fee (driving $F_B$

72. Imagine that Acme spent $200 to develop the hull. Suppose that molding costs $10$, re-creating the hull after examining Acme's version costs $80$, and a total of ten firms join the market. Acme seems to be able to charge a per firm fee of up to $70$ and receive from its competitors a total payment approaching $700$. 


down so low as to make this scheme financially unattractive to Beta) or risk losing the entire fee income.\textsuperscript{73}

This is a second constraint on $F$. Specifically, Acme must choose its fee such that Beta is better off paying the fee and incurring the costs of molding (total cost: $M+F$) than it would be re-creating the hull and selling the right to mold to the remaining $(n-1)$ competitors (total cost: $N-(n-1)F_b$). Thus, Acme will set $F$ such that:

$$(M+F) < (N-(n-1)F_b)$$

or, since $F_b$ is approximately equal to $F$,

$$F < (N-M)/n.$$  

Looking back at the full market, we can now estimate the maximum total reward Acme will derive from the proposed legal rule. First, we know that (in long-run equilibrium) competitors will enter the market until the return earned by any competitor is driven down to equal the fixed costs of entering the market.\textsuperscript{74} Thus, we can assume that each competitor (including Acme) is earning a return of approximately $(M+F)$ by operation of normal market forces. In addition, Acme is receiving payments of something less than $((N-M)/n)$ from a maximum of $n$ competitors, for a grand total of something less than $(N-M)$. Adding these terms, we see that Acme can earn a total return, $R$, where:

$$R < (N-M) + (M+F).$$

Recalling that $F < ((N-M)/n)$ and simplifying, we find that:

\textsuperscript{73} A similar argument explains why Acme would not simply refuse to bargain in the hopes of enjoying a monopoly. If Acme tried to maintain a monopoly (offering to authorize molding but only for a fee of $2$ billion), competitors would simply negotiate among themselves and enter the market without Acme's help.

\textsuperscript{74} In long-run equilibrium, competitive markets experience entry and tend toward a zero-profit state. See SAMUELSON & NORDHAUS, supra note 37, at 481. This means that every producer recoups his fixed costs.

In the text, I assume that competitors all face comparable marginal cost curves and comparable (traditional) fixed costs. Neither of these assumptions is necessary to the argument. This market, like any other market, might include competitors with different marginal cost curves and different fixed costs. Again, the point is that legal rules like the one proposed here transform the market for an unpatentable good into a market that more closely resembles a traditional market. In the text, I show this for the simple case of a competitive market with similarly situated competitors; however, the point applies more broadly.
Before interpreting this conclusion, it might be helpful to review what each of these terms means. There are two copying techniques: the cheapest technique is labeled \( M \) (direct molding), and the next-best technique is labeled \( N \) (examine the hull, then re-create). Because imitation is cheaper than innovation, both \( N \) and \( M \) are less than \( D \), the innovation's development costs. Variable \( n \) is the number of competitors in the market.

In Part IV of this Article, I argued that state protections like the one proposed here do not conflict with federal patent law so long as the rewards earned under the statute do not exceed the level of development costs. In this simple model, that means that \( R \), Acme's maximum return, must be smaller than \( D \), Acme's development costs. The above result tells us that this will hold true—\( R \) will be less than \( D \)—so long as the innovation's development costs (\( D \)) are at least double the costs incurred by a competitor using the next-best unrestricted copying method (\( N \)).

2. Implications

Before examining the limitations of the model, it might be useful to put the mathematics aside for a moment and re-examine the intuitions. The market for an unpatentable innovation is fundamentally different from the market for fast food. In the latter, a second-comer derives little economic advantage from the fact that the first-mover is already in the market. Burger King pays in full for the construction of a new restaurant even if a McDonald's has already opened nearby. For unpatentable innovation, however, this is not true. Beta Boats’s

---

75. Mathematically, we know that \( R \) is less than \((N + ((N-M)/n))\) and we are trying to determine the conditions under which \( R \) is also less than \( D \). The latter will certainly hold true where \((N + ((N-M)/n) < D)\). Setting \((M=0)\) and \((n=1)\) maximizes the value of the expression on the left, resulting in the inequality \((D > 2N)\).

This is an extremely conservative claim. The costs of molding (\( M \)) are presumably non-zero; \( n \) is presumably greater than one. Thus, \( D \) can probably be significantly less than twice \( N \) and, still, the state statute would be sufficiently weak.

76. The second-comer does benefit from the fact that the first-mover has already begun to create the market. See infra note 84. The critical point here is that unlike markets for intellectual property, the second-comer in a traditional market must still pay in full for any fixed costs associated with market entry.
fixed costs are lower than Acme's. Because Acme was the first to create the hull, Beta is able to copy Acme's creation and thereby save money.

A legal rule like the one illustrated above changes the market in two interrelated ways. First, it raises Beta's fixed costs. Use of the cheapest copying technique is restricted, so Beta must either pay for the more expensive technique or negotiate with Acme. Second, it lowers Acme's fixed costs. Acme still must pay the innovation's development costs, but now those costs are partially offset by payments from competitors like Beta, each of whom is willing to pay some small amount in exchange for the right to copy more cheaply. The net effect? Acme's fixed costs drop, Beta's rise, and the market more closely resembles a traditional market.

This process allows Acme to recoup no more than its development costs so long as the expenses incurred when copying via the next-best copying technique total to something less than half the costs Acme incurred in creating the original good. Laws that merely restrict the cheapest, most effective copying technique will surely meet this standard. Next-best copying techniques are still copying techniques. Here, for example, Beta's next-best option included photographing, measuring, and otherwise learning from Acme's design. Surely the total cost of that still-permissible copying will be something less than half the full costs of creating the original good.77

77. Laws like those considered here indirectly establish the cost of the next-best unrestricted copying technique. On their face, the laws seem to focus on the cheapest technique; in practice, their value will be determined by their effect on the next-best technique. I suggest that the limitation expressed above \((D > 2N)\) is easily satisfied because, by eliminating only the cheapest copying technique, state laws will rarely push \(N\) above the restricted level. That is the nature of intellectual property; cheap duplication is its inherent weakness. Bonito-like laws merely restrict the cheapest methods.

As applied to an innovation derived from a strictly limited resource, the above arguments do not hold. An innovation built from the remains of the world's last redwood tree, for example, would be difficult to duplicate. The costs of re-creation would necessarily exceed the costs of initial development; subsequent producers would have to develop a substitute for the now-destroyed tree. However, this effect has little to do with intellectual property protection and more to do with the natural monopolies created by scarce resources. Patent law and Bonito-like statutes did not create this problem; even in their absence, such an innovator would have significant market power.
3. Limitations

The model presented thus far consciously avoids such complexities as transaction costs, imperfect information, enforcement issues, market imperfections, and lead time. The model was designed to trace the rough contours of a market operating under a Bonito-like statute; it therefore was kept rather simple. Complications are considered below.78

Transaction costs might scuttle the entire bargaining process. Where the costs of the next-best copying technique are approximately equal to the costs of the cheaper, restricted technique \((N \approx M)\)—or where all of these costs are approximately zero \((N \approx M = 0)\)79—transaction costs will make negotiation unattractive and lead to a market wherein competitors engage in next-best copying and the original innovator receives no fee payments. This market will clearly not overreward the original innovator.80

Imperfect information also complicates the model; however, the critical variables are likely to be easily and accurately estimated by competitors and innovators alike. According to the simple analysis presented above, the appropriate fee is determined by reference to the costs of the restricted technique \((M)\), the costs of the next-best technique \((N)\), and the number of

---

78. One complication not addressed in the text is whether Acme can gain any advantage by charging its competitors a "per unit" fee (\(f\) dollars for every boat hull sold) as opposed to charging a one-time flat fee as discussed. The mathematics grow significantly more complex—and other factors, like monitoring costs, must be considered; but the overall logic remains roughly the same. Acme's total expected proceeds—no matter how derived—still must be low enough such that no competitor would be willing to pay the costs of the next-best copying option \((N)\) in order to earn the right to itself collect fees from the remaining competitors.

79. This is likely where, for example, the initial development costs of the innovation are low. In fact, to whatever extent Richard Posner is correct in his assertion that the "functional meaning of [unpatentable] is discoverable at low cost," bargaining like that described in the model will not occur; competitors will instead employ the unrestricted, next-best copying technique. POSNER, supra note 1, at 39.

80. One final point with regard to transaction costs: If Acme's transaction costs were somehow lower than those faced by its competitors, Acme would be able to make higher profits than our model suggests. Under this scenario, Acme would find all of its competitors \((C_1, C_2, \ldots, C_p)\) and extract payments from them; but no competitor would be able to credibly threaten Acme that it would independently re-create the good, undercut Acme's fee, and then extract payments from the remaining competitors. However, it is hard to imagine a case where the transaction costs faced by Acme would be significantly less than those faced by its competitors. Besides, even in such a case, Acme's additional profits would be limited by the difference between the two.
firms in the market \((n)\). For unpatentable innovations, these values should be easily estimated. This is, after all, obvious innovation—not the stuff that results in radically new markets. Who is going to sell Acme's new boat? Probably the very same competitors who currently sell boats similar to Acme's old boat. The costs of copying or re-creating the hull are likewise presumably similar to comparable costs incurred when copying or designing earlier models. The markets for obvious innovations should not be unpredictably different from the markets for the innovations that anticipated them.\(^8\)

Enforcement is a more troubling concern. If Beta can violate the law, avoid the fee, engage in the restricted copying technique without permission, enjoy lower costs, and never be held accountable, the legal rule will have little effect. Additionally, whatever costs Acme incurs to deter unauthorized duplication lessen Acme's ultimate rewards. State protection is therefore weaker (less valuable to innovators but also less threatening to patent law) than the model suggests.\(^9\)

81. I assume here (and throughout this analysis) that the only goods being protected under the state law scheme are bona fide unpatentable goods; that is, obvious innovations that do not qualify for patent protection. Where nonobvious goods are involved, state protections are admittedly stronger. It might be the case (for example) that there is no next-best copying technique for a nonobvious good because competitors simply are baffled as to how to create it. This, in turn, would allow the original innovator to wield some degree of monopoly power. However, this is not troubling. Where the patent system malfunctions and excludes a nonobvious good, state law might act as a safety net, offering stronger protection to that innovation.

This would become problematic if there were some incentive for innovators to forsake the patent system and intentionally allow their goods to fall under the purview of state law. But such an incentive is difficult to find. As noted supra note 71, state law protections (just like patent protection) should eventually sunset. In fact, to eliminate any bad incentives, they should expire before comparable patent protection would have expired. In virtually every other way, state protections are weaker than patent protection. A patent holder can exclude would-be competitors from the market; an innovator protected by state law has no such power. Besides, what is nonobvious today might become obvious tomorrow; to hedge against that risk, innovators who can should choose patent protection.

There is one counterpoint to be made here. State law is weaker than federal patent law in "virtually" every other way because, in one significant way, state law is bound to be stronger. State law protections are more certain. If an innovator can prove that the unauthorized copying method was used, case closed. There is no risk comparable to the risk of having a court find the underlying patent invalid.

82. Creative solutions to the enforcement/detection problem abound. For example, a phone company in Kansas inserted fictitious names into its phone directory in order to detect unauthorized copying. When another directory
Market imperfections also cannot be ignored. Simple models do not perfectly reflect reality; in the real world, there are inefficient markets with non-competitive pricing and non-competitive output. However, the legal rule proposed herein does little to increase the odds or magnify the effects of these market imperfections. Again, the legal rule merely helps to make this market—the market for an unpatentable good—more closely resemble a traditional market.\textsuperscript{83}

Lastly, the simple model does not take lead time into account. This is intentional. As pointed out in Part IV, every entrepreneur enjoys lead time advantages, rewards for being the first to find a new market. These rewards might be seen as compensation for the fact that first-movers are likely to make business strategy mistakes that second-comers will avoid, or as a bonus meant to offset the expenses first-movers incur when developing new markets (e.g., convincing consumers that they need this thing called a “microwave”).\textsuperscript{84} In normal markets, however, lead time advantages are never seen as payments meant to offset the fixed costs of doing business. There is no compelling reason to so interpret them in markets for unpatentable goods either.

Moreover, no matter how we account for them in our incentive structure, lead time advantages will be small in these

came on the market listing those same fictitious entries, the company was able to bring suit. See \textit{Feist Publications v. Rural Tel. Serv. Co.}, 499 U.S. 340, 344 (1991). The Court ultimately refused to protect the phone company’s development investment on the grounds that phone books are insufficiently creative. \textit{Id.} at 363.

\textsuperscript{83} There is a slightly increased opportunity for collusion in this market. Acme might strike a deal with competitors $C_1$, $C_2$, and $C_3$, in which Acme would refuse to authorize any other competitor to copy its innovation if $C_1$, $C_2$, and $C_3$ would agree to limit their total output. This would keep prices artificially high and allow all four producers (Acme, $C_1$, $C_2$, and $C_3$) to make abnormal profits. However, this strategy is unlikely to be effective. Acme does not have the power to exclude competitors from the market. An additional competitor, $C_4$, can always enter without Acme’s help, thereby destroying the scheme or forcing Acme to include him in the deal. Moreover, $C_4$, $C_5$, \ldots $C_n$ can share the costs of entry (through a bargain like that suggested by the model), enter the market, and all intrude on Acme’s would-be oligopoly. This would cause Acme to regret the deal. The market would become more-or-less competitive, but Acme would have lost the opportunity to earn fee payments from several additional competitors.

\textsuperscript{84} Convincing consumers that they need a new widget is often a difficult task. Why should I buy a microwave when I already own a toaster and an oven? New products also suffer from their own newness. As market innovators well know, “[w]hen a product is first launched, its quality is often low, its price high and its applications limited.” \textit{Why First May Not Last, supra} note 54, at 65.
4. Costs and Benefits

As the above analysis makes clear, Bonito-like state statutes that prohibit the unauthorized use of particularly fast, cheap, and effective copying techniques have a unique set of advantages and disadvantages. On the downside, the laws potentially waste resources. First, there are enforcement costs. Original innovators might be forced to sue competitors who use the restricted method without permission, or they might engage in self-help preventive strategies. From society's point of view, these expenses are pure waste. Second, where transaction costs prevent competitors from negotiating with the original innovator and thereby receiving authorization to use the more efficient copying technology, societal waste will be incurred to whatever extent the next-best copying technology is more expensive (wasteful) than the cheaper alternative. In a world without these legal rules, the cheap alternative would always be used; whenever the legal rule changes that result, needless reinvention takes place.

Bonito-like state statutes, however, offer several powerful advantages. First, they encourage unpatentable innovation. The current legal regime underrewards innovators who create unpatentable goods, leaving society with too few of these socially valuable goods. State law can help to restore balance. The result might not be optimal, but it certainly would be a significant step forward. Second, these laws encourage inno-

85. If the cost of delay is too great, competitors might choose a more expensive copying technique in order to enter the market faster. Competitors might also start to create their goods before the original innovator has completed his innovation, thereby decreasing lead time advantages. (This might happen if competitors hear of the new innovation while it is still in development. Alternatively, this might happen where the same obvious idea strikes two innovators at once. In either case, the result would be a market with two, close-in-time early-movers and no real lead time advantages for either.)

86. Original innovators can decrease this delay by allowing competitors to engage in the faster, cheaper copying method. Thus, original innovators might capitalize on the value of their lead time advantages not by actually enjoying the lead time but, instead, by exchanging it for correspondingly higher fees.

87. Interestingly, these rewards might be nearer to optimal than they at first seem. Part II explained that the ideal patent system would compensate
vation without the use of monopolies. One of the strongest criticisms of the patent system is that it uses monopolies to encourage innovation, causing artificially high monopoly pricing and unnecessarily restrictive monopoly production. No such criticism applies here. Third, where transaction costs are low, self-interested bargaining will ultimately result in the widespread use of the restricted (efficient) copying technology. The losses alluded to above will not occur; all competitors will pay the appropriate fee and use the efficient copying method. Finally, these state laws encourage original innovators to be cost-conscious. The reward received by an innovator is a function of the costs of the various copying technologies, not a direct function of the innovation’s development costs. The lower the innovation’s development costs, then, the better off the innovator. 88

B. IMPLEMENTING A STATE LAW SCHEME

If we agree that state law has a role to play in protecting unpatentable innovation—that the Court decided Bonito incorrectly 89 and that state law can, in fact, complement federal patent law without undermining its incentives—the questions an innovator for his development costs, reward him for his risk, and help him to internalize societal preferences for certain goods. For unpatentable goods, the second of these factors is presumably a non-issue. Goods that fail to meet patent law’s “nonobviousness” requirement are probably low-risk ventures. They might require a significant development investment (like Bonito’s hull did), they might be valuable to society (as semiconductor chips are), but encouraging their production does not require a large risk-based reward. Thus, even though a state law system would reward (approximately) an innovation’s development costs, this reward would be close to ideal.

88. In other words, state law (like patent law) puts significant pressure on original producers to keep their development costs down. An innovator who could spend $50 to develop an innovative product will not needlessly spend $100 for fear that some competitor will copy for $30 and thereby gain a $70 advantage instead of a $20 one.

Mathematically, the returns an innovator receives are limited by the costs of copying (N and M), not the costs of development (D). It is therefore in the innovator’s interest to keep development costs as low as possible. Indeed, as D approaches N, the innovator begins to make a profit. That is why state laws are sufficiently weak only so long as (D > 2N). There is some risk of strategic behavior here; an innovator might strategically try to increase N by making particular design decisions. Legislators will need to be sensitive to such behavior when crafting state law.

89. One brief clarification: This Article does not mean to argue that Bonito, on its facts, should have resulted in a judgment for Bonito Boats. Instead, the Article suggests that laws like the one challenged in Bonito—laws that prohibit specific cheap, fast, and effective copying techniques—should survive federal preemption. Bonito stands for exactly the opposite proposition (see supra note 21) and, in that sense, was incorrectly decided.
tions that remain relate primarily to implementation. What kinds of state laws should survive federal preemption? How widespread should state protection be? And finally, might state protection backfire, aiming to improve efficiency but inadvertently decreasing it?

Bonito-like state statutes serve only to prohibit particularly egregious forms of unauthorized duplication, and they do so only for specific, vulnerable industries. This is a very narrow body of law, designed to address only one of the dangers facing unpatentable innovation. It is a significant step forward—for some industries, the only step required—but it is not a cure-all for unpatentable goods.90

To corrupt a phrase, this is not the patent law we are expounding. Unlike patent law, which contemplates protecting all innovations that meet its threshold requirements, state statutes will not protect all unpatentable goods. Instead, state legislatures will pick and choose from among numerous vulnerable markets, presumably considering both the dangers facing the market and other factors such as the societal value of the innovation in question and the likelihood that the proposed remedy will be effective. The critical point here is that state legislatures—representative bodies fully capable of weighing the costs of state protections against their corresponding benefits—should be empowered to do so. As we have shown elsewhere, across a wide range of possible legal rules,

90. Bonito-like state statutes are designed to combat the powerful, new copying technologies available to the modern-day competitor. Such technologies, however, are not the only threat facing unpatentable innovation. Some goods are copied merely by inspection. An innovative computer interface, for example, is “copied” the moment one competitor sees another’s design concept. These innovations (what Professor Reichman terms “know-how on its face”) cannot be protected by a Bonito-like statute because, even without sophisticated copying technology, duplication is free. In the language of the model, $N = 0$ no matter what the law. See Reichman, supra note 54, at 2511-19. Other industries are more threatened by non-purchasing consumers than they are by free-riding competitors. Computer software companies know this all too well. See Teddy C. Kim, Note, Taming the Electronic Frontier, 80 MINN. L. REV. 1255 (1996) (discussing the ineffectiveness of current copyright law in combating noncommercial software piracy); see also infra note 95 (observing that consumers paradoxically benefit from a lack of protection for innovation). Again, Bonito-like state statutes do nothing to combat this problem. The point here is that these statutes are one piece to the puzzle; as more and more worthwhile innovation is declared “unpatentable,” society—through state law, federal law, or industry standards—will need to develop additional protections.
such state laws will not undermine patent law's incentive structure.\footnote{91}{See supra notes 75 (establishing appropriate constraints) & \& 77 (arguing that virtually any state restriction will satisfy those conditions).}

Critics might worry that this approach will backfire somehow, distorting the market and leading to new inefficiencies. However, three independent checks minimize the danger of inefficient state legislation: the state legislatures themselves, the courts, and the economics of intellectual property protection.

The state legislature's role is obvious: It is empowered with discretion. If the ceramic spa manufacturers want protection, they will have to marshal the evidence and convince duly-elected state officials that such protection is warranted.\footnote{92}{Ceramic spa manufacturers did so in California. See supra note 28.}
The same process applies to the boat hull innovators, and any other manufacturers of unpatentable goods. Presumably, this means that state law protections will be passed only in the face of a significant need. Innovations for which lead time approximately accomplishes the same goal, those for which societal value is particularly low, and those for which enforcement costs are too high will never be welcomed into the state law scheme in the first place.\footnote{93}{History supports this claim. Before \textit{Bonito}, these laws were assumed to be legitimate, yet only a handful of states passed them, and even those states crafted their laws to apply narrowly to specific industries and/or specific copying techniques.}

If the states err, the courts are a second line of defense. Although not competent to examine economic efficiency directly, courts would be able to review state laws in accordance with the basic principles outlined in this Article. If a state law seems to do more than forbid a particularly egregious form of unauthorized duplication, or if a law leaves intact no tenable
copying alternative, the court should and will strike the law down.

The most powerful checks on rampant state law, however, are the economic realities of the relevant markets themselves. As shown earlier, even patent holders cannot earn rewards that exceed the societal value of their innovations. A fortiori, innovators who are protected by weaker state statutes will be similarly limited. Moreover, market forces ensure that state laws like those described here can, at best, reward innovators at the level of development costs. There is little room for error; these are weak, limited statutes.

CONCLUSION

Until recently, the debate over whether (and how) to protect unpatentable innovation might not have been worthy of significant attention. Federal law protected most important innovations, and lead time provided some incentive to produce the innovations that it neglected. However, in today's world, both of these statements are becoming increasingly untrue.

Federal law cannot keep pace with technology. The patent and copyright systems are still struggling with the correct treatment of computer software, an area in which there has been significant innovation for decades. State law can mitigate the impact of this type of delay, acting as a low-level, band-aid remedy during the period between the advent of a new technology and its incorporation into the federal scheme.

94. See supra note 44 and accompanying text.
95. Deep down, consumers will always believe that innovators are being overrewarded for their innovations. And, from the ex post perspective, they always are. After all, once an innovation has been created, consumers would benefit from telling innovators, "Sorry, no protection for you" and thereby capturing all the societal value for themselves. However, after one iteration of this scheme, innovation would grind to a halt and society would be denied many worthwhile contributions. Protection, and its related impact on the allocation of societal value, is a necessary cost of innovation.
97. State legislatures can focus on unpatentable innovations that are of particular local consequence, thereby responding faster than the federal system. Also, state law might be able to protect some goods that federal law cannot. As discussed supra note 52, there are transaction costs inherent in the patent system that might not be presented by simpler state laws.
Moreover, lead time—the only form of protection offered to many unpatentable innovations—is rapidly disappearing. Innovations are becoming inherently more copyable. Copying technologies are becoming faster, cheaper, and more accessible. Patent law's implicit assumption that lead time advantages adequately protect unpatentable innovation is becoming correspondingly unrealistic. State law can help to slow this trend, not undermining federal law but supplementing it, and providing for a smoother transition between patent protection and the unfettered public domain.

It can be argued that a national system would be superior and indeed, it might. However, the assertion that a better solution might eventually be found in no way argues for the arbitrary and unnecessary preemption of state law. In fact, if history is a guide, state law actually might lead the federal government toward that better solution. State law has fore-shadowed eventual federal protections before, being first to protect sound recordings and first to prohibit certain types of trademark violations. State law has a role to play in protect-

98. See Reichman, supra note 54, at 2506 (discussing the importance of lead time for unpatented innovations); see also Brown, supra note 28, at 1386 (“[Lead time] is often the only advantage our system grants to an originator . . . .”).

99. Electronic databases, algorithms, and other information-based products are today increasingly valuable and vulnerable.

100. Modern, accessible copying technologies include robotics, computer simulation, and visual inspection technology. New copying technologies have always motivated new intellectual property protections. There was no need to worry about protecting sound recordings until a means for their easy reproduction was devised.

101. National systems have recently been established in Switzerland and Japan. See Reichman, supra note 54, at 2474-75 nn.209 & 213; see also THE FEDERALIST NO. 43, at 272 (James Madison) (Clinton Rossiter ed., 1961) (arguing that a federal regime can better protect intellectual property).

102. Statutes of this sort might one day be incorporated into the federal scheme, protecting goods that are inefficiently protected (or utterly unprotected) by modern patent law. Such a regime would have some intuitive appeal; if copying technologies are what puts intellectual property at risk in the first place, laws that assign the right to use those technologies might be an appropriate response—more appropriate than long-term or short-term monopolies granted on the innovations themselves.


ing intellectual property. The *Bonito* Court underestimated that role, and now, more than ever before, society is suffering the consequences.