Maturing Patent Theory from Industrial Policy to Intellectual Property

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Maturing Patent Theory from Industrial Policy to Intellectual Property

Oskar Liivak*

We have always known that technological progress is important and this country has always aimed to promote it. A large part of that responsibility has fallen on the shoulders of the patent system. Embarrassingly, despite over two hundred years of experience, we still do not actually know if the patent system helps or hinders technological progress. This Essay argues that the problem is not the patent system but rather patent theory. Patent theory suffers from three linked problems: exceptionalness, indeterminacy, and animosity. First, patent law is seen as a necessarily unique exception to the overall market economy. By artificially making patenting a profitable activity, the patent system is a form of industrial policy that aims to encourage people to enter the risky business of inventing. Second, we have never confidently been able to conclude that the benefits of this industrial policy outweigh its costs. Third, and perhaps just as important, that story inherently creates animosity among important interest groups. The resulting ongoing indeterminacy and animosity have prevented the patent system from maturing into an accepted, stable legal institution.

We can and must do better. We need an institution that is stable, reliable, and accepted. This Essay argues that we should reject the long-standing “legal incentive” narrative and begin looking for a better alternative. This Essay points toward an accepted, stable model sitting in plain sight: traditional property. We have (incorrectly) thought that traditional property and its economic system for exchange cannot provide guidance for the exotic nonrival world of the patent system. This Essay aims to show that those assumptions are wrong, and it begins outlining a patent narrative where patents are seen as an important and natural extension of traditional property and indeed the overall economy of tangible goods. There are good reasons to think that such a system might provide what current patent theory cannot: the basis for a determinate and accepted patent system.

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I. INTRODUCTION

Patent law has arrived. Patents are front-page news. Nortel Networks, an otherwise bankrupt company, just sold its patents to Apple and Microsoft for over $4.5 billion. Google just agreed to buy Motorola Mobility for $12.5 billion largely, it is speculated, to ensure that Google could obtain Motorola Mobility’s deep patent portfolio. Patents are now an important issue for almost every major business. There was a time when patents were viewed as an obscure field within both the legal and business worlds. That is no longer the case. As a patent attorney, this importance is welcome and overdue—we always knew this was an important field. Though the system is enjoying the attention, the future of the patent system remains uncertain. It is not clear whether we are seeing patent law’s triumphant arrival or whether we are witnessing a patent “bubble” that soon will burst, laying bare an unproductive system that benefited few besides patent attorneys.

The embarrassing fact of the matter is that we really do not know which of these two divergent evaluations fits. Despite over two hundred years of experience with the patent system, we are not sure that the patent system actually helps or hinders technological progress. This should trouble you; it certainly troubles me. After all, it is now


well accepted that technological innovation is critical for economic growth. On a planet with limited tangible resources the only way we can properly feed the ever-increasing numbers of mouths and minds is to get smarter at utilizing our existing resources. The patent system should be part of the solution, not part of the problem.

To mature into a stable, reliable, and accepted institution, the patent system cannot get by with its current indeterminate narrative. It needs better justification—it needs better patent theory. This Essay does not lay out a complete patent theory capable of locking down every doctrinal detail, rather it points us toward a fertile place to hunt for such a theory. Often times knowing where to look for something is the key to finding it. And as my car keys will attest, sometimes the things we are looking for are right under our noses.

This Essay argues that the problems with the current patent narrative can be summarized by three linked points: exceptionalness, indeterminacy, and inherent animosity. In the current narrative, patent law is seen as a sui generis exception to traditional property and the overall market economy. We are taught that the nonrival world of ideas is exotic enough that the institutions of traditional property and its associated market economics are just not up to the challenge of dealing with this brave new world.

Instead, the patent system is predicated on different grounds. Stated bluntly, patent law aims to make obtaining and enforcing patents a profitable undertaking. By doing so, patent law “promote[s] ... Progress [in the] useful Arts.” In an important sense, this narrative portrays patent law as a form of industrial policy rather than a species of private, market property.

That exceptionalness though leads to indeterminacy. The trouble is that neither supporters nor detractors of the modern patent system can prove that the system is or is not socially beneficial. The narrative


itself has framed the patent system as an exception to the normal economy, and as such, it has framed the system in a way that resists evaluation. We cannot establish the overall costs or benefits of the system. We cannot prove it is worth it, nor can we prove it is not. The system just endures in a persistent indeterminate state.

In addition, the current patent narrative inherently induces animosity. The current patent narrative portrays itself as undertaking a necessary though somewhat tragic choice. Though ideas, as opposed to tangible goods, can in theory be shared with everyone, the patent system has to prevent some from getting access to patented ideas in order to provide the needed economic incentives and profits. That tragic choice fuels controversy and mistrust.

Patent law is still, as put by Learned Hand fifty years ago, “approach[ed] . . . with enormous passion but without enlightenment.” One side argues the system is essential for “American industry” while the other side calls the system “a beastly method.” “No one really knows. Each side is beating the air.” We are still in the same stalemate. We cannot convince naysayers that the system has merit nor can we convince overzealous advocates to concede any moderation of the system. This embarrassing indeterminacy is becoming increasingly impossible to ignore.

So far the response has been to focus on the middle problem, the indeterminacy. If the cost-benefit balance of the patent system could finally be resolved, then despite its unfortunate side effects (for example, restricting access to ideas), we could at least steel ourselves knowing that those costs and sacrifices were ultimately worth it. Yet progress on that front has been very slow, and this Essay worries it may remain so. This Essay offers an alternative. It begins not with indeterminacy but with the earlier assumption of exceptionalness. This Essay argues that the way forward lies in building a patent system that extends the ideas of traditional property and the tangible market rather than building an exception to it.

This line of argument, rethinking patent exceptionalness, has not been investigated before because it likely appears so wrongheaded. First, the private property system allocates scarce rival resources, yet ideas like inventions are not rival. Unlike tangible goods, we can share ideas without limit. On that fundamental score, private property does


6. Id.
not appear to be the proper schema for the patent system. Similarly, the efficiency of the tangible economy depends on competition, yet with strong competition inventors will not be able to recoup their fixed costs. Once again, our traditional economic system for tangibles, though familiar, appears inappropriate. And as a normative matter, traditional property immediately brings to mind Blackstone’s famous vision of sole and despotic dominion over owned resources. If we are to own ideas and inventions in the same sense as private property, then many worry that such a private property based system will grossly tilt toward inventors. Lastly, looking to staid traditional property seems old-fashioned and backwards. Is not intellectual property the more advanced system? What lessons could traditional property have for shiny, modern patent law?

These objections are the main focus of this Essay. They have unnecessarily prevented us from exploring a more stable, more acceptable system for patents. First, as a historical matter, the patent system is not in some way the more modern system that this Essay is aiming to retrograde. In fact it is the exact opposite. Building a patent narrative around traditional property is a revolutionary step forward. At one time, both patents and property had very similar narratives that roughly mirrored the incentive story that still dominates patent law today. Both were government grants that aimed to entice entrepreneurs to undertake risky activity. In a world without any business activity, such a coarse system makes some sense, but once enough entrepreneurs understand the private benefits of those activities, such a system creates animosity as it appears to be limiting rather than stimulating enterprising business activity. Starting with the work of the classical economists, that mercantilist vision for tangible property was overthrown. Yet, importantly, patent law, largely because of the differences cited above, was left behind in that revolution. That new property narrative liberated and “democratized” tangible property, and it led to the modern market-based economy. Compared to tangible private property, patent law is the one that is operating with the archaic economic thinking. The central question in this Essay is whether patent law is finally, nearly two hundred years later, ready to join its more advanced cousin.

The Essay addresses the objections to making this connection and presents a vision of a patent system based explicitly on extending the

private property and the market economy to technological ideas. Rather than presenting the patent system as some intractable sui generis exception to private property, this Essay presents a vision for the patent system that is compatible and integrated with our more familiar private property institution. Such a basis for the narrative should improve the current patent system’s public relations troubles. It will no longer be seen as some exceptional intervention upon the traditional market. Likewise, and perhaps more surprisingly, the system need not be viewed as inherently limiting access. Instead, the exclusionary rights aim to channel behavior so that consumers get their copy of the invention from the inventor rather than from a pirate. In addition to these public relations improvements, such a narrative has the chance of being tractable. Because it is built as an integrated addition to the tangible economy, we can hopefully make firm claims about the social benefits of the system. The economic machinery that rationalizes the overall economy can be used to help quantify the benefits of the patent system. Considering the stalemate of the conventional narrative, surely any such promising alternative should be thoroughly explored.

II. THE LEGAL INCENTIVE PATENT SYSTEM: ISOLATED, INDETERMINATE, AND SUSPECT

This Part describes the current “legal incentive” narrative that undergirds the patent system. It highlights that this narrative begins by establishing patent law’s exceptionalness. Yet that exceptionalness (necessary as it may seem) leads not only to an intractable, indeterminate system, but also alienates important constituents of the patent system. The result is never ending instability and controversy. That narrative has not yet (and likely will never) yield a stable, accepted institution.

There are many theories that are used to justify patent law. Yet they are all variants on one main theme: patent law is said to supply needed incentives. The details of these theories vary from incentives to invent, incentives to disclose inventions, incentives to commercialize inventions, or incentives to invent new inventions that design around existing patents. Though differing about those details, these theories all agree on the need for creating some type of

They agree that patent law provides "some incentive that would be present at suboptimal levels absent the patent system." And they agree that the system creates those incentives through its exclusive rights. The relevant policy debate then becomes determining the proper size and duration for those legal incentives. Patent law aims to provide the right amount of incentive so that, in aggregate, society undertakes the proper amount of inventive activity. Importantly, those narratives all start by assuming that some incentive is needed where it is not needed elsewhere. In short, the narratives assume that patents and the technological ideas they protect are different and exceptional.

The patent policy debates become a balancing of the inherent tension between the harm of restricting the spread of ideas against the benefits of the incentives. The problem with this narrative is that it creates an indeterminate system. By styling the patent question as the difficult balance between incentives and access, patent law has created a system that alienates many and yet cannot ever prove that it is socially beneficial. The root cause of the intractable nature of the problem is patent law’s exceptionalness and isolation. This Part describes why exceptionalism and isolation appear necessary for the patent system and then shows why that exceptionalism leads to alienation and intractability.

A. The Legal Incentive Patent System and Its Exceptionalism

The exceptional nature of the patent system is woven into the narrative from the very start. The narrative begins with a discussion of public versus private goods. It highlights that inventions are different

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10. KIEFF ET AL., supra note 8, at 66.

11. In its strongest form, the incentive story devolves into a reward theory wherein the incentive is simply monetary and the only question is how much incentive is needed for the optimum amount of inventions. The reward theory was and continues to be pushed by many. From that perspective, a patent is just simply a toll we all must pay in order to compensate the inventor. See *Great Atl. & Pac. Tea Co. v. Supermarket Equip. Corp.*, 340 U.S. 147, 154 (1950) (Douglas, J., concurring) (“Every patent is the grant of a privilege of exacting tolls . . . .”). For a modern take, see Jeanne C. Fromer, *Claiming Intellectual Property*, 76 U. CHI. L. REV. 719, 731 (2009) (“The principal goal of the American patent system is to stimulate innovation . . . . [That] occurs by rewarding inventors with a time-limited exclusive patent right . . . .” (footnote omitted)). Again the complaint here is not that we talk about incentives generally, but rather when we do talk about incentives we all too often fall into the trap of thinking that the patent itself is the reward.
from normal, tangible goods. As opposed to the scarce, rival goods of
the tangible world, ideas can be easily copied and given to others. As
famously and eloquently described by Thomas Jefferson:

[T]he moment [an idea] is divulged, it forces itself into the possession
of every one, and the receiver cannot dispossess himself of it. [It]
peculiar character too is that no one possesses the less, because every
other possesses the whole of it. [H]e who receives an idea from me,
receives instruction himself, without lessening mine; as he who lights
his taper at mine, receives light without darkening me.12

Ideas are very different and are not scarce in the same sense that an
apple is scarce. If I eat an apple, others cannot use it for other
purposes. If I have a solution to some technical problem, I can share
that solution with everyone and everyone can utilize it without
degrading the invention at all. In other words, inventions theoretically
can improve the lives of many, many people all at once.

This raises suspicions about attempts to equate patents with
traditional property, because a fundamental role for an economic
system of private property is to allocate scarce resources to productive
ends.13 An economic system determines how a society should use its
scarce land, labor, and capital to meet its needs.14 Property rights are
central to that objective.

With scarcity playing such a central role in other private property
discussions, property in ideas and information seems incongruent.
Because information and ideas can be copied so easily, there does not
appear to be the same fundamental concern about scarcity. Based on
this, many have argued that traditional property rationales have no
place in discussing intellectual property. As argued by Arnold Plant in
the 1930s and more recently as echoed by Mark Lemley: "Intellectual
property . . . is not a response to allocative distortions resulting from
scarcity, as real property law is. Rather, it is a conscious decision to

THE PAPERS OF THOMAS JEFFERSON, 11 MARCH TO 27 NOVEMBER 1813, at 379, 383 (J.
Jefferson Looney et al. eds., 2009); see also Mossoff, supra note 9, at 960.
13. WILLIAM J. BAUMOL & ALAN S. BLINDER, ECONOMICS: PRINCIPLES AND POLICY
34 (4th ed. 1988); see also Jeremy Waldron, What Is Private Property?, 5 OXFORD J. LEGAL
STUD. 313, 318 (1985) ("A problem, then, which I shall call the problem of allocation, arises
in any society which regards the avoidance of serious conflict as a matter of any importance.
This is the problem of determining peaceably and reasonably predictably who is to have
access to which resources for what purposes and when. The systems of social rules which I
call property rules are ways of solving that problem.").
14. BAUMOL & BLINDER, supra note 13, at 35.
create scarcity in a type of good in which it is ordinarily absent . . . .”

Along similar lines, Friederich Hayek “raised serious doubts about the
equation of tangible and intangible resources.” Hayek argued:

“The difference between [copyrights and patents] and other kinds of
property rights is this: while ownership of material goods guides the
use of scarce means to their most important uses, in the case of
immaterial goods such as literary productions and technological
inventions the ability to produce them is also limited, yet once they have
come into existence, they can be indefinitely multiplied and can be
made scarce only by law in order to create an inducement to produce
such ideas.”

Scarcity is a tragic fact of life in tangible goods, and traditional
property tries to make the “most” of it. With intellectual property, we
are seemingly dealing with a resource that can be shared infinitely and
yet we are, somewhat surprisingly, intentionally creating scarcity in it.
To many, private property just does not appear to be the right
framework for intellectual property.

Property rhetoric for patents also raises other more normative
concerns. Some have argued that overreliance on property analogies is
causing many of the recent problems with the intellectual property.
For these property critics, property analogies certainly cannot provide a
balanced patent system. Any discussion of traditional property too

15. Mark A. Lemley, Property, Intellectual Property, and Free Riding, 83 TEX. L. REV. 1031, 1055 (2005); see also Arnold Plant, The Economic Theory Concerning Patents for Inventions, 1 ECONOMICA 30, 31 (1934) (“It is a peculiarity of property rights in patents (and copyrights) that they do not arise out of the scarcity of the objects which become appropriated. They are not a consequence of scarcity. They are the deliberate creation of statute law; and, whereas in general the institution of private property makes for the preservation of scarce goods, tending (as we might somewhat loosely say) to lead us ‘to make the most of them,’ property rights in patents and copyright make possible the creation of a scarcity of the products appropriated which could not otherwise be maintained. Whereas we might expect that public action concerning private property would normally be directed at the prevention of the raising of prices, in these cases the object of the legislation is to confer the power of raising prices by enabling the creation of scarcity.”).


19. As Stewart E. Sterk has argued, real property analogies have been employed precisely for their rhetorical weight by association with traditional property. Stewart E. Sterk, Intellectualizing Property: The Tenuous Connections Between Land and Copyright, 83 WASH. U. L.Q. 417, 420 (2005) (“One might surmise then, that introduction of the property label into copyright and patent was not accidental. . . . [S]upporters of expanded copyright and patent protections invoked property terminology to seize rhetorical advantages not otherwise available.”). Likewise Mark Lemley fears that the real property analogies are used
quickly brings up Blackstone's oft-quoted characterization that property grants the owner "sole and despotic dominion" over the object of property. A "neoclassicist theory" of property rights suggests rights that are "relatively broad and clearly defined." Because of such absolutist visions, many have argued for abandoning property altogether, worrying that property analogies are all too fraught with "the trap of treating intellectual property as an absolute right to exclude." Patents as property must mean "an absolute right to exclude" others from the invention. As a result on this normative front, many have resisted even calling patents part of private property.

In addition, there are more economic oriented concerns. Competition is at the heart of the private property market and appears incompatible with a system of encouraging technological progress. Competition would drive the market price of an invention to near zero (its marginal cost) and the inventor would be unable to recoup any of the fixed costs used to create the invention. As a result, a free market with competition appears incompatible with a patent system. Though "[c]ompetition through free enterprise and open markets is the

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22. Neil Weinstock Netanel, Copyright and a Democratic Civil Society, 106 YALE L.J. 283, 310, 314 (1996) ("[N]eoclassicists . . . favor . . . assigning copyright owners maximum rights and leaving the allocation of those rights up to the market.").


24. Id.
organizing principle for most of the U.S. economy,”

These presumptions drive patent law’s exceptionalism. We are
told to stow away our normal intuitions about private property because
we are off to the brave new world of intellectual property. We are told
that the basic tenets of private property markets are inapplicable to
nonrival resources like ideas. The consensus view is that “[m]arkets
alone do not necessarily provide a socially optimal level of incentives
., and so patents are seen as an important policy instrument to
remedy this market failure.” But as argued next, that exceptionalism
leads to patent law’s indeterminacy.

B. Legal Incentives and Patent Indeterminism

Simply put, once we style the patent system as an exception
meant to interfere artificially with the market economy, we have
created a system that is indeterminate. We do not know, despite two
hundred years of hand wringing, whether our patent system is helping
or hindering technological progress. This “patent controversy” and
its indeterminacy is nothing new. In fact, in what remains one of the
most authoritative examinations of the patent system to date,
economist Fritz Machlup provided the following disheartening
conclusion:

If we did not have a patent system, it would be irresponsible, on the
basis of our present knowledge of its economic consequences, to
recommend instituting [it]. But since we have had [one] for a long

25. See FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF
omitted) (citing Kenneth J. Arrow, Economic Welfare and the Allocation of Resources for
Invention, in THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL
FACTORS 609 (1962)).
28. It appears that we continue to beat the air. See F.M. Scherer, Michele Boldrino
review); see also Yochai Benkler, THE WEALTH OF NETWORKS 38 (2006) (“The efficiency of
regulating information, knowledge, and cultural production through strong copyright and
patent is not only theoretically ambiguous, it also lacks empirical basis.”).
29. Fritz Machlup & Edith Penrose, The Patent Controversy in the Nineteenth
Century, 10 J. ECON. HIST. 1, 1-2 (1950) (“[T]he controversy about the patent of invention
is very old . . . !”).
time, it would be irresponsible, on the basis of our present knowledge, to recommend abolishing it.\(^\text{30}\)

Since Machlup made those comments in 1958, a great deal of research has been directed at the patent system, but unfortunately, the underlying indeterminacy remains. In 1986, thirty years after Fritz Machlup gave his famously ambiguous nonendorsement of the patent system, George Priest returned to the same question. He stated, "The ratio of empirical demonstration to assumption in [patent] literature must be very close to zero."\(^\text{31}\) Priest depressingly concluded, "Personally, I believe there is little hope that economic analysis can resolve the question of the appropriate scope of the protection of intellectual property."\(^\text{32}\) More recently, and after more attempts had been made toward empirical quantification, Mark Lemley similarly admitted that "it is hard—and perhaps even impossible—to ever calibrate intellectual property law perfectly."\(^\text{33}\)

Certainly modern efforts have focused on trying to better understand the costs and benefits of the patent system, but this Essay argues some of these costs will remain largely unmeasurable. For example, nearly eighty years ago, economist Arnold Plant worried about the patent system and its basic premise that it aimed to lure people to invent.\(^\text{34}\) In his critique of the patent system, he argued that one thing was consistently overlooked:

The question which they one and all failed to ask themselves, however, is what these people would otherwise be doing if the patent system were not diverting their attention by the offer of monopolistic profits to the task of inventing. By what system of economic calculus were they enabled to conclude so definitely that the gain of any inventions that they might make would not be offset by the loss of other output? By no stretch of the imagination can the inventing class be assumed to be otherwise unemployable. Other product which is foregone when scarce factors are diverted in this way completely escaped their attention.\(^\text{35}\)

Indeed, as long as we view the patent system as a purposeful intervention in the "normal" economy, this cost is going to be hard to


\(^{32}\) \textit{Id.} at 24.

\(^{33}\) Lemley, \textit{supra} note 15, at 1066.

\(^{34}\) See Plant, \textit{supra} note 15, at 30.

\(^{35}\) \textit{Id.} at 40.
calculate. As a result, "[T]he science of economics as it stands to-day furnishes no basis of justification for this enormous experiment in the encouragement of a particular activity by enabling monopolistic price control." In recent years, Glynn Lunney has focused on this cost in the copyright context and argued that because the analysis fails "to consider the opportunity cost associated with increased incentives to create copyrighted works," the "incentives-paradigm [is] worthless as a guide to copyright's proper limits." Agreeing with that assessment, this Essay argues that the current incentive-based patent narrative will remain indeterminate because it, among other indeterminacies, cannot quantify its opportunity costs. In other words, by building the system as a sui generis exception separate from the normal economic machinery, the patent narrative dooms itself to indeterminacy.

The current approach to this indeterminacy is to just keep trying. As Mark Lemley has stated, "Hard as it is to get the balance right, we will never do it if we simply stop trying." We are forced, in Machlup's words, to just "muddle through." This indeterminism is so serious that other prominent patent scholars are abandoning the incentive-based theory. In his recent book, Robert Merges reviews the basis for the incentive-based system and because of its deficiencies he reluctantly is forced to look elsewhere for the foundations of the field:

Current convention has it that IP law seeks to maximize the net social benefit of the practices it regulates.... Society offers above-market rewards to creators of certain works that would not be created, or not created as soon or as well, in the absence of reward. The gains ... are weighed against social losses, typically in the form of the consumer welfare lost when embodiments of these works are sold at prices above the marginal cost of their production. IP policy ... is a matter weighing these things out, of striking the right balance.... The process is [i]mpossibly complex.... The sheer practical difficulty of measuring or approximating all the variables involved means that the utilitarian program will always be at best aspirational. Like designing a perfect socialist economy, the computational

36. Id. at 51.
38. Lemley, supra note 15, at 1067.
39. AN ECONOMIC REVIEW OF THE PATENT SYSTEM, supra note 30, at 80.
40. ROBERT P. MERGES, JUSTIFYING INTELLECTUAL PROPERTY (2011).
complexities of this philosophical project cast grave doubt on its fitness as a workable foundation of the field.

In my research, I have become convinced that with our current tools we will never identify the “optimal number” of patented works. Every time I go looking for the utilitarian footings of the field, I come up empty. Try as I might, I simply cannot justify our current IP system on the basis of verifiable data showing that people are better off with IP law than they would be without it.41

Like Merges, this Essay argues that it is time to start seriously looking beyond the coarse incentive and access theory for a firmer foundation for the patent system.

C. Legal Incentives and Patent Animosity

In many areas “muddling through” can work. Many problems are hard and we just have to keep at it. But for patent law the problem is a bit worse. The narrative, in addition to being indeterminate, is a public relations failure. Even before reaching the cost benefit balancing, the current patent narrative already has alienated many important constituents, including free market proponents, advocates for access to knowledge, and even actual inventors.

Because of its assumed exceptionalism from the market and private property, “the chief opponents of the [patent] system have been among the chief proponents of free enterprise.”42 In particular, it is precisely competitors that need to pay at the patent tollbooth.43 In short, “[A] patent is a right to try to exclude a competitor.”44 As a result, patent law is in tension with antitrust and competition law.45

41. Id. at 2-3.
42. Machlup & Penrose, supra note 29, at 1.
43. See SUZANNE SCOTCHMER, INNOVATION AND INCENTIVES 34 (2004) (describing the patent system as tolls).
45. See Herbert Hovenkamp, Innovation and the Domain of Competition Policy, 60 ALA. L. REV. 103, 108 (2008). But some have tried to reconcile patent and antitrust finding that the two are not overly in conflict. See FED. TRADE COMM’N, supra note 25, at 2 (“Competition and patents are not inherently in conflict.”); WARD S. BOWMAN, JR., PATENT AND ANTITRUST LAW: A LEGAL AND ECONOMIC APPRAISAL, at ix (1973) (“A principal conclusion is that the antitrust/patent conflict, as courts have assessed it, is to a large extent illusory.”); see also FED. TRADE COMM’N, supra note 25, at 1 (“Both competition and patent policy can foster innovation, but each requires a proper balance with the other to do so. Errors or systematic biases in how one policy’s rules are interpreted and applied can harm the other policy’s effectiveness.”). But even though not in conflict, patent and antitrust are surely in difficult tension.
“an artificial deviation from competition,”
46 patent law’s “basic economic inconsistency” breeds suspicion.47 Hayek argued that “it is not obvious that such forced scarcity is the most effective way to stimulate the human creative process.”

In addition to antagonizing free marketeers, the patent narrative, because it aims to limit access to information, has also raised very strong normative suspicions from supporters of the free spread of useful information. Ideally, ideas would, as put by Justice Brandeis, be “free as the air to common use.”

They can be shared without limit, so who would ever try to prevent the spread of useful ideas? But in the incentive narrative, we want to make inventing profitable. We therefore think we have to limit access; if everyone was given the idea then who would pay for it? This tension forms the central dilemma of patent law—the incentive versus access paradox.50 Ultimately, we want ideas to be accessible to those that can use them. Yet to create ideas in the first place, we need incentives, and to create incentives we think we have to limit access. The tension and the inherent tragedy of this narrative is seen in the words of Nobel Prize winning economist Kenneth Arrow:

[I]nformation . . . , say a new method of production, should, from the welfare point of view, be available free of charge (apart from the costs of transmitting information). This insures optimal utilization of the information but of course provides no incentive for investment in research. . . . In a free enterprise economy, inventive activity is supported by using the invention to create property rights; precisely to the extent that it is successful, there is an underutilization of information.

In fact, the push back against patents and intellectual property more generally has been strong enough that these groups have banded together into a broad coalition: “In the last several decades, intellectual property law has become significantly stronger, both in the United States and around the world. Recently, a powerful backlash has

47. AN ECONOMIC REVIEW OF THE PATENT SYSTEM, supra note 30, at iii.
51. Arrow, supra note 27, at 616-17 (emphasis added).
emerged and begun to gather loosely under the rubric of "access to
knowledge."52

Their focus has been protecting a public domain for ideas, and
generally they have taken a dim view of intellectual property rights.53 For
patents, one of the most glaring issues has been the "access gap" where
high prices (often buoyed by patents) prevent access to
lifesaving medicines.54 As long as the patent narrative (and intellectual
property more generally) requires the "underutilization of
information," then there will continue to be strong suspicions if not
outright revolution against the system.55

Lastly, the narrative also alienates actual inventors. The system
does this in two related ways. First, many often independently invent
the same thing and yet the patent system is designed to tax those
independent inventors if they do not win the race to the patent office.
As argued by Learned Hand, this aspect of the patent system has
fueled "a great deal of the animosity that has surrounded patents nearly
always."56 And in recent years, a number of scholars have examined
and questioned this unique feature of patent law.

Yet the public relations problems with the current system vis-à-
vis inventors run even deeper. The current system, as an incentive
system, justifies exclusionary rights that extend beyond the actual
invention created by a patentee. Under the current system, patent

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53. James Boyle, The Second Enclosure Movement and the Construction of the Public Domain, LAW & CONTEMP. PROBS., Winter & Spring 2003, at 33, 37 ("[T]hings that were formerly thought of as either common property or uncommodifable are being covered with new, or newly extended, property rights.").
54. See IP Reform & Innovation, YALE LAW SCH., http://www.law.yale.edu/intellectuallife/6546.htm (last visited Apr. 16, 2012) ("[A] growing body of evidence suggests that maximizing intellectual property monopolies [is] harmful and misguided. As these outmoded approaches continue to dictate global legal norms and shape national legal infrastructures, the ISP is committed towards reforming current intellectual property legal frameworks, expanding the recognition of exceptions and limitations to IP, and the creation of innovative alternatives to strict intellectual property regimes."); Jack M. Balkin, What Is Access to Knowledge, BALKINIZATION (Apr. 21, 2006), http://balkin.blogspot.com/2006/04/what-is-access-to-knowledge.html ("[N]o matter how restrictive IP laws may be, they may not be the major cause of human suffering and lack of access to knowledge around the world.").
56. Arrow, supra note 27, at 616-17; see also Benkler, supra note 28, at 37 ("On any given day, enforcing copyright law leads to inefficient underutilization of copyrighted information.").
57. Hand on Patent Reform, supra note 5, at 115.
“[c]laims are frequently a far cry from what the inventor invented.”

“Patent law routinely gives control over products never built or contemplated by the patent owners.” As a public relations matter, this feature of modern patent law is particularly offensive to actual inventors. A patentee can be given exclusive control over technology he did not even invent. With the independent invention issue, independent inventors are at least being taxed by another one who actually invented the same thing. But by extending patent claims beyond the actual invention, actual inventors are being forced to pay tribute to patent holders who did not invent the technology in question but yet managed to push broad patent claims through the system. This problem is particularly apparent with the backlash against patent trolls. In other, more doctrinal work, I argue that this feature of our current system is inconsistent with the patent statute and even the constitutional limits of the patent system. The point here is to emphasize that this feature of modern patent law, which flows from the incentive theory, also induces serious animosity.

Without provable benefits and with antagonized constituents, the patent system cannot stabilize or mature. The patent controversy just goes on. For example in their recent book, Against Intellectual Monopoly, economists Michele Boldrin and David Levine conclude that “intellectual property[. . .] does not increase either innovation or creation. They are an unnecessary evil.” Their “basic conclusion . . . is that intellectual monopoly—patents, copyrights, and restrictive licensing agreements—are unnecessary.” Based on the current narrative, their response cannot be fully refuted. By looking beyond the rather coarse incentive story, we can begin to build an acceptable patent narrative.

III. TRADITIONAL PROPERTY FUELING A REVOLUTION IN PATENT THEORY

As noted in the Introduction, this Essay argues that traditional private property might provide critically important guidance for today’s stagnant patent theory. That suggestion will surely strike many as
inappropriate. There are significant normative, rhetorical, and economic differences between tangible goods, the focus of the traditional private property market, and intangible goods that are the heart of patent law. As a result, making this express connection between intellectual property and traditional property is seen as naïve and foolish. Admittedly there are real differences between these two areas that make this comparison challenging, and they will be dealt with below, but perhaps there is also a more significant perceived barrier. For many, equating intellectual property with traditional property appears anachronistic as it appears to shoehorn the complex modern institution of IP into the absolute, stodgy, and nearly medieval institution of traditional property. And it is this last perceived barrier that this Essay will address first.

A. Promoting Progress by Following History

In a significant way, our current understanding of traditional property is more modern and advanced (and importantly accepted) than our understanding of intellectual property. At one time traditional property was rationalized in ways that looked awfully similar to today’s incentive-based patent theories. Those mercantile views dominated property discourse until the mid-nineteenth century. Early on, as with our current interest in technological development, the state was very concerned with more general economic development. Traditional property, the market, and economic development were steeped in mercantilist views. It was thought that the state had to encourage economic development directly. Early on, as related by Morton Horwitz, this made some sense especially

[i]n an underdeveloped society, with little available private capital, a policy of encouraging development required that the legal system provide legal arrangements that guaranteed private investors certainty and predictability of economic consequences. Perhaps the most important of these guarantees was protection against freedom from competitive injury. To accommodate this policy, courts promulgated rules reflecting a view of property as essentially exclusive and monopolistic, so that every attempt to draw business away from an existing enterprise was usually treated as an injury to property itself.  

64. Id. at 111.
Importantly, this description of encouraging development of traditional markets would feel at home in patent theory. At one time both traditional and intellectual property shared a common justification along these mercantilist sentiments: risky development needed direct state support.

Yet today, such notions are foreign for traditional property. Two hundred years ago, traditional property underwent a revolution. Those monopolistic grants, that had once been thought of as inherent attributes of property, began to lose their luster. People appeared to be willing to take on the risks of development themselves without government-created incentives, and the existing exclusive grants came to be seen as net obstacles to economic growth as they prevented these upstarts from entry. The mercantilist foundations were being swept aside as classical economic thought came to the fore. Again, as related by Horwitz:

But as [economic] development proceeded, the early monopolistic strategy for encouraging economic growth soon became a legal barrier to further growth. . . . Under the continuing pressure to encourage further investment . . . [a] monopolistic and exclusionary conception of property was replaced by legal rules that allowed various uncompensated injuries to property. Eventually, out of this sweeping redefinition of property, the legal presumption in favor of competition emerged full blown.66

Property no longer protected property owners from competition. That change, that great democratization of enterprise, which finally took hold by the mid-nineteenth century, allowed for a great release of "individual creative energy."65

As a historical matter when traditional property underwent this revolution, patents were left behind. Even as he attacked mercantilism generally, Adam Smith made allowances for keeping patents as government grants because they were quite different from tangible property. This raises an important question: Did patent law have to be left behind? Was patent law left out of the classical economic revolution because patents and technological advances are so inherently different that they had to remain essentially an exceptional, mercantilist institution or, if we are careful, could the benefits that accrued from the great release of "individual creative energy" extend to patents as well?

65. Id.
66. JAMES WILLARD HURST, LAW AND THE CONDITIONS OF FREEDOM IN THE NINETEENTH-CENTURY UNITED STATES 6 (1956).
The purpose of this Essay is to argue that we should thoroughly explore the latter option. We should try to bring the positive aspects of the postmercantilist economic theory (and experience) to bear on patent theory. There are significant reasons to think we are now ready for exactly such a revolution in intellectual property (two hundred years after it swept through traditional property). Returning to the sentiment in the mid-1800s, we are increasingly viewing patent law not as a great boon to technological development but rather as an obstacle. Just as before, there is a great pent-up energy of creative technological entrepreneurs anxiously hoping that the current patent system would just get out of their way. Furthermore, we are becoming increasingly aware of the immense informational burden a truly incentive-based patent system imposes. For every industry we must guess the right level of incentives and balance them against their costs. Part of the classical economic revolution was to rid the state of those informational burdens. In fact, "[T]he genius of a property rights system is that it relies on such judicial discretion as little as possible." This does not mean that the state is not involved. The state was and still is involved in defining and defending property rights and in continuing oversight and regulation of the market through antitrust.

In short, could we solve the incentive problem in intellectual property by no longer worrying about it? Could we, as was done for traditional property, design a private property institution where private decision making could produce efficient and robust technological development without the need for the state to create artificial incentives?

**B. IP as Modern Private Property: Promise and Obstacles**

As mentioned above, many have reasons to doubt that intellectual property could ever comfortably fit into the property rubric. First, traditional property deals with scarce, rival resources where decisions over allocation and use have to be made. Nonrival ideas that are at the heart of patent law just do not seem to fit. In addition, the centerpiece of the neoclassical model is competition with the end point of price reaching marginal cost. With that end point, no one could ever recover their fixed costs incurred in creating their inventions. In short, even the central economic model appears inappropriate (and indeed as shown below it is). Lastly, the rhetoric of traditional property all too

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69. BESSEN & MEURER, *supra* note 27, at 222.
easily leads to absolute control, and this seems alien to inherent balancing found in most of patent law. All these obstacles ultimately need to be addressed.

To enable a private property patent system that can adequately address these concerns, this Essay begins by sketching private property at a high level of generality. The Essay utilizes a modern analytical framework for describing private property. That framework breaks the analysis into two distinct steps: ownership and exclusion. Though deeply related and often erroneously used interchangeably, recent work has emphasized that ownership is a "special . . . object of analysis that is independent of the right to exclude." 

Ownership is the primary, more fundamental concept. Ownership entails deciding who should own some scarce resource and deciding to what productive end that owner can choose to use that resource. Its "defining characteristic is that it is the special authority to set the agenda for a resource." In other words, society taps one individual and delegates to him the responsibility to decide (from among some spectrum of uses) how to best to use that scarce resource.

For modern private property markets, that ownership and agenda setting discussion is deeply connected to the neoclassical model of market exchange. From an economic perspective, the function of the tangible private property markets is to allocate scarce resources efficiently. As outlined in their textbook on economics, William Baumol and Alan Blinder state "the fact that since no resource is available in unlimited supply, people must consequently make decisions consistent with their limited means." They identify this as "the fundamental issue of economics."

For a large number of our scarce resources, we have chosen to use a private property market to allocate the use of those resources. Sometimes owners hold onto and consume those resources on their own, but often they choose to sell those resources (or products made

71. Id. at 290.
72. See id.; see also Henry E. Smith, Intellectual Property as Property: Delineating Entitlements in Information, 116 YALE L.J. 1742, 1777 n.114 (2007) ("Also reminiscent of the modular benefits of property is F.A. Hayek's argument that property, by establishing boundaries over things over which decision-makers would be free to take action and prevent interference by others, was the best and only workable method to achieve a coincidence of expectations among members of society.").
73. BAUMOL & BLINDER, supra note 13, at 34.
74. Id.
from them) in the market. In that system, firms following a profit motive make decisions on what inputs to buy and what outputs to produce. To make those decisions, firms are assumed to have three pieces of information before them. They have the prices for inputs. They have a production function that embodies our current technological know-how that maps all inputs into technologically possible outputs. And they have demand curves for the outputs. With these three pieces, firms should in theory be able to make profit-seeking decisions about resource use.  

Production functions map all available inputs into their outputs. And given market prices for those inputs, a firm can use the production function to calculate the cost of producing any of the outputs found in their production function. Based on estimates of the demand for each of these outputs, a firm can estimate the revenue it would generate from producing each of those various outputs. Subtracting the costs of production from the revenue gives the predicted profit available for each possible output. Scanning the profitability of each of these choices, firms choose the production plan that maximizes profit.

The bulk of microeconomic analysis is devoted to proving that this overall scheme, tempered by competition and entry by others, will discipline private decision making such that the resulting production decisions will be socially beneficial. That story forms the basis of neoclassical economic microeconomics.

Once we delegate an owner for some resource, then we determine the range of agendas that are possible for that resource. Neoclassical economics along with modern lessons from antitrust guide the range of agendas that can be left in the hands of private decision making. Having that strong normative picture of the types of activities that are socially beneficial and can be handled by private decision making, private property can turn to the topic of exclusion. Exclusion is an instrumental discussion that follows the discussion of ownership and agendas. It asks what activities by nonowners would interfere with those productive agendas of the owners. Through exclusion the property system aims to prevent all the acts by nonowners that might interfere with the productive agenda set by the owner. In this sense, as emphasized by Jeremy Bentham, property provides security so that

75. See id. at 34-50.
76. See id.
77. See JEREMY BENTHAM, THE THEORY OF LEGISLATION 109 (C.K. Ogden ed., 1950) ("We come now to the principal object of law,—the care of security. That inestimable good,
we can confidently plan and invest in socially beneficial projects. It allows people to focus on productive business models; with property, people can focus on "planning, effort, and investment." Those interfering actions become the core duties of forbearance prohibited by the exclusive rights that accompany ownership. In a rough sense, nonowners are prohibited from doing harm to the productive plans of owners. Note that this private property vision of exclusion is not a "legal incentive" vision. Exclusion in private property does not create incentives, but it instead preserves existing economic incentives from being lost due to third-party actions.

For tangible goods this analytical framework can support relatively broad rights of exclusion. As to providing security over tangible resources, society asks a simple question from a resource owner: what acts prevent you from disposing of the scarce resource in the way you deem best? Assume you own an apple. In other words, society has nominated you to choose the way in which the apple should be used. Society wants you to decide whether it should be eaten, should be made into a pie, or should be sold. You may be quite reluctant to contemplate some far off but ultimately productive and beneficial plan if you are worried about the myriad ways others might derail or interfere with your plan. Property tries to prevent this type of worrying and its associated acts of self-help. Property asks what security, what assurances, do you need from the rest of us so that you will stop worrying about such interferences and you will instead focus on disposing of the apple efficiently? These are the acts that property strives to prevent. As stated by Bentham, property generally does not "reward;" rather, it "preserves" "recompense" by "arresting the hand

the distinctive index of civilization, is entirely the work of law. Without law there is no security and, consequently no abundance, and not even a certainty of subsistence and the only equality which can exist in such a state of things is an equality of misery.

78. Carol M. Rose, The Shadow of The Cathedral, 106 YALE L.J. 2175, 2188 (1997); see also CAROL M. ROSE, PROPERTY AND PERSUASION: ESSAYS ON THE HISTORY, THEORY, AND RHETORIC OF OWNERSHIP 3 (1994) ("[As] expressed by the eighteenth-century philosopher Jeremy Bentham: property is designed to do something, and what it is supposed to do is to tap individual energies in order to make us all more prosperous.").

79. For this Essay, we assume that society can efficiently choose an owner for important resources. See Carol M. Rose, Possession as the Origin of Property, 52 U. CHI. L. REV. 73 (1985). And for the case of patents, the critical resource is the inventor's own time and human capital. As long as we are still in a system with a strong emphasis on liberty, then the presumptive owner of someone's time is that person himself.
[that] seek[s] to ravish . . . from you.” Property aims to prevent acts by nonowners that will cause harm.

For a tangible resource like an apple, there are many, many ways that others can impair your plans for the apple. Invariably, they all tend to involve some physical contact with the apple. As a result, property in apples precludes others from almost all physical contact. Because the resource is relatively fragile, property must be relatively broad and draconian—all the potential harmful acts must be prevented. As a general rule, others are not allowed to touch your apple.

Importantly, as will be shown below, broad exclusion is not a necessary feature of property—exclusion is just the instrumental attempt to prevent harm to the agenda setting ability of owners. For some resources, broad exclusion is necessary. For some other resources and uses, broad exclusion is not needed.

IV. PATENTS AS MARKET PROPERTY: INVENTION MARKET THEORY

This Part outlines an alternative patent narrative. Rather than creating incentives through exclusion, this alternative narrative focuses on making patents an extension of the traditional market economy. Following the outline of private market property given above, this Part first explores ownership of scarce resources in the context of patent law. It then considers the range of agendas that can be socially justified for those resources, and it then concludes with a discussion of exclusion. This Part first describes the basic contours of such an invention market theory and its major features. Its focal point is the productive acts of creating and then distributing an invention to those that can use it. The focus is not patents and their exclusion. The normative heart of this patent theory is the creation and distribution of technology to those that benefit from it. This narrative puts socially beneficial productive acts directly at the focus rather than indirectly as done by the current patent narrative. This Part shows how a system built around that narrative fits as a natural extension of private

80. BENTHAM, supra note 77, at 110.
82. See Smith, supra note 72 (arguing for broad property rule for intellectual property due to information costs).
property and the tangible marketplace. This Part suggests the tools by which we might prove that the projects that are privately profitable under this system are also socially beneficial ones. In contrast to the current theory, there is no inherent need to limit access to those who can utilize the invention.

Under invention market theory, the function and purpose of the patent system is, as the name implies, to undergird a market for inventions. Inventions are solutions to technical problems; they provide utility.

Economics has already created the metric by which to measure the efficiency of this system. Paul Samuelson pointed out that the socially beneficial public goods are those whose costs are outweighed by the cumulative utility given to those who get access to the public good. The Samuelson condition, as it is known, can be adapted for inventions and can be used to gauge which inventions are worth the opportunity-consuming cost inherent in consuming scarce resources to create the inventions. As a society, we want inventors to pursue those socially beneficial inventions. In other words, not only do we want to create inventions, but we want to ensure that they get widely utilized. Invention market theory provides a framework by which private inventors and their allied investors will undertake only socially beneficial inventions. In other words, invention market theory builds a patent system where the private interests and decision making of private inventors will hopefully coincide with society’s interests.

A. Owning the Scarce Inputs to Invention

Invention market theory frames patents as private property. Inventors own their time and other scarce resources that are needed inputs for creating inventions. In regards to private property theory, the purpose of invention market theory is to set conditions such that inventors make socially beneficial decisions about allocating those scarce resources toward creating and distributing inventions.

Invention market theory extends the traditional market to enable inventors to sell their invention to those that can utilize their inventions. As to private property, invention market theory frames patents as mediating a market exchange. Inventors who have allocated scarce resources toward inventing exchange the invention with a user who can use the invention for money. Thus this private property vision for patents sees them as just another example of allocation of
"economically important resources ... on the basis of bilateral exchange rather than central reallocation." 83

The idea that patent law is a form of private property (premised on the scarcity of the inputs to inventing) has been highlighted for some time. 84 But as used here, that observation allows patent law to not only benefit from the history and experience of traditional property, but it also allows patent law to fill an existing hole in private property theory.

As was noticed decades ago (and as discussed above), in the basic neoclassical model, firms are assumed to have all available technology such that they can construct a production function. 85 Yet, the model does not explain where technology comes from. Technological growth was thought of as exogenous to the model. Especially as it is now accepted that technological growth is an important part of economic growth generally, attempts have been made to make technological growth an endogenous part of firm behavior.

Invention market theory aims to provide a natural extension of this neoclassical model of a firm that incorporates endogenous technological growth. In essence, invention market theory aims to build a patent system that enables some to leave their jobs in the existing tangible economy and to become professional inventors who will supply inventions to firms. In short, patent system should focus attention on the use of scarce inputs into creating technological know-how that expands production possibilities.

B. Allocating Resources to Invention: The Samuelson Condition

The next question is deciding how much time and other inputs should society devote to inventing? As a society, we need to develop technology so that we can produce new products as well as produce old products with more efficient processes. The critical question is how much of our present scarce resources should we devote to developing those new products and processes. Invention market theory aims to make the decision by way of private decision making. In essence, this Essay aims to show that, with a modest set of exclusive rights, private individuals will become inventors (that is, people who

83. Waldron, supra note 13, at 343.
spend their time creating and distributing inventions for profit) in cases where that decision coincides with the best interests of society.

Importantly, such a system is not a legal incentive system. Such a system is not aiming to create legal incentives artificially inducing inventors to invent. Inventions are solutions to technical problems. And new inventions enable firms to do things that they had not been able to do before. Firms should be willing to pay for such solutions. Invention market theory aims only to enable inventors to create and sell their inventions to those that can use them. The patent laws that undergird that system only aim to prevent third-party acts (like piracy) that would otherwise threaten to derail an inventor's plan to satisfy that demand for his invention.

Creating inventions of course requires effort, and the effort expended creating an invention is effort not spent productively elsewhere in the economy. This is exactly the cost that Arnold Plant found so intractable in the current patent narrative. Society must determine which inventions are worth these lost opportunities; not all of them are worth it. To begin, persons of skill already have a rather robust production function. Many solutions to technical problems are already part of the public domain. Society need not expend valuable resources developing those already existing solutions. For this reason, this patent narrative has, as does the current patent system, a novelty requirement.86

But even among new inventions, not all of them will produce benefits that outweigh their costs. It is here that the public goods nature of inventions becomes most relevant and economic developments dealing with public goods can help to determine which inventions are socially worth undertaking. In a series of articles beginning in 1954, Samuelson developed what is now known as the Samuelson condition.87 It describes the Pareto-optimal condition for the provision of public goods and it determines which inventions are socially beneficial. Samuelson showed that public goods should be supplied as long as

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Here, $MRS_{zy}^i$ is the marginal rate of substitution between the public good $y$ and some private good $z$ for the $i$th person in an economy. $MRT_{zy}$ is the marginal rate of transformation between the public good $y$ and the private good $z$. Though developed nearly sixty years ago, this condition has only recently been brought to the discussion of intellectual property in the legal scholarship.\footnote{See Richard Corne & Todd Sandler, The Theory of Externalities, Public Goods, and Club Goods 23 (1986).}

Though daunting in appearance, its content can be interpreted relatively easily. The right hand side of the equation represents the slope of the production possibilities frontier between private good $z$ and public good $y$. It represents what private good has to be given up in order to create public good $y$. In other words, the right hand side of this condition is the opportunity cost of creating some invention. The right hand side represents the alternative outputs we could have produced in lieu of the invention. This cost is exactly the cost that worried Arnold Plant.

The left hand side of the equation is also understood relatively easily. It is the sum of marginal rates of substitution for the public good. It is the sum, over all individuals, of their preference for the public good $y$ over the private good $z$. In other words, thinking of the public good $y$ as an invention, $MRS_{zy}^i$ represents how much of some private good $z$ the $i$th person would give up for instead having the invention.

Importantly, the invention can be used by all firms simultaneously and each of them value the invention based on its utility to them. The Samuelson condition tells us which inventions are socially worthwhile to pursue. Inventions in which opportunity costs are outweighed by the collective utility they bring to firms are worth pursuing.

Using the Samuelson condition as the top-level guide for a patent system provides an important result. First, the patent system no longer needs to be seen as necessarily preventing access. Patents no longer need to be viewed as a necessary but tragic and unsavory compromise. Instead, anyone who can benefit from the invention can do so as long

\[ \sum_{i=1}^{n} MRS_{zy}^i \geq MRT_{zy}. \]
as they contribute (some subset of their benefits) to offsetting the costs of developing the invention. As explored below, building a private property system that can produce and distribute inventions that satisfy the Samuelson condition is surely challenging, but, in light of the public relations benefits available from employing this top-level condition, surely we should fully explore its potential. For invention market theory, the Samuelson condition then defines the range of socially beneficial agendas for an inventor’s time. Society should be able to support inventors who undertake the creation and distribution of inventions where those inventions satisfy the Samuelson condition.

C. Obstacle: Private Decision Making and Markets for Inventions?

The above analysis only highlights which inventions are socially worthwhile undertaking. However, it does not directly address whether some private property system could enable the private provision of those socially beneficial inventions. As has been understood for some time, if enjoyment of the public good were made excludable by law, then private production of public goods could become viable. In other words, if a firm that wanted to utilize some invention had to negotiate with the inventor to get access, rather than by copying (pirating) the invention, then private decision making could coincide with the Samuelson condition. With a minimal set of exclusive rights, an inventor would go forward with producing the invention when the opportunity cost of making that invention was outweighed by the amount each individual was willing to pay for the use of the invention. In other words, people would become professional inventors when their time and resources were better spent creating and distributing inventions than in some traditional business.

But even in Samuelson’s earliest writings on this, he immediately worried that such private production of public goods would be fatally defective. He worried that people would strategically understate their valuation of public goods, and as a result this private production scheme would underproduce public goods. To this day, this is thought to be a fundamental obstacle for the private provision of most public goods.⁹⁰ Though it is beyond the scope of this Essay, this stumbling block, namely the presumed unwillingness for consumers to reveal their valuation, needs to be the focus of patent theory. There are

⁹⁰. See Conley & Yoo, supra note 89, at 1803 ("Although economists have proposed a wide range of potential solutions to this problem, they have largely failed to produce a practical, incentive-compatible mechanism to induce consumers to reveal the intensity of their preferences.").
reasons to believe that such a patent theory could overcome that obstacle and could succeed in providing private decision making that satisfies the Samuelson condition. If patent theory focused just on inventions (as directed by the statute) rather than on information more generally, patent theory has a chance of overcoming this serious obstacle because the invention is a special and particular package of information that allows valuation that is near impossible for information more generally.

D. Promise: Defining Harm and Defining Exclusion

Having sketched the purpose and basic structure of an invention market based patent system, this Essay has yet to address the type of exclusion that is needed to protect and enable that system. A full consideration of that topic is beyond the scope of this Essay, and it depends a great deal on first answering some of the hard questions posed above in Subpart C, but nonetheless there are good reasons to think that a patent system designed to produce a market in inventions will not need the same absolute exclusion that is often seen for tangible property.

When the reasoning from Part III.B is imported into the intangible realm, we note an important difference. As opposed to tangibles, an owner’s plans for intangibles are rather hard to harm. Society has put you in charge of your own time and assorted other resources (like laboratory space, word processors, etc.) that are needed to create intangibles. If you intend to invest your time and resources to create some intangible and you do not intend to sell that intangible, then there is very little anyone can do to disrupt that plan. Others can take, share, or even try to sell copies of your intangible, but you still have your original intangible and you can enjoy it all you want.91 Your plans have not been (in fact cannot be) derailed by others. Private property’s exclusionary grant is just not needed here. This is a very important difference between property in tangibles and property in intangibles. For tangible things, private property is needed if you intend to consume the resource yourself or if you intend to exchange the resource in the market. For things like ideas or inventions, there is no need for any exclusion to protect your own use of your invention.

For things like inventions, the actions of others become relevant only when you invest time and resources to create an intangible and

91. See THE PAPERS OF THOMAS JEFFERSON, 11 MARCH TO 27 NOVEMBER 1813, supra note 12, at 383.
you intend to sell it in hopes of recouping your costs. There the actions of others can have a real impact. Others can act in ways that can derail your plan to recoup your costs. It is these derailing acts, and not much else, that should be the focus of patent law's exclusionary reach. Property in tangible goods has to have rather broad exclusion because there are so many different ways others can harm a tangible. For intangibles, there are only very specific acts that need to be addressed. In short, patent rights need not be very broad because there are not that many ways to "hurt" an idea. First, consider outright piracy; outright copying and selling of my invention that I intended to sell myself surely impacts my ability to recoup my expenses. If I want to be an inventor, piracy then interferes with my agenda for my time. The act of piracy in patent law is the copying and then selling of the invention of another.\(^{92}\) When this occurs, the original inventor cannot recoup his large upfront costs. Pirates do not have similar substantial fixed costs to recoup and thus they can undercut the initial inventor. This prevents the initial inventor from recouping his investment of time and resources. In short, piracy prevents inventive business models from being feasible in the same way that theft prevents the feasible production of tangible goods. Piracy is copying that forecloses any hope of recovering the initial investment. In economic terms, unfettered piracy drives price to marginal cost. It is a parasitic act that kills its host. Such acts are described in misappropriation as acts that might kill the "goose that lays the golden eggs."\(^ {93}\) Without reasonable hope for any profit and in fact with almost certain losses, piracy deadens inventive business models. In order to provide adequate security, patent law needs to prevent piracy.

And if the normative focus is on selling the invention created by an inventor, then it is not entirely clear that the scope of exclusion should ever extend beyond the actual invention conceived by the

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92. Consider also the effect of consumers who copy the invention but who do not intend on selling it to others. Individually they cause less harm than pirates, but collectively they could cause the same harm. Although there may be room for more nuanced arguments, for the purposes of this Essay, such consumer copying and using also needs to be prevented. See Sara K. Stadler, Copyright as Trade Regulation, 155 U. PA. L. REV. 899 (2007); see also Shyamkrishna Balganesh, Foreseeability and Copyright Incentives, 122 HARV. L. REV. 1571 (2009).

93. Richard A. Posner, Misappropriation: A Dirge, 40 Hous. L. REV. 621, 639 (2003) (describing the best test for misappropriation as one developed by Judge Winter, which "requires the court to determine, in any case that passes through his first four filters, whether the ability of other parties to free ride on the efforts of the plaintiff would so reduce the incentive to produce the product or service that its existence or quality would be substantially threatened" (internal quotation marks omitted)).
inventor. One of the most conspicuous features of the current patent system is the breadth of modern patent claims. They are “frequently a far cry from what the inventor invented.”94 In other words, “Patent law routinely gives control over products never built or contemplated by the patent owners.”95 In recent doctrinal work, I have argued such broad claims have been allowed by a misinterpretation of the patent statutes and when properly interpreted, patent claims cannot exceed the inventor’s actual invention. Though I think that doctrinal argument can stand on its own, a higher level, policy driven justification of such a limit would be helpful. Invention market theory provides that limit. Broad exclusion beyond the actual invention is just not justified by invention market theory. If the aim of the patent system is to enable inventors to sell their inventions, then there is no need to give exclusion over technological solutions that were not conceived by that inventor.

In an important sense, this instrumental view of exclusion in patent law places focus on the acts that would harm the ability of the system from effectuating the efficient purpose highlighted by the Samuelson condition. As described above, the focus of exclusion would be on preventing the acts that inhibit owners of the scarce inputs from using those resources toward the socially beneficial agendas of creating and distributing useful technology. In their recent book, Herbert Hovenkamp and Christina Bohannan have put a great deal of emphasis on searching for a principle of harm as the guide to the proper scope of patent exclusion.96 Guided only by the coarse incentive and access narrative, it is quite hard to articulate a theory of harm that can help define the proper bounds of the patent system. This Essay argues that the proper allocation of scarce resources toward inventions and the subsequent distribution of those inventions to those that can use them can provide the normative basis by which to start a more constructive discussion about harm and the exclusion needed to prevent it.

V. CONCLUSION

We need technological progress and we need a stable, effective patent system to promote it. Currently we do not have one. For too long, we have been constrained by our legal incentive vision for the

94. See Mueller, supra note 58, at 899.
patent system. It is inherently indeterminate and it leads to discord. As argued above, we should not and need not be worrying about creating incentives. We should stop focusing on creating incentives through exclusion and instead focus on creating and distributing useful technology. A simpler patent system that focuses only on allowing inventors to create and distribute their inventions to those that can use them can be justified and does not create inherent dissent.