

A Private Ordering Solution to the Public Problems of Anticommons

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*Abstract*

*The problems of the intellectual property (“IP”) anticommons have become infamous. The potential for vast numbers of IP rights to cover a single good or service is feared to so unduly tax and retard the creation, use, or sale of the good or services that no enterprise may even try. The transaction costs of the deal alone may be overwhelming. Those wanting to enter such a line of business fear they will be held up, leaving un-met the demand for the goods or services it would have provided. Simply put, too many property rights in IP may block deals from getting done. The impact may be life threatening. To cite just one prominent example, we may never see various diagnoses and treatments targeted to specific genetic profiles that are otherwise promised by DNA-on-a-chip technology but putatively blocked by the existence of patents on so many of the underlying pieces of DNA. To date, the suggested responses to the anticommons concern in IP have included a host of reforms in patent law and policy. This paper offers an alternative solution based on private ordering. The core of this private ordering solution is a limited liability entity structured so that all of its stakeholders are themselves limited in their actual and potential stakes, such as by being financed by debt rather than equity and set up so that it avoids significant capital accumulation while providing certain royalties to owners of all patents that would be infringed by its business mode. The structure of such an entity is designed to serve a crucial coordination function on behalf of all relevant property owners and other members of the team production story, with participation by many members enhancing the coordination effect on the rest. Two implications of this private-ordering solution also are explored: the ways it may avoid some practical costs and risks of legal reform in this anticommons context; and some basic lessons about how to conceptualize certain aspects of the IP system.*

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## I. INTRODUCTION

A recent explosion in the intellectual property (“IP”) literature focuses on a set of problems relating to an arrangement of property rights called an “anticommons.” The basic distinguishing feature of the anticommons is the existence of such a large number of IP rights covering a single good or service that the provision of that good or service is feared to be unduly taxed and retarded, if not simply prevented.

A leading example often discussed is DNA-on-a-chip technology involving micro-arrays of thousands, or even tens of thousands, of individual pieces of DNA, each of which may be covered by a different patent, many of which may have a different owner. It is feared that entering a business to make use of or to sell such a chip would require identifying, finding, and then successfully transacting with a staggering number of individual IP owners. This, combined with the risk that any one of these IP owners could hold out and veto the entire operation, raises a number of problems for businesses and for the public at large: those wanting to enter a line of business that would use the subject matter covered by such a plethora of IP rights fear that they cannot, and those wanting to use whatever those businesses would have produced cannot. The impact may be life threatening – preventing promising diagnoses and treatments targeted to patients having a number of specific genetic profiles.

To be sure, debate exists in the theoretical literature about whether there is an anticommons problem for property rights in general and for IP in particular. For example, Richard Epstein and Bruce Kulic have pointed out that for the unused stores in the post-socialist economy that were the topic of Michael Heller’s initial work on anticommons, efforts by the bureaucrats to engage in open trading of their permission for personal gain were likely to trigger various forms of criminal liability for graft, bribery, public corruption, etc. Other work by

one of the present authors extends the analysis to show how the anticommons problem is inapposite to IP rights to the extent that those rights are clear, certain, owned by a residual claimant, and openly tradable; and that the anticommons problem studied most recently by Heller thereby can be seen as no different from the problem of permit-thickets studied earlier by Epstein. Put differently, it is the nature of the right to exclude or say “no” (or more precisely the nature of the associated right to say “yes”) that is the key to the problem (regardless of its name: permit thicket or anticommons) rather than the number of individuals from whom permission must be sought. Nevertheless, because the nature of IP rights in the real world never will be perfectly clear, certain, owned by a residual claimant, and openly tradable, the anticommons problem is one worth further exploration.

Suggested responses to these public problems include a host of law and policy reforms that target certain types of patents. Representative examples include a shift towards decreased enforcement rules that in effect would leave enforcement only backed up by a liability rule rather than a property rule. Other examples include the outright elimination or prevention of such patents through the use of various enhanced patentability and patent-validity requirements such as utility, statutory subject matter, description, and obviousness.

This paper offers an alternative solution based on private ordering. The core of this private ordering solution is a limited liability entity structured so that all of its stakeholders are themselves limited in their actual and potential stakes, such as by being financed by debt rather than equity and set up so that it avoids significant capital accumulation while providing certain royalties to owners of all patents that would be infringed by its business mode. To achieve this coordination successfully, the approach must credibly commit to a variety of restraints on the potential upside each member of the “team” can look forward to, including the founders and shareholders. The proposal thereby relies on both coordination and self-restraint, two issues often overlooked in the property literature in general, but emphasized throughout the work by both of the present authors. Not only does this private-ordering solution reduce some of the costs and risks of legal reform in the anticommons context, it suggests a number of basic policy implications for IP.

The paper proceeds as follows. Part II introduces the private ordering solution, paying particular attention to many of the particular hurdles it will have to overcome to have a chance of being successful. Part III discusses some serious obstacles and limitations to the proposal, including some that although unlikely to occur may be difficult to overcome if they do arise. Part IV points out how such a private ordering solution avoids some of the risks associated with legal reform. Part V explores some implications for IP theory that are elucidated by the private ordering approach. Part VI concludes.

## II. SKETCHING A PRIVATE ORDERING SOLUTION TO THE ANTICOMMONS

Although the private ordering solution proposed here may initially appear surprising in several respects, the below discussion is designed to show that it could be achievable, based on its substantial similarities to a number of arrangements that are at least sufficiently acceptable to be in well-known use. Nonetheless, as often occurs with innovation, the newness of the present proposal lies in its combination of elements from such existing models and as far as we can discern this newness is as yet untested in the real world. Therefore, the below discussion of the proposal in relation to these models is offered only as an initial sketch of an approach that should be further evaluated before being implemented. Assuming that the other obstacles and limitations discussed in Part II can be overcome, the core concepts that the following discussion is designed to provide for supporting the proposal are the dual pillars of coordination and restraint.

### A. Model One: Limited Liability and Modern Mass Torts

The anticommons problem stems from the need to obtain a non-exclusive license from each of the pertinent IP owners to engage at least in the limited use needed to conduct the desired line of business, say a diagnostic chip containing ten thousand patented DNA sequences. The literature stresses the transaction costs and the seeming waste in identifying, finding, and then successfully transacting with such a staggering number of individual IP owners, especially in the face of the risk that any one could hold out and veto the entire effort after search and negotiation costs associated with many of the others have been incurred. The waste due to these IP rights is particularly troubling where, as is likely the case for a diagnostic DNA chip, no additional know-how or even materials are needed from the IP owner because they are readily available from the public domain. Therefore, the crux of the problem lies in the nature of the IP right itself, which is the right to exclude others from using the subject matter covered by that IP right. Put differently, the problem is seen as being only about freedom to operate rather than about the need to obtain other goods or services.

Because the IP owner's right to exclude is backed up ultimately by its right to sue an infringer to obtain damages, to obtain damages enhanced by attorney fees and potential trebling, as well as to obtain an outright injunction, the ultimate driver of the anticommons effect appears to be the credible threat of countless lawsuits. A private-ordering approach to a line of business that could operate in the face of such a threat therefore offers at least a starting point for a potential solution to the anticommons problem in certain cases.

Consider the modern business model of a firm operating in the face of countless likely tort claims, such as Dow Corning's breast implant business. Despite what is likely to be a total set of eventual suits for claims that exceeds the

total set of revenues, the business presently is operating in a way that apparently is generating gains for each of the constituents in the team production story: shareholders, managers, laborers, business creditors, and customers; and is apparently satisfactory to the public at large as it is not outlawed. Put differently, the combination of the limited liability of the corporate form with the non-fraudulent transfers of dividends, salary, debt service, and customer support make the activity worth pursuing, even in the face of so many lawsuits. Although limited liability is a well used device for a variety of reasons, the basic element of the Dow Corning model that is useful for the present proposal is that it suggests a way for a large team production story to unfold in a way that is relatively happy for each member of the team even when facing a set of potentially impending claims being bigger than impending gains.

Thus, the first step in the present approach involves the setting up of the new business line within a distinct limited liability entity, such as a separate corporation. Because this entity is likely to be new rather than established, as was the Dow Corning enterprise, initial financing is likely to be needed for various capital assets like real estate and equipment.

Adding to the veil of limited liability, the second step operates to ensure that the IP owners eventually are constrained when facing such a business by ensuring that the entity never has an interest in a hostage that can be taken. This is achieved through the use of a capital structure that is not significantly net positive, if positive at all, such as by financing with debt rather than equity. To ensure that creditors are willing to provide such financing, they are given security interests in the underlying capital assets.

Having addressed the risk that a potential IP owner wanting to find a pool of assets might try to reach through the entity, or into the entity, the third step addresses the risk that such an owner attempt to step ahead of the entity by going after its future net income. This is achieved by making sure that the existing claims on such future gross receipts come as close as possible to approximating their total value.

The combined effect of these three steps should lead to a business entity that can be envisioned as being located within a desert, with a narrow and shallow pool of operating liquid assets, and a net income stream that is no more than a trickle. It must be unappealing to even the thirstiest of hyenas. Because hyenas are notoriously curious and eager, they must be offered an attractive option. Therefore, the entity must announce a set of rules that offer every hyena the option to bring its own bona fide straw (albeit only a narrow one) to come drink from the pool.

Returning from the desert analogy to the proposed entity itself, the payout rules must offer every IP owner with a bona fide claim for infringement a chance to come and withdraw a modest royalty payment. This might be through a

licensing arrangement or through the structuring of the entity itself. For example, the proposed entity might be structured as a limited liability company, in which the various IP owners are members with the right to participate, to some degree, in the entity's profits in exchange for granting the entity a license. The precise rules governing these royalties may take several forms. For example, because early certainty will be important to all constituents, a higher amount may be offered to those who self-identify early, providing an incentive to do so. As another example, all claims might be paid out as soon as they arrive into a separate trust for the benefit of future claimants. This technique is presently used for plaintiff class action suits in modern tort cases in which all classes of plaintiffs have not yet even been identified.

Importantly, the other members of the team production story must also be limited to rather narrow straws, so that the potential for future income for each of them individually avoids becoming a hostage to an IP owner. The upside for all participants, including founders, is that the deal gets done, which both enables a modest direct benefit linked to each one's stake in the enterprise as well as a host of potentially more significant indirect benefits in the form of increased information about uses of particular assets and increased sales of various complementary goods and services. Tax treatment and accounting niceties aside, even non-profit entities can generate non-trivial benefits for stakeholders. The proposed entity relies first on a limit on the benefits any one stakeholder can look forward to so as to avoid hostage effect and second on a turn about in the transaction cost problems by ensuring that the size of such benefits are at least less than the transaction costs to an IP owner of attempting to appropriate them.

Once the entity is set up with such a business form, capital structure, and claimant rules, it now can begin operating at full steam, with no added regard for potential infringements, because many IP owners will opt in to participation and thereby grant limited non-exclusive licenses and because the remaining owners will in effect agree later to do so for reasons explored below. Recognizing that the transaction costs associated with property rights are always to some extent shared between the owner and the potential infringer/assignee/licensee, in this case most of this shared set of transaction costs are borne by the owner. More particularly, the costs of identifying and finding are totally borne by the owner. While the entity will have in essence expended much of the actual transacting costs, itself, when setting up its payment rules and advertising them, there surely will remain some set of transacting costs to be borne by both parties when the IP owner actually arrives on the scene with straw in hand.

The IP owners that arrive with straw in hand will face a relatively simple payoff choice. They can either use the straw to take a sip or they can sue and get nothing. The limited pool of net assets combined with the limited trickle in net income need only be limited so far. That is, their combined attractiveness need

only be lower than the unattractiveness of the costs of litigation for IP owners to rationally elect to opt out of litigation and into the entity. A suit for enhanced damages won't increase the volume available to the IP owner. And a suit for an injunction will only decrease the volume by cutting off the trickle.

In effect, the entity will operate by facilitating coordination among all of the many IP owners and the other members of the team production story by binding each constituent to a set of rules imposing a high degree of self-restraint. At least this is the case if all decisions are informed and rational. To help ensure that they are informed, the entity must take great strides to advertise its strategy. But little can be done to eliminate the inevitable human frailties that render all individuals only boundedly rational, which raises a set of problems discussed below.

#### B. Model Two: Peer and Social Pressures and Airline Bankruptcies

Although Model One suggests a reason the proposed entity will avoid hold outs when the IP owners are perfectly rational, it is recognized that no actual individual is perfectly rational and moreover that an individual who has had an act of infringement (threatened or actual) imposed on her is likely to be even less rational than otherwise. The model of the interactions among various labor and customer groups in the modern airline bankruptcies suggest a way to cabin what otherwise may be either rational or irrational hold out threats to the production team.

While the popular model of labor disputes often portrays management against labor, the serial bankruptcies facing modern airlines evidence a set of circular disputes among different groups of labor, indeed in the United Airlines case involving a firm that is employee owned. A hold out union threatens not only the interests of management, but also the interests members of the other unions have in future employment and the interests all union members have as shareholders. What is more, ticketed customers are an additional non-trivial population of potentially adversely impacted individuals. This creates a formidable combination of both peer and other social pressures on each individual union to not hold out and strike.

Similarly, for the entity proposed here, any one IP owner's decision to hold out and to sue would have the effect of cutting the straws of not only all of the other thousands of IP owners, but also of preventing the patient population who would be potential customers of the business from obtaining their essential medical screening. Put differently, the coordinating role played by the proposed entity need not leave the entity at the center of a dispute. Because of the stakes facing these many diverse stakeholders, some of whom are peers of the IP owner and others of whom are sympathetic patients, the entity itself may only need to

help ensure these different groups are sufficiently informed to fight the battle against the hold-out IP owner rather than fight that battle itself.

#### C. Model Three: Collective Action, Antitrust, and ASCAP/BMI

Because the entity in effect coordinates a huge set of IP owners in a given field – in the case of a DNA chip the number is likely to be in the thousands and covering almost all of the sequences relating to a particular medical condition – the entity must at least consider antitrust concerns. Although this level of horizontal integration may indeed trigger a serious antitrust red flag, the antitrust exemption enjoyed by artist rights collectives such as ASCAP and BMI provide a model for overcoming such antitrust obstacles.

It is important to recognize the limits of the antitrust concerns themselves. In the past, horizontal arrangements among practically the entire set of thousands of entities within a given field would surely have triggered a per se antitrust violation. But this is not likely to occur today for several reasons. First, the arrangement proposed here can be seen as vertical rather than horizontal because it is between the user of the IP and the owners, rather than directly among the owners. Second, in most cases per se treatment has been replaced by the rule of reason. The outcry within the literature over the anticommons problem itself provides essential justification for the consumer benefits provided by the proposed entity, which are likely to satisfy a rule of reason analysis.

What is more, the case for finding no antitrust violation for the proposed entity is even stronger than it is for the ASCAP and BMI models because for many of the items being bundled in the proposed entity there is no established market at all. In contrast, one factor that made the antitrust case against the ASCAP and BMI models as strong as it was is that those assets did have established markets and so the bundling of those items could lead to real monopoly effects. Another contrasting factor is that unlike the ASCAP and BMI models, the proposed entity allows individuals to coordinate with each other before making significant investment in their own activities.

#### D. Model Four: Mass Infringement and the Google Libraries Project

Although the threat of mass infringement that lies at the heart of the proposed model may seem totally repulsive to some, the model offered by the Google Libraries project suggests a far greater tolerance for such a move. The proposed model is likely to be at least as acceptable if not more so than the Google model.

Like the Google project, the proposed entity offers each IP owner a number of real, non-cash benefits. First, the use to which the IP owner's subject matter is being put is a use that the IP owner itself would find very difficult to

achieve (unless it employed what is in essence the same approach as the one proposed here). Second, the use itself is likely to generate for the IP owner important information about other potential uses of its IP. Third, the use is likely to generate a type of advertising for the IP owner.

What is more, unlike the Google model, the proposed entity actually provides each IP owner with a real cash payment. In addition, depending on how the proposed entity's governance structure is organized, the IP owners may also have some degree of control over the entity. More particularly, the IP owners either will have some type of express control or at least some extent of *de facto* control given their ability to at least threaten hold out to some extent. These rights to payment and control combine to give the IP owners a real ownership stake in the proposed entity.

### III. OBSTACLES AND LIMITATIONS

Despite the many similarities the proposed approach has to the several models discussed above, and recognizing that it likely faces many of the same obstacles and limitations of those models, the approach proposed here also faces some additional obstacles and limitations that are distinct. Some of the most serious of these are discussed below.

One of the most serious obstacles to the implementation of the proposed plan is the risk that one of the IP owners would proceed so far as to obtain an actual injunction, either based on a preemptive declaratory judgment action, or as part of a regular infringement action brought after the entity begins operations. A judgment-proofing structure that takes advantage of limited liability and the rules of bankruptcy operates to blunt the threat of these lesser sanctions. But a court issued injunction is backed up by the contempt power of the court, which is a stronger sanction not blunted by a judgment-proofing structure.

Nevertheless, there are reasons the contempt power may not be invoked. The contempt power of the court is rarely, if ever, triggered on the court's own initiative. As a result, contempt proceedings are likely to be avoided unless the IP owner who has won the injunction elects to seek such additional court action. While an IP owner might elect such aggressive and expensive measures, the bringing of the action for the initial judgment and the proceedings seeking a contempt order combine to provide substantial delay. The entity can use this delay time to better educate the hold-out IP owner about the rational case for participation. To the extent the proposal's initial analysis was correct in understanding the game theoretic analysis of an IP owner's strategic interests facing the underlying structure in general, this time delay will enable sufficient exchange of information and subsequent reflection by the IP owner to allow him to reach the decision to participate.

One of the most serious limitations on the proposed entity is that it must not become too financially successful, at least using that term's ordinary meaning. The greater the chance that the entity will generate net gains, the greater will be the availability of those gains as a hostage to be either threatened or even taken by a IP holder. In effect this limitation is no more than a restatement of the basic strategy's commitment to self-restraint as a coordination facilitator. One way to ensure this self-restraint is to structure the interests held by the IP owners as a percentage claim on these incoming assets rather than as a fixed amount. In this way, as the incoming amount increases, the relative amount available as a hostage does not increase and the actual amount available as an inducement to cooperate does increase.

#### IV. ON THE RISKS OF LEGAL REFORM

The private ordering approach proposed here avoids several risks associated with the legal reforms that others may offer to avoid or mitigate the problems of anticommons. Some of these are private, borne directly by the potential participants, while others are social, borne by society in general. Although a full evaluation of the merits of the proposal requires an analysis of both the costs and benefits of both options, the following discussion is offered just to introduce some of the costs the proposal is designed to avoid.

A chief private risk associated with legal reform is that it takes time to be implemented. In contrast, the private ordering approach outlined here can be pursued immediately.

The social risks associated with the reform proposals are several. First, because the anticommons effect is so ill defined, there is a serious line-drawing problem raised by any effort to target the problem with legal reform. For some, the problem is seen as triggered by too many upstream IP rights. But the nature of every upstream right is that it is associated with a corresponding downstream potential infringer. As a result, any potential infringer will always be able to make an anticommons argument. Second, the total subjective nature of this effect makes it ripe for agency capture if administered by the government. The result is likely to be a public choice story that in the name of decreasing transaction costs and monopoly effects actually leads to the opposite result because the political market it will generate is likely to have higher transaction costs and be more likely captured by big business through public choice effects.

#### V. SOME IMPLICATIONS FOR IP THEORY

The approach offered here raises several implications for IP theory. Most obviously, its focus on coordination is tied closely to prior work by the present authors on the coordination/commercialization theory of IP. The approach

provides yet another example of the way this theory helps those wanting to use the subject matter covered by IP at least as much as it helps the owners of IP. Put differently, the threatened mass infringement approach offered here is a concrete, if not extreme, example of the way the coordination/commercialization theory of IP is not properly seen as being pro-IP owners.

Indeed, as discussed in the “basics matters” work by the present authors, the approach offered here highlights the importance of allowing flexible private ordering against the backdrop of default rules rather than immutable rules. The most direct implication of this approach is that it provides a concrete example of the importance of avoiding criminal liability for IP infringement.

Lastly, the approach offered here raises serious implications about how the law of indirect infringement evolves. The recent Supreme Court decision in *Grokster*, which made clear that both forms of indirect infringement – inducement and contributory – are viable causes of action for copyright as well as for patents, only highlights the need for more analysis in this area. This need is only bolstered by recent controversial cases attempting to extend indirect liability to those financing and managing – such as banks and venture funds – parties that end up being direct infringers. Similarly, within the context of the present proposed entity, for example, the founders of the entity in their personal capacities might be targets for a claim of indirect infringement.

Prior work by the present authors on the basics matters approach highlighted that these causes of action for indirect infringement are designed to step in where the indirect infringer is causing the same economic effect as direct infringement. Mark Lemley has recently argued that indirect infringement should be designed for cases where: “the actual infringer either is not the truly responsible party or is impractical to sue.” The approach offered here suggests that focus should be only on the second of these two classes. Rather than endeavor to judge the relative responsibility of the potential infringers (direct and indirect), the approach that is more compatible with *ex ante* predictability and private ordering focuses only on those acts that at the time conducted are likely to cause the same economic effect as direct infringement, which is to say frustrating coordination. Although this is not identical to Lemley’s “impractical to sue” point when that determination is measured in the *ex post* world, it is designed to capture those efforts for infringement that *ex ante* are designed to work because they would leave only direct infringers who are impractical to sue. In the case of the private ordering solution to the anticommons, the proposed entity is instead facilitating coordination and therefore should be considered a good thing, and not appropriate for a judgment of indirect infringement.

## VI. CONCLUSION

Recognizing that the utility of any approach depends on the circumstances of a given situation, and that in different situations different circumstances may suggest different approaches, the approach offered here is generally in keeping with the literature that sees the role of lawyers as transaction cost engineers. Following that approach, this essay explores some preliminary thoughts on a private ordering solution to the anticommons problem by focusing on both coordination and self-restraint in relation to property rights and commercial transactions. Although the approach offered here may in net effect – private or social – be as good as or even better than various policy reform proposals, it is offered here both for evaluation and for its at least theoretical connections to the coordination/commercialization view of IP. More specifically, the proposed model shows some important ways in which the theory is not accurately viewed as being “pro-IP-owner.” The proposal also provides some explanatory benefit for aspects of the legal doctrine that are puzzling under other theories of IP.

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