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Business Risk and Open Source Licensing: Why the market & normative principles continue to lead the law

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I. Introduction

The words "open source" are now a permanent fixture in the American consciousness. An idea that started in the "geeky fringes" of an emerging technology culture now has significant impact on both Wall Street and Main Street. A significant amount of legal commentary exists regarding the issues surrounding open source software, its licensing model, and its relationship to proprietary software and the intellectual property regime that supports them. There is no denying the market impact that open source software, in all its incarnations, has had over the twenty plus years of its existence, and the reasons that make it ripe for legal review. This article will address these legal issues as background information but focuses on whether the proposed remedies are essentially "solutions in search of a problem."

There is an absolute dearth of litigation regarding open source software. This fact alone is significant since the concept (now a global movement) is over twenty years old. Given that Americans are renown for their litigiousness, the almost complete absence of controversy is deafening. This article explores the subtle reasons for the silence and posits changes in the marketplace that are driving it. One ongoing, high profile case has not had the chilling effect on the model, or the community that supports it, that the media frenzy surrounding it anticipated. This case had the potential of stopping the open source movement dead in its tracks, and in hindsight, despite the fact that the case is yet to conclude, the impediment it created is akin to a runner "pausing" for water during the Boston Marathon, slowing down but never stopping.

In short, this article analyzes how the market and normative principles deal with the legal risks associated with open source and reviews the legal liability of various stakeholders that leverage it. It argues that any proposed positive law must complement the existing market/normative regime, and that in fact, none may be required.

II.   Background

The history of the open source movement is colorful and many commentators have done an excellent job of summarizing it.[1] The coverage here is enough to provide some necessary context, but does not do it justice. Similarly, open source licensing issues have been widely explored[2] and it will suffice to review some of the analysis in order to examine the potential legal minefields, none of which have materialized to date, but which are nonetheless within the realm of the possible. In addition, there has been a continuous and controversial dialog related to the pros and cons of providing clarity and resolving uncertainty via proposed positive law,[3] the merits of which will be discussed in order to consider whether open source is in need of a statutory remedy. Finally, *SCO Group v. IBM*[4] will be examined as the leading case that illustrates the inherent risks of open source.[5] How powerful interests within the open source community have responded to this matter is indicative of the market/normative regime at work.

A.   Brief Introduction to the Open Source Movement

Open source represents many things: a method of developing software, a way of doing business, a social movement, and a philosophical approach to the market.[6] Yochai Benkler, in *Wealth of Networks*, a tome as ambitious as Adam Smith's *Wealth of Nations*, describes the economic underpinnings of the peer production model upon which open source is based as a rival to the Coaseian firm based mode of production—one now capable of competing with the world's most influential enterprises.[7] This article deals specifically with open source as a software development methodology and its corresponding licensing and distribution model, but it is important to note that the conceptual reach and scope of open source and peer production is far greater than its humble beginnings might suggest. The "Common Cold" hypothetical infra illustrates the possibilities.

Linux represents the canonical embodiment of open source software, not only because it is wildly successful but also because its licensing and distribution model constitute bedrock principles

upon which the open source movement is based. Understanding Linux's foundational concepts will establish the necessary groundwork for the remainder of this article. The word "source" in open source refers to one of several key characteristics of Linux distribution. A distinction is usually drawn between "source code" and "object or executable code." Source code represents text that is readable by humans, like the words of this document, whereas object or executable code is binary code (i.e. 1's and 0's) that is readable by machines.[8] Microsoft generally distributes its software as executable code. The users of its software can execute it but they cannot look under the hood to determine how it works. In industry parlance this method of distribution is called proprietary. Linux on the other hand, through its licensing scheme, must be distributed with source code included, giving its users the right to look under the hood and to enhance it, correct defects contained within it, and otherwise customize the code however they choose.[9] This method of distribution is referred to as "open." Both models use a mass-market licensing agreement to give users certain rights and to limit others,[10] albeit to achieve fundamentally different objectives.

Open source software is often referred to as FOSS—which stands for "free open source software." The word "free" has generated significant confusion and is intended to be analogous to "free speech" as opposed to "free beer."[11] In other words "free" is not used in reference to a price point but rather as an embodiment of a principle of liberty contained within the method of distribution.[12] Open source software is not public domain software wherein a user is completely "free" to do as he chooses with it—quite the opposite is true; an author of open source software retains intellectual property (IP) rights in the software and these IP rights are the cornerstone of the licensing agreement that controls its distribution.[13] This is true despite the fact that the agreement explicitly allows for modifications to source code. Not all open source licenses are created the same; there are at least several distinct forks in this road.[14] Because the purpose of this article is not to compare open source licensing schemes, the term FOSS, for the sake of simplicity, will be used to

represent only the General Public License (GPL) as used within the Linux distribution model (more infra).

Finally, another key distinction between FOSS and proprietary software is their respective modes of production. FOSS' production methodology is community-based, whereas that of proprietary software is firm-based (i.e. Coasesian).[15] Linux is developed via a multitude of contributors, both individuals and corporations, whereas a single firm develops Microsoft Office. The economic consequences of these apparently geometrically opposite modes of production have broad implications[16] and serve as an important backdrop for this analysis.

Like any social movement, FOSS has its requisite number of legends and iconic personalities. Richard Stallman, an MIT computer programmer, is widely recognized as the founding father of FOSS.[17] As the story goes, Stallman (circa 1984) became frustrated with the constraints that software licenses placed on his ability to innovate and collaborate with other programmers.[18] Together with law professor Eben Moglen, Stallman created the initial version of the GPL.[19] From its inception the GPL was created with the intention that it be grounded in existing legal authority. There was an apparent awareness on the part of Stallman and Moglen that in order for the license to work the legal community would have to agree (at least at some level of abstraction) that it was based on a solid doctrinal foundation. Subsequent actors, and now the FOSS industry as a whole, have continued to rely on this authority as central to their modus operandi.

In 1991 Linus Torvalds created an operating system "kernel" and in keeping with the spirit of the academic community that inspired it, decided to share his creation with the world at large, but with one important caveat—he decided to share it using Stallman's GPL.[20] While Stallman is known as the founding father, it is the architect Linus, and his baby Linux, that have become the poster children of FOSS. It is clear from subsequent history that Linus' decision to use the GPL was of great legal import. But for this decision FOSS, and the industries that thrive on it, would likely look

radically different today. Finally, this story would not be complete without mention of Eric Raymond, the de facto poet laureate of FOSS[21] whose inspirational essay "The Cathedral and Bazaar" gave voice to the movement and illustrated to the faithful how the model could be used to produce high quality software.[22] Raymond's ideas are explored further infra as they relate to the concept of "open source law."

The rest is history. The baby Linux is all grown up. Some of the most dominant players in the software industry now see it as a strategic revenue generation opportunity.[23] Governments worldwide are jumping on the bandwagon and Microsoft apparently sees its operating system monopoly in jeopardy, given its forceful response.[24] FOSS is clearly a market force to be reckoned with. The remainder of this article will explore the central legal issues surrounding it; why these issues have failed to derail it, and moreover why they have not even provided much of a speed bump along the way, with the exception of one significant scare.

B.   The Licensing Controversy

In a relatively short period of time the software industry became an important and growing part of the national economy.[25] A tremendous amount of ink was spilled in law reviews and elsewhere addressing the myriad of issues that surround software transactions including: acceptability of contract formation, the relationship between federal IP law and private contracts, and the appropriateness of terms, remedies, etc.[26] Despite clearly identifiable legal issues, these transactions and the industry that they underpin, proceeded, for the most part, unimpeded and unconstrained. This section reviews the open source licensing model as characterized by the GPL. The GPL, together with mass-market licenses in general, embodies most, if not all of these issues. Although the thrust of the argument here is that no new law is required to fix that which is not broken, it is nonetheless important to consider why the open source licensing model presents legal dilemmas that are not easily reconciled with existing authority. It is this departure from current

authority that most commentators find legitimately troubling. Before looking at specific issues, this article argues that there are a number of historical analogs that provide useful insight as to why the departure from what appears to be settled law need not be so troubling, and in fact represents a well documented tradition of American jurisprudence's response to economic innovation and other social issues.

It seems that American jurisprudence has always been pragmatic and malleable. For example, there is some evidence that the doctrine of consideration and bargained for exchange extends as far back as early colonial times, and was not borrowed from the English common law, but rather imported from the practices and customs of the law merchant, not yet fully incorporated into the English tradition.[27] Although some argue that the doctrine of consideration and bargained for exchange was invented from whole cloth by Holmes and the "East Coast Magicians" (circa 1870's)[28], purportedly to meet the economic needs of emerging American industrialization, others argue that this "invention" was nothing more than clarification of "events on the ground" that existed for over two hundred years.[29] Under this view it was clearly businessmen, or more abstractly, the business of the nation, which provided the innovation—the wisdom of which was later recognized and ratified by common law. If the "bargained for" theory was prevalent during this time then Holmes, ever the "perceptive student of unfolding tapestries," was certain to have recognized it[30] as the following quote from him suggests:

> No one will ever have a truly philosophic mastery over the law who does not habitually consider the forces outside of it which have made it what it is. More than that, he must remember that as it embodies the story of a nation's development through many centuries, the law finds its philosophy not in self-consistency, which it must always fail in so long as it continues to grow, but in history and the nature of human needs.[31]

It is clear from the quote above and from Holmes' other renowned writings, that his was a pragmatic view of the law.[32] The law was not something to be derived from a set of axioms via the

power of deductive reasoning, but rather the law was ultimately whatever a court said it was.[33] Although not without controversy and perhaps even more often misunderstood, Holmes' pragmatism comports with his belief that the marketplace should be relied upon for the production of ideas and policy—those suitable for the times.[34] Taken in this light, his pragmatic view might be nothing more than the express recognition that the role of the courts is often one of clarifying and ratifying the emergent wisdom of the American street (i.e. at the intersection of Wall and Main) and that other more elitist views of the law simply fail to comprehend its real power. In short, the recognition that the true genius of American jurisprudence lies in its ability to set correct in law, via one or a line of quality decisions, that which otherwise could not be set right or reconciled via intellectual analysis and debate.

Of course if all there was of this pragmatic theory was anecdotal evidence from Holmes, it would still be of interest but perhaps not compelling. The question is, where else has the Court shown these pragmatic tendencies? Witness the retreat from a laissez faire contract doctrine post New Deal, where the Court upheld an Oregon woman's right to a minimum wage and not apparently on politically ideological grounds.[35] Also, take the case of a fairly recent technological advance, the airplane. At the time the Wright brothers invented it, American law held that a property owner owned all the space above his land, presumably to the heavens.[36] Then came larger airplanes and the military started killing the chickens of a couple of North Carolina farmers who sued the government for trespass.[37] The case reached the U.S. Supreme Court and in one short paragraph, hundreds if not thousands of years of settled property law were blown away.[38] Justice Douglas wrote the following for the Court:

> [The] doctrine has no place in the modern world. The air is a public highway, as Congress has declared. Were that not true, every transcontinental flight would subject the operator to countless trespass suits. Common sense revolts at the idea. To recognize such private claims to the airspace would clog these

highways, seriously interfere with their control and development in the public interest, and transfer into private ownership that to which only the public has a just claim.[39]

What about the view of *Brown v. Board* as inherently pragmatic,[40] wherein the post World War II American industrial state could no longer hold as tenable the South's "Jim Crow" laws when violence threatened to disrupt the existing economic order? Or, the view that *Roe v. Wade* was perhaps less about a woman's right to choose than the recognition that women were already choosing, and the poor among them needed some protection.[41] Finally, what is to be made of the landmark environmental law case of *Tennessee Valley Authority v. Hill*[42]— that the driving force behind it was to save a three-inch fish from extinction (one that most Americans had never heard of)? Or recognition on the part of the Court that economic might, without more, was an insufficient legacy for future generations? Thereby given credence to the American Indian proverb, "We do not inherit the Earth from our ancestors, we borrow it from our children."[43]

If pragmatism is not the driving force behind American jurisprudence at least, at a minimum, it is fair to describe it as extremely influential. Time and again the Court has shown a willingness to recognize and react to "events on the ground"—finding the requisite legal authority necessary to help resolve the pressing issues of the day, including the resolution of the 2000 Presidential election. So although this article will argue that generally the open source licensing model is functioning in a legally sound manner, if it requires a course correction then the common law, via the Court, will provide the necessary cover. In fact, there are important economic interests that have already placed a significant bet on this very proposition (more infra).

In order to put the horse back in front of the cart, it is important to consider the legal issues that caused the ink to flow where litigants have refused to follow.

1.   GPL Basics

There are a number of key fundamental principles embodied in the GPL license[44] that require basic understanding before issues to which they give rise can be discussed. Robert W. Gomulkiewicz has done an excellent job of enumerating these—his work is significantly paraphrased here for the sake of brevity.[45] These principles are as follows: 1) the license requires unencumbered distribution, no subsequent author can be restricted from either selling or giving away the software; 2) the source code must be licensed; 3) the licensee is granted the right to create a derivative work; 4) author attribution is required, usually via a copyright notice on modifications; 5) the software is provided "as is"—no warranties are provided either with respect to quality or non-infringement protection from third parties; 6) the license is self-perpetuating—the rights attached must apply to all downstream licensees; 7) the license cannot discriminate against an individual, group, or field of endeavor; 8) no restrictions are allowed in co-distributed software (e.g. cannot dictate that all co-distributed software be GPL based).[46]

2.   License or Contract?

The first issue of serious contention is whether all of the above can be achieved in a "bare license," or is the GPL a contractual agreement/license that requires mutual assent? Moglen, the attorney who originally drafted the GPL, insists that it is only a copyright license, wherein the licensee only has a "right" to act, under federal copyright law, in a manner consistent with its terms[47]—that is, the terms essentially comprise the licensee's corresponding "duty."[48] Because no court has directly addressed the GPL (more infra) it is fair to say that Moglen's view is far from settled law. Assuming, arguendo, that his view is correct, then it certainly renders moot the mutual assent issues best illustrated in a related context by the holding in *ProCD, Inc. v. Zeidenberg*[49] If copyright law, without more, does indeed extend this far then it would appear that Moglen's contention that no controversies exist "because nobody thinks they're going to win them"[50] must be

given significant weight. Indeed, if this view is correct then snarly consideration issues also disappear and the GPL, it would seem, is essentially "bullet proof." However, other commentators are not so easily convinced that contractual issues are not on point and go as far as to indicate that most lawyers view software licenses as contracts[51]—putting in play all the issues that Moglen magically disappears. For example, take the fact that most licenses are revocable at will by the licensor and are non-conditional,[52] a plausible argument can be made that the GPL is, on its face, contra these "license only" requirements.

Finally, the critical question remains: Why does the open source movement use a licensing regime at all? The simple answer is that software developers want to control the downstream use of their work.[53] It is this control that requires legal authority and distinguishes the GPL from a purely normative approach. Sans the legal authority in the GPL, FOSS would arguably still be an important social movement, but one perhaps lacking the capacity to transform an entire industry; the legal authority of the GPL matters.

3.   Whence Copyright Law?

Does copyright law indeed extend as far as Moglen suggests? FOSS proponents rely on copyright ownership and a mass-market licensing model to give effect to the level of control they require.[54] This scheme is euphemistically called "copyleft"[55] because it embraces existing copyright/licensing law, which many in the open source movement find offensive, to achieve an objective that is (to them) more socially (and economically) appealing. The FOSS faithful tend to state this proposition more bluntly as: "you need copyright before you can have copyleft."[56]

But the question "Is the FOSS scaffolding good law?" remains unanswered. Here it is important to remember that the proprietary mass-market software licensing model (e.g. Microsoft) uses an analogous framework and therefore the legal importance of this question is critical to the

entire software industry[57] and perhaps to other industries as well (e.g. Hollywood) via the Digital Millennium Copyright Act (DMCA).[58]

A copyright license is a grant of permission, by the licensor to the licensee, to use or exploit a unique property interest that the licensor otherwise owns as an exclusive right.[59] In general, no assent is required on the part of the licensee and no infringement occurs unless the licensee steps outside the bounds of the license.[60] A problem arises because the property interest to be protected via copyright is in the "work of authorship" and not literally in the thing itself (e.g. the software as it might exist in any medium).[61] The use of copyright law to impose conditions on the downstream distribution of the "thing" may be outside the scope of existing doctrine.[62]

In short, similar to the license versus contract debate, it appears that there are legitimate, if not compelling, arguments that can be made as to whether copyright law is capable of all the required heavy lifting. A picture begins to emerge that the copyright/licensing regime that Moglen considers unchallengeable may not be on as solid a legal footing as first appears, built as it were on top of shifting sand.

4.   The GPL as Governance

Mention the word governance in conjunction with any topic remotely related to the Internet and intellectual property rights and the aspiring digerati are likely to weigh in with passionate and well-reasoned arguments related to any one of a dozen or so cyber tangents du jour. The word governance as used within this article has a precise meaning that is distinct from Lawrence Lessig's usage in "Code v2.0 and Other Laws of Cyberspace"—wherein the learned professor uses governance as a type of regulation that can be implemented via the actual executable software code that runs the Internet—a play on the dual legal and software meanings of the word code.[63] Here the

term is used synonymous with the concept of "private ordering" or the private law embodied in contract doctrine, the law as between the parties.[64]

The word governance encompasses private ordering but some commentators suggest that the scope is much broader given the size of the population "controlled" by mass-market software licenses, of which the GPL, as mentioned previously, is a subset.[65] In short, these licenses are not only bilateral agreements between the parties, but to the extent that similar terms apply, and to the degree that the masses cannot access "unlicensed" copies of the software, the "licensing norm displaces the Copyright Act as the relevant law."[66] Consequently, use of the word governance implies contractual relationships via mass-market licensing that essentially define the law of open source software—a kind of private ordering run amok, depending on your point of view.

At first blush the casual reader, uninformed with respect to the "inside baseball" historical nature of the controversy and its key players, might be tempted to respond with a rhetorical "so what?" Private ordering via the contract doctrine seems such a well entrenched and settled part of American jurisprudence that it hardly seems worthy of debate. Indeed, at its most primitive, that is essentially the thesis of this article brutally exposed. But given the centrality of the governance issue as exemplified by the vociferous private versus public law debate, it is important to consider further what might be at stake given the status quo, that is, what do the opponents of the current licensing regime find so offensive that requires new positive law to set right? Or, were the proponents of new positive law simply attempting to solidify and validate the legal land grab that had already occurred in the marketplace? Under this view, were opponents simply making a "not so fast" populist argument and not necessarily anti the existing "as is" state of software licensing? In other words, depending on how the question is framed will determine what is implicated: politics, policy, or law. Clearly the arguments usually proceed within a framework of policy and law but adding to the complexity are the potential political implications of redistributed economic power depending on

what is or is not codified—a de facto ratification of winners and losers. It is no easy task to sort out who has staked out exactly what position let alone infer possible motives. This fact, together with the cornucopia of substantive legal doctrines involved, makes the analytics challenging for lawyers and perhaps incomprehensible to most in the business community. Given the dearth of litigation, software consumers have apparently remained happily oblivious.

It should be noted that much of the initial debate centered on the proposed Uniform Commercial Code (UCC) Article 2B, circa 1998 (see UCITA infra). Significant marketplace interventions now beg characterization of some arguments as not necessarily moot, but certainly presented in a context that is, as measured on the axis of "Internet time," ancient history.[67] Nevertheless, similar arguments were subsequently resurrected, with increasing sophistication, and continue to the present.[68] These arguments indicate that the debate is far from over. These issues will be discussed as part of governance, because the governance rubric better frames the context, but much of their genesis resides in the heated debate surrounding proposed Article 2B, which later became known as UCITA, a topic this article addresses in the next subsection.

It should further be noted that for the purpose of this section the mass-market licensing issues discussed are broader than the GPL, encompassing both open source and proprietary software licenses. Additionally, only a cursory treatment of these issues is provided here, given that this article's main thrust lies elsewhere. However, the quality (and quantity) of the analysis by a distinguished host of commentators is testimony to a kind of open source movement in the law, a topic to which this article subsequently returns.

Also, at this juncture a key point needs to be revisited in order to ensure clarity with respect to the governance discussion. Gone is Moglen's view of the "bare" license as the substantive law that controls the GPL and mass-market licensing in general. This is so, not because any court has held contra, but as previously mentioned, the majority of commentators treat these licenses as contracts.

Specifically, proposed UCC Article 2B was designed as a corollary for information based "goods" to UCC's Article 2, which is codified contract doctrine for the sale of goods in general, but which was drafted at a time when goods meant essentially "moveable" goods of varied sorts found in the American industrial economy (e.g. cars, trucks, soap, textiles, etc.). Article 2B, as initially proposed and as later enacted is positive contract law. In short, any discussion of Article 2B is a contracts discussion. Subsequent commentators on mass-market software licenses, even outside of Article 2B, have, for the most part, continued to assume the substantive law of contracts as a foundational premise.[69]

Finally, although a contracts discussion does indeed re-instate issues of mutual assent and consideration, these have previously been touched upon and only comprise the proverbial "tip of the iceberg." There are even more knotty legal issues that lie at the heart of the debate. Principal among them is the issue regarding to what degree contract doctrine preempts federal copyright law—potentially taking away rights that would otherwise be allowed. Furthermore, to what degree is electronic self-help allowed in the enforcement of software contracts? Are the licensors free to revoke (i.e. disable) at will for an alleged breach? If so, how consistent is this with UCC Article 2 upon which Article 2B was purportedly modeled? Finally, is there any existing authority at all, presumably a combination of contract and copyright doctrines, that provides bullet proof legal cover for software licensing in its current state?

A microcosm of the debate took place within the context of a symposium sponsored by Berkeley Technology Law Journal in the fall of 1998 entitled: "Intellectual Property and Contract Law in the Information Age: The Impact of Article 2B of the Uniform Commercial Code on the Future of Transactions in Information and Electronic Commerce." By way of illustration this article reviews several papers from this symposium, providing contrasting points of view.[70] The first is a paper by Julie Cohen entitled "Copyright and the Jurisprudence of Self-Help."[71] The second is a

paper by David Friedman in response to Julie Cohen's entitled "In Defense of Private Orderings."[72] In the interest of brevity only issues directly related to governance and relevant to this article are addressed. Finally, a brief review of an insightful "post Article 2B wars" article by Michael Madison entitled "Restructuring the Software License" will round out the discussion[73]—raising yet additional, if increasingly more arcane, issues.

In "Copyright and the Jurisprudence of Self-Help" Julie Cohen argues against proposed Article 2B advancing three principal arguments: 1) the digital self-help afforded "information providers" (read software publishers) is inconsistent with UCC Article 2; 2) Federal copyright law is preempted by the private ordering of licensing in a manner that reduces rights that otherwise would flow to the consuming masses; and 3) Consent—essentially arguing that consent is too complex to be valid.[74]

Her first argument is largely based on the implications surrounding digital rights management (DRM) technologies that publishers were developing (circa 1998) in order to electronically enforce licensing contracts, aided and abetted with the support of Article 2B.[75] It is important to note that outside of electronic music distribution (e.g. Apple's iPod) DRM has not had much, if any, impact on the electronic distribution of software, primarily because normative principles threaten market retribution on publishers so inclined. However, it was not clear in 1998 that this was the case. Specifically, she argues that section 2B-310 allows for "electronic regulation of performance" via terms in the licensing agreement and also that 2B-310 provides a list of exceptions where no such notice via terms is required.[76] This is the "self-help" device, according to Cohen, whereby the preemption of copyright law is enabled.[77] She notes that the drafters defend this section as consistent with Article 2's principle "that a contract can be enforced" via nothing more than an oblique comment.[78] But the matter by no means ends with section 2B-310. Cohen goes on to argue that section 2B-715, "which applies in the event of a breach by the licensee justifying cancellation of

the agreement," provides a kind of "self-help repossession" with no analog whatsoever in Article 2, oblique or otherwise, but rather modeled on the self help afforded to lessors under 2A-525.[79] In short, under this prong Cohen is making the argument that in some critical instances it is disingenuous to imply that Article 2B is modeled on Article 2.

Cohen's licensing as preemption of copyright law, paraphrased much more succinctly, argues that copyright law allows certain reuse that is disallowed under the licensing agreements and also allows reuse of any subject matter not protected under copyright such as facts, ideas and functional principles.[80] The latter are treated as "public domain building blocks" freely available to others for use in future works.[81] Furthermore, copyright law allows *all* use once the copyright term expires.[82] In short, the licensing agreements preempt federal copyright law in a manner that does not serve the public interest.

Finally, the third prong of Cohen's argument, its most theoretical and sweeping, has to do with consent.[83] Again, in the interest of brevity, Professor Cohen's extensive analysis is here reduced to the bare minimum. With respect to consent, as it pertains to complex products (e.g. software) embodied in mass-market licensing agreements, Professor Cohen states the following: "the argument that the structure of the typical mass-market transaction enables voluntary, informed exchanges with respect to most terms other than price is sheer fantasy."[84] In other words there is no mutual assent that approximates or closely parallels what UCC Article 2 provides—these are not "bargained for" terms.

Professor Friedman's "In Defense of Private Orderings" provides a spirited response to professor's Cohen's paper in an arguably "in your face" manner illustrative of the passions that many commentators brought to the Article 2B firestorm.[85] Friedman challenges Cohen's arguments in reverse order, however this article will summarize his arguments, for the sake of consistency, in the order provided by professor Cohen.

Friedman argues that the "self-help" argument is not based on failure to provide notification and disclosure of key terms (e.g. regarding digital enforcement) but rather is an argument against the freedom to contract.[86] Why? Because according to Friedman, Cohen's argument implies that "no mass market contract the producer can write will provide sufficient notice to justify such product" and that Cohen's real problem with these agreements has to do with consumers' inability "to affect the options that are on the table."[87] But Friedman points out that this argument can be made with equal force against mass-market contracts in general (e.g. for cars, televisions, etc.).[88] However, although the gist of Friedman's response may be on point, it must be remembered that Cohen was specifically targeting "self help" contractual enforcement via DRM technologies, something clearly not part of mass-market contracts in general.

With respect to copyright preemption, Friedman suggests that private ordering (i.e. mass-market contracts) may in fact serve the policy rationale of copyright law more effectively than copyright law standing alone.[89] The reasons given are two fold: 1) private ordering allows the IP holder to capture more of the value inherent in their IP and therefore will lead to higher returns and the subsequent production of more IP; 2) private ordering (via electronic monitoring) can also result in more use of a producer's IP because, via contract, it can use price discrimination to charge different prices based on different usages. Thus allowing its IP to be more widely used than would generally be the case sans a price discrimination monitoring mechanism (e.g. as in "pure" copyright licensing).[90] The first point appears to provide compelling support for private ordering consistent with copyright policy, but only one aspect of it. Cohen was making a point regarding the reduction of reuse via licensing, a type of reuse current copyright policy allows. The second point does not fit well with mass-market consumer licensing models where there is usually no price discrimination based on usage and therefore appears to be an apples to oranges comparison. The latter does not

appear to be what Cohen had in mind—although within the realm of possibility, given electronic distribution.

Finally with respect to consent, which is conceptually difficult to distinguish from bargaining, Friedman asserts that Cohen gets the argument "exactly backwards."[91] He succinctly states his premise as follows: "In arguing against the efficiency of mass market contracts, Cohen sometimes writes as though bargaining is somehow a good thing—an end in itself."[92] Friedman goes on to state that the entire purpose of mass-market licenses is to provide default terms that avoid bargaining altogether, an economic benefit to all parties.[93] He uses an exceptionally clear, if somewhat simplistic, example to illustrate his point:

> Suppose that, with a particular draft of the sales contract, the value of the product to the buyer, and hence the highest price he will be willing to pay for it, is $100. The seller considers modifying the draft in his favor by adding a term—perhaps an easy right of repossession—that makes him better off by ten dollars and the consumer worse off by fifteen. Since the value of the product is fifteen dollars less under the modified contract, so is the maximum price the consumer will pay. Adding the term gives the seller a ten dollar gain (lower legal costs if the sales terms are violated and the product must be repossessed) and a fifteen dollar loss (reduction in the price he can get from the buyer), for a net loss of five dollars. He is better off with the original draft.[94]

The above example appears to be consistent with a Coasesian analysis indicating that firms are incented to lower transaction costs in order to more effectively compete in the marketplace.[95]

In many ways Cohen and Friedman appear to be talking past each other, choosing to ignore important aspects of each other's arguments in order to further their own, something perhaps better understood by keeping in mind the contentiousness of Article 2B. In addition, as previously noted, many of the fears and legal issues surrounding DRM technologies discussed in the papers never materialized, making their arguments much less relevant today. Michael Madison, five years later and for the most part ignoring Article 2B, synthesizes many of the arguments covered in this section in

"Restructuring the Software License," while focusing specifically (though not exclusively) on the legitimacy of open source licensing and the breath of software licensing in general.[96]

Madison argues that the software license operates at three distinct levels, all of which are important to its legitimacy: 1) at the level of the individual license; 2) at the level of all "users" of a licensed program; and 3) "to the extent that all computer programs are subject to licenses and to the extent that those licenses are effectively identical in relevant respects, the world of software is effectively governed by the very concept of the license."[97] Furthermore he acknowledges that community norms, "exogenous to the license itself," may exert a kind of implicit informal governance.[98]

Central to Madison's argument regarding legitimacy is that the GPL is a subset of the "general purpose conventional software license"[99] (e.g. Microsoft's usage). His cogent explanation of this is as follows:

> The "open" (or shared) source code model . . . contrasts with the conventional "closed" (or hidden) source code model at one level but adopts the same underlying legal framework. In the former, both legally and technologically speaking, the program is meant to be distributed and shared among all of its producers and consumers. In the latter, both legally and technologically speaking, the program is meant to be controlled by the original producer. [100]

He concludes that the GPL is a specialized application of the general case.[101] Indeed, they both operate in similar ways in that "any use of the program that would conflict with the express terms of the license is forbidden, and violation of those terms causes the license to terminate."[102]

Furthermore, because an analogous licensing framework extends to technologies such as DRM and to statutes such as the DMCA, much of what amounts to copyrightable digital distributions is covered.[103] In short, the software license, of which the GPL is a part, covers a sweeping array of digital products and services—making its governance structure a key legal cornerstone of the digital economy. Although Madison is not directly discussing Article 2B (he does

mention UCITA in passing), his view of the license rests on substantive contract doctrine,[104] and in that sense furthers the discussion of Cohen and Friedman.

Madison's analysis and synthesis, however, is broader and deeper than both of these authors. His treatment of why the current copyright regime cannot perform the "heavy lifting" required by the software license is compelling—mostly centered on the subtle differences between "authorship rights" and rights that control the distribution of the "thing" itself.[105] He is also somewhat disdainful regarding whether the contract regime, standing alone, is sufficient to carry the day—reviving the arguments regarding the lack of mutual assent, especially as it relates to the open source licensing model.[106] Finally, Madison makes a coherent argument regarding why normative principles might prevail, albeit still requiring ratification by positive law analogous to UCITA, but subsequently concludes that there is an "absence of evidence that software licensing constitutes a qualifying custom in the first place" having "neither the qualifying durability and breadth of acceptance nor the normative pedigree."[107] In short, after an exhaustive and impressive review of the relevant issues, Madison concludes that no authority supports the existing software licensing regime, and from his perspective, one is surely required.

This section has explored the licensing controversy from multiple points of view. The trilogy of papers reviewed sets the stage for this article's principal argument—despite the myriad of legal issues surrounding the GPL, and software licensing in general, the market and normative principles will continue to lead the law. A topic that this articles returns to in earnest in part III.

C. The Uniform Computer Information Transactions Act (UCITA)

Much of what is of interest regarding UCITA and its intersection with this article's principal thesis has already been covered in the Article 2B discussion. Other commentators have already treated the history and evolution of UCITA in a comprehensive fashion.[108] The work that remains is some commentary regarding the UCITA development process and its implications with respect to

the topic at hand. The UCC in general, and UCITA as a special case, is a backward looking attempt to codify common law in order to achieve uniformity across state law, with the underlying assumption that uniformity is a good thing—a consensus view for the most part, although not without its detractors.[109] However, as has already been noted, and will be elaborated on later, there is very little FOSS common law and hence nothing much to look back on. Given that, positive contract doctrine seems premature to say the least. To quote professor Robert Scott only slightly out of context in reference to the revised Article 2 process (and here his comment is even more germane looking prospectively): "it's naive to believe that a non-governmental, non-elected, elitist body of insiders can ever get those kind of rules right, whatever we mean by 'right'."[110] This is not to say that the work of the American Law Institute (ALI) and the National Council of Commissioners on Uniform State Laws (NCCUSL) is irrelevant, but perhaps less relevant with respect to their work as "private legislatures" and more relevant with respect to a body of work that seeks to influence rather than draft, such as that embodied by the ALI's current effort in the "Principles of the Law of Software Contracts"[111]—a topic this article revisits infra.

D.   The Impact of SCO Group v. IBM

SCO v. IBM has more intrigue than a Grisham novel. A popular website has provided 24/7 coverage since the complaint was first filed.[112] In March 2003 SCO sued IBM alleging that IBM used its "trade secrets" in Linux.[113] SCO later amended the complaint to claim that it was copyrightable code that was inappropriately included—not trade secrets.[114] SCO sought five billion dollars in damages.[115] Needless to say the software industry took notice, quickly realizing the implications of an adverse decision on IBM, its customers, and the FOSS movement in general. This controversy had the potential to be the mother of all momentum killers.

IBM counter sued under various theories including allegations that SCO was in violation of IBM patents and copyrights and, more importantly, that SCO itself had been a Linux distributor and

therefore barred under the GPL from asserting any further proprietary rights in their code[116]—essentially having shot themselves in the head so to speak. SCO denied "the applicability or enforceability of the GPL" and therefore it was thought that the courts would have to rule on its validity.[117] As it has turned out, for reasons far too convoluted to address within the scope of this article, the validity of the GPL has not remained central to the case. That said, the case is far from over and the GPL may yet be tested. Other commentators have provided much more extensive treatment of the case and its implications.[118]

Critical to this article is the fact that, despite the potential disaster, new users have continued to switch to Linux.[119] The magnitude of any "chilling effect" on Linux adoption over the four years since the complaint was filed is difficult to discern. That does not imply that the anticipated risks have lessened, far from it. The critical question is not whether risks exist, but rather the degree to which they have been managed. To the extent the issues in this case remain relevant to this article they will be addressed next.

III.   Analysis of Market Forces, Normative Principles and Risk Management

The remainder of this article focuses on the manner in which market forces and normative principles address the business/legal risks associated with the open source licensing regime. It reviews strategies by which risks have been managed and explores the practical consequences of these going forward. It assumes Holmes' "bad man" view of the law in that it attempts to answer the question: "What is a court of law likely to do to me 'in fact' if I choose to use or develop open source software that is controlled by the GPL?" It first explores this question by looking at what courts have already done, which is very little, but this in and of itself is indicative of something significant given the litigious nature of American society. It then explores how market forces and normative principles have imposed a FOSS governance structure that some argue is exogenous to the law,[120] but one that by all accounts has been profitable, financially and otherwise, for its

stakeholders. This analysis begs the question regarding whether the law defines the social contract or simply provides the requisite infrastructure to support it? This article argues that the role of American jurisprudence is the latter, and that it has always been so, especially with respect to commerce.

A.   The Missing Case Law and the Major Risks

The GPL case law is sparse. No American court has ruled directly on its enforceability. Apparently a German court has upheld the GPL's validity but in a somewhat confusing decision—linking the European concept of moral rights to its rationale.[121] The available case law is briefly reviewed as a means of highlighting potential risks. Subsequently, four major categories of risks are discussed in more depth—later this section illustrates how the market and/or normative principles have responded. Finally, a hypothetical is posed as a means of analogizing what a court might be faced with when ruling directly on the GPL.

1.   The Case Law

Where are the litigants and where is the controversy? This is much more than just a rhetorical question; it speaks volumes regarding whether or not positive law is required to correct a potentially non-existent problem. Why should public resources be spent to correct what some might construe as "mere technicalities?" Especially since, as this article suggests, the risks are already being effectively managed and contained. What follows is a cursory review of a relatively insignificant numbers of cases that have been litigated in the twenty plus years of the GPL's existence.

Plaintiff Daniel Wallace sued the Free Software Foundation (authors of GPL aka FSF) claiming that: "the General Public License (GPL) constituted a contract, combination or conspiracy; that it created an unreasonable restraint of trade; and that the FSF conspired with IBM, Red Hat Inc., Novell and other individuals to pool and cross-license their copyrighted intellectual property in a predatory price fixing scheme."[122] On Monday March 20, 2006 the judge dismissed the Sherman

Act antitrust claims against the FSF, stating: "[The GPL] acts as a means by which certain software may be copied, modified and redistributed without violating the software's copyright protection. As such, the GPL encourages, rather than discourages, free competition and the distribution of computer operating systems, the benefits of which directly pass to consumers. These benefits include lower prices, better access and more innovation."[123] An FSF spokesperson reiterated its claim that the GPL is nothing more than a license, pure and simple.[124] Although dismissal of antitrust claims is not tantamount to holding the GPL valid, it certainly appears to be a step in that direction.

In *Drew Technologies (Drew) v. Society of Automotive Engineers, Inc. (SAE)*, Drew wrote and released software under the GPL that SAE, an automotive standards body, asserted copyright ownership in, citing the "industry standard embedded in the software."[125] The case settled with SAE dropping its claim—prompting one commentator to indicate that the court must have implicitly considered the validity of the GPL, since it was not immediately struck down.[126]

In *Computer Associates International v. Quest Software, Inc.*, Computer Associates (CA) sued Quest for copyright infringement of its software.[127] Quest responded that CA used open source software (Bison) under the GPL to generate the software used by Quest.[128] The court held that a "special exception in the GPL for Bison provided that software generated by Bison was not subject to the GPL."[129] Apparently the validity of the GPL was not an issue in the case, although arguably there was an implicit endorsement.

This list of cases may not be exhaustive but it is relatively current.[130] By far, *SCO v. IBM* is the most celebrated GPL case, despite the fact that it has yet to conclude. The reasons for this are obvious; it will either set groundbreaking precedent or be perceived a setback for the FOSS community, even if the GPL is not directly implicated. It also best embodies the following risks that are inherent in the GPL.

2.   The Viral License

Copyleft, it seems, is a term that is used when the social benefits of the GPL are being touted, while "viral" is a term that is often used pejoratively, or when attempting to point out the risks associated with it. Here the term viral is used since this discussion focuses on risk. What is infected is not a computer but the code controlled by the license terms.[131] The damage can be to the licensor or the licensee. The code itself may continue to serve the public interest by behaving programmatically as intended, with no malicious side effects. Of course, it is quite possible to modify Linux in a manner that would produce, or more readily enable the production of, the kind of harm normally associated with viruses (e.g. destruction of data) but that is not what is meant by a viral license.

How this works in practice can best be illustrated by way of example. *SCO v. IBM* exemplifies the potential harm to both licensor and licensee. Consider first SCO's allegation that IBM included its copyrighted code in Linux. Assume that the allegation is true and that SCO's copyright license prohibits this behavior. IBM as a distributor (i.e. licensor) of Linux is now in violation of federal copyright law. In addition, because of the GPL's "viral" provision, any downstream distributors of IBM's Linux are also in violation. IBM has "infected" downstream distributors by wrongfully including copyrightable code. The infection is self-perpetuating. Even more insidious—not only are downstream distributors in violation (i.e. those that modify the IBM distribution and redistribute it) but also downstream users. In short, IBM's Linux customers are also potentially in violation, presumably some large companies and/or governments. Indeed, SCO mailed out over 1,500 copyright infringement notices to Linux users and offered to license them the wrongfully included code, or face litigation.[132] The end users in this scenario are likely "pure licensees" with no intent to modify and redistribute.

But there are still other variations on the theme. IBM alleged that SCO, itself a Linux distributor, had abdicated any proprietary rights to the code that it distributed under the GPL, in essence placing the code in the public domain, except as constrained by the license.[133] IBM argued that if the code it purportedly violated had itself been distributed under the GPL, then it was free to use, modify, and redistribute it. In other words, SCO was not entitled to a kind of open source "mulligan or do over." Here there is no downstream risk of copyright infringement but SCO has "given away" code that it had not intended to.

Once the operational characteristics of copyleft are understood it is quite easy to imagine the literally multitude of permutations wherein the license could induce legal risk. How does a large company with thousands of employees that work on both proprietary and open source code keep the former from infecting the latter? How does a large company that uses Linux know whether or not it is infected? Obviously, these risks accrue to companies both large and small. It is only the scope of the problem that increases with size.

These are not trivial matters. Although this article argues that the market and normative principles are providing adequate governance, it is prudent for both licensors and licensees to play this game with eyes wide open. There are other GPL related risks discussed infra but by far the viral nature of the license is the proverbial "elephant in the room," one that *SCO v. IBM* made visible.

3.   No Warranties

Under the GPL there are no warranties express or implied.[134] Any program controlled by the license is provided "as is."[135] In addition, the license states specifically that any licensee must "conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty."[136] In other words the lack of warranty is viral as well unless otherwise provided. However, the license does provide an out by indicating, "you may at your option offer warranty

protection in exchange for a fee."[137] Historically, most (if not all) mass marketed consumer software is licensed "as is," with both small and large publishers unwilling to assume the risks inherent in guaranteeing quality.[138] FOSS is no different in this respect.

In practice the lack of warranties has not proved problematic. Quality issues are managed via the market and normative principles as discussed below.

4.   No Representation of Non Infringement

The GPL specifically disclaims any liability for damages of any kind "INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES" sustained by the licensee or any third party.[139] Under the GPL the licensor is not "on the hook" if any third party's copyright or patent rights are violated. Presumably this is what provided cover for SCO to go after end users, since, without more, they are not protected. In addition, with respect to patents, the preamble states that in order to keep the code from becoming proprietary "any patent must be licensed for everyone's free use or not licensed at all."[140]

In any case the message is clear, especially for end users: if you decide to use a program licensed under the GPL then you are legally on your own.

5.   Internationalization

FOSS is a global movement and various international interests, both public and private sectors, are paying close attention.[141] For a number of policy reasons, governments worldwide (excluding the U.S.) are adopting strategies that encourage FOSS development.[142] Support ranges from providing tax credits for FOSS development to a bill favoring its use in the public sector.[143] Brazil and Germany both have public sector initiatives to migrate from proprietary software to FOSS.[144] The FSF is considering ways to make the GPL more international copyright friendly, including providing non-English translations.[145] The viral nature of the license and other related risks are magnified by the additional risks of being sued, or bringing suit, in a foreign jurisdiction. Of

course, the globalization of Linux and the GPL is nothing new. After all, it was a Finnish university student, Linus Torvalds, who first developed the "kernel" back in 1991.[146] Linux was born and remains a global phenomenon.

The governance provided by the GPL is global in scope. Add to a judge's list of considerations the specter of potentially upsetting international relations, and you begin to appreciate the magnitude of any future holding that implicates it. The following hypothetical attempts to provide insights into such a decision.

6. The "Common Cold" Hypothetical

Assume that J.P. MegaEntrepreneur (JPM) is an Irish businessman and owner of eighty percent of the phenomenally successful private pharmaceutical company, Healthy Planet, Inc. (HPI). HPI has made billions on the development and distribution of patented, but competitively priced, drugs. In 2005 HPI received U.S. FDA approval to distribute its patented and widely acclaimed "CC Blaster"—unmatched in its ability to effectively reduce common cold symptoms. However, there was one significant problem, the CC Blaster manufacturing process was prohibitively expensive, and therefore the drug was not affordable by the world's consuming masses—especially in "third world" countries. HPI had been an early adopter of Linux and other FOSS products. The lower FOSS "total cost of ownership" contributed significantly toward making HPI products competitive. JPM, now approaching retirement, wanted to give something back to the community. He decided to "open source" the patented CC Blaster process. He developed a license modeled on the GPL and called it the Healthy Planet Public License (HPPL). Essentially the license granted rights to freely manufacture and distribute CC Blaster for profit, as long as any improvements to the process were also "open sourced." In other words, the license was viral in the spirit of the GPL. The hope was that by opening sourcing the process, the "best and brightest" scientists worldwide would discover and implement methods for cost effective development. JPM's experiment was wildly successful. CC

Blaster is now (circa 2007) as affordable as aspirin and a number of distributors are in the CC Blaster distribution business, including HPI. Both individuals and governments contributed to this outcome. JPM won a Nobel Prize for his efforts. Now, however, there is a fear that an adverse ruling in *SCO v. IBM* could negatively impact the HPPL, and in fact HPI has recently been sued. What result?

Obviously this hypothetical has purposely "stacked the deck" but not in a manner so far fetched as to make it completely irrelevant—some commentators suggest that a future "peer production" model may in fact work, more or less, as described infra.[147] There are obviously "moral and equitable" considerations in play and it is difficult to see how a court would hold against the HPPL, simply because existing authority failed to cover all the legal bases required by the license. Moreover, this article has posited that fashioning law for a new reality is the essential genius of American jurisprudence—as John Dewey argued: "law is through and through a social phenomenon: social in origin, in purpose or end, and in application."[148] Borrowing yet more from Dewey and paraphrasing for the sake of brevity: it is relatively straightforward to fashion new rules from existing law through deductive logic and quite another thing to build general principles from a "complicated and confused case, apparently admitting of alternative modes of treatment and solution."[149]

The term "pragmatic" is often used pejoratively to disparage American legal thought as being "anti-theoretical or anti-intellectual," somehow too focused on "outcomes rather than first principles."[150] But as Dewey suggests, which is more challenging, deduction from existing rules or deriving general principles from the chaos of a new reality? Things are not what they seem; there is an interesting dynamic at work just below the surface. Likewise, American business, on the whole, is often accused of being too focused on outcomes, and this criticism is not without merit. However, American business also created the "highest standard of living that the world has ever known." This

article now turns to how American business dealt with the legal risks inherent in the GPL, and continued a tradition of pragmatism.

B.   The Market and Normative Responses to Risk

Markets are comprised of three principal components: transactions, conversations, and relationships.[151] Typically it is transactions that come to mind when economists (and others) think of markets; the aggregate of which determine the price of a given item via the operation of supply and demand curves. Conversations and relationships are principally concepts that marketers use in analyzing markets, usually outside of traditional economic analysis.[152] The "cluetrain manifesto"[153] was widely acclaimed (circa 2000) for advancing the concept of "markets as conversations," while at the same time implying that such had always been the case, at least prior to the industrial revolution and mass marketed products:

> A few thousand years ago there was a marketplace. Never mind where. Traders returned from far seas with spices, silks, and precious, magical stones. Caravans arrived across burning deserts bringing dates and figs, snakes, parrots, monkeys, strange music, stranger tales. The marketplace was the heart of the city, the kernel, the hub, the omphalos. Like past and future, it stood at the crossroads. People woke early and went there for coffee and vegetables, eggs and wine, for pots and carpets, rings and necklaces, for toys and sweets, for love, for rope, for soap, for wagons and carts, for bleating goats and evil-tempered camels. They went there to look and listen and to marvel, to buy and be amused. But mostly they went to meet each other. And to talk.[154]

Indeed, relationships, as well as conversations, are critically important to markets in China, Africa[155] and probably most of the "third world." Likewise, anecdotally at least, vendor to consumer relationships were certainly important in pre industrial America where markets were decidedly local. Their importance only rescinded, presumably, as industrialization made consumers more anonymous to vendors, prompting one of the "cluetrain" authors to state:

> We are not seats or eyeballs or end users or consumers. We are human beings and our reach exceeds your grasp. Deal with it.[156]

FOSS was born into a market (because of the Internet) where conversations and relationships between vendors, consumers, and others were once again becoming important. This marketplace later allowed the FOSS movement to respond to GPL risks in a manner heretofore unavailable, both nationally and internationally. It is this communications enabled marketplace that serves as an important backdrop for the remainder of this article.

The Internet is now a marketplace where you can shop for, inter alia, "toys and sweets, for love, for rope, for soap, for wagons and carts" and perhaps even "for bleating goats and evil-tempered camels." Indeed the masses often go there "to talk," but what has this to do with the GPL and risk management? The answer turns out to be, quite a lot. The Internet is as much a marketplace for ideas as it is a marketplace for goods; in fact this was its primordial state. It was the idea of a free operating system "kernel" that the original "hackers" were responding to. An idea marketed and propelled by a communications medium built for the task. It is also a marketplace where people, conversations, relationships, and reputation matter. The zero-distance between points on the network makes the marketplace local; its reach makes it global. The combination makes it powerful.

The marketplace, in its traditional connotation, responded to some of the risks enumerated above by offering indemnification for third party IP infringement and warranties.[157] Although these are important considerations, especially for large customers, the market response as discussed below takes a broader view.

1.   Vetting the GPL

The GPL is probably one of the most vetted licenses in the history of commerce. It is now the most dominant license of its kind, including other FOSS and public domain licenses.[158] The number of projects that use the GPL is in the tens of thousands.[159] The total number of Linux users is difficult to determine but a triangulated estimate puts the number at around 29 million in 2005.[160] Suffice it to say that the GPL enabled Linux market is large enough to attract the attention of some of the biggest names in the software industry, including IBM, Oracle, Hewlett Packard and Novell.[161] At the risk of stating the obvious, it is a safe bet that sophisticated publicly traded corporations do not invest hundreds of millions, and more likely billions, of

dollars, without clearing the investment with the best legal talent that money can buy. It might even be a safer bet that by the time these investments were contemplated, the legal consensus "on the street" had already reached the "tipping point"[162]—the GPL, grounded in the legal doctrine that underpins the entire software industry, was as "bullet proof" as a license could be sans a court holding as such.

The GPL, from its inception, has been publicly available on the FSF website (or its equivalent) to discuss and dissect. The review process has epitomized the concept of commercial transparency. The number of conversations surrounding the GPL's legitimacy and the number of relationships built around what it enables are incalculable, but these numbers are not small. A Westlaw search produced over two hundred law review articles on topic.[163] The amount of ink spilled in the popular business press is likely orders of magnitude more. Due in part to the success of the communications revolution and the norms that have driven the FOSS production methodology, economic theories are now being developed based on its principles;[164] theories that are as interesting as Adams Smith's "unseen hand" and may yet prove to be as compelling.[165]

Given the degree to which the GPL has been vetted, the more fundamental question from the point of view of this article is not what legal foundation supports the GPL, this question has been discussed at some length, but rather upon what authority would a court hold against it? In other words, as Holmes and perhaps the legal realists would have it, does the law ultimately not derive its authority from the social contract? Is it possible that where millions believe that an idea is economically viable, where the concept and its implementation is grounded in existing doctrine, and where there is little or no harm caused to anyone, a court could hold contra? If so, what is the likely effect?

This article returns to these questions infra. However, a few points should be noted, so as not to appear "pollyannaish" and leave the impression that the social contract, from which the law derives its authority, cannot itself later turn into something repugnant to our sensibilities (e.g. "separate but equal"). The law supports the social contract but does not explicitly define it. Support is provided through ratification. Ratification usually endorses rules that the majority, or in many cases its most influential members, have

already decided are the "rules of the road"—especially with respect to commerce. Whether or not this is a good thing is a completely separate question, though certainly relevant to the present inquiry.

2.   The Wisdom of Crowds: Is the GPL too Big to Fail?

Group decision-making is now a well-studied phenomenon and the surprising results are that "under the right circumstances, groups are remarkably intelligent, and are often smarter than the smartest people in them."[166] This is true despite the fact that "the people within the group are not especially well informed"—it is still capable of reaching quality decisions.[167] This is counterintuitive to be sure, since the "herd mentality" of investors and the behavior of crowds during riots are also part of our conventional wisdom. In 1906 a British scientist, Francis Galton, essentially working under a premise that English voters and common folk were basically ignorant, stumbled onto a fair where prizes would be distributed to anyone that could correctly guess the weight of a somewhat hefty ox, after it was slaughtered and dressed.[168] In order to prove his case, he decided to turn the "ox weight guessing game" into an impromptu experiment and convinced those in charge to provide him the individual results after the fact.[169] His theory was that even the average result from these "ignorant masses" would be wildly off the mark—to his chagrin (presumably) the average result was within one pound of the correct weight—1,197 pounds versus the actual weight of 1,198.[170] Similar results, with experiments of various and sundry sorts, have now established the veracity of these observations.[171]

It is a fair assumption that at least a significant portion of the masses that opined on the legitimacy of the GPL were far from the "ignorant masses" of Galton's experiment. In fact, it would be fair to assume that these masses were much better educated than the "average citizen" anywhere in the western world. These were, by and large, engineers, entrepreneurs and practicing attorneys, all of which had a vested interest in the outcome, as well as commentators from a number of disciplines, including the law. Based on the "wisdom of crowds" theory, one would expect that a

(more or less) consensus opinion from a large reasonably well-educated group would indeed validate the theory (i.e. that a decision regarding GPL validity would be of high quality). But the question remains: under what circumstances does the theory actually apply?

As it turns out, in order for the "wisdom of crowds" to function effectively, two fundamental principles are required to work in concert: decentralized decision-making and a "market clearing" system.[172] Decentralization is now the accepted conventional wisdom in various domains (e.g. business and government) and it is obviously the way markets work in general.[173] But like a market, without a mechanism for aggregating decisions, "the wisdom of crowds" cannot function.[174] It is the global reach of possibilities (ideas), combined with a mechanism for "clearing ideas" that is required.[175] In the case of Linux, the ideas were proposed modifications submitted by thousands of developers worldwide and the clearing mechanism was Linus Torvalds and a small cadre of engineers.[176] This relatively simple combination was powerful enough to change the dynamics of the entire software industry.

The common law also appears to function in a like manner. The "ideas" are the controversies brought by plaintiffs and argued by attorneys. The clearing mechanism is the decisions of courts in combination with a reporting system. What is the common law if not the "wisdom of crowds" manifested over time? This article suggests that the vetting of the GPL produced a decision, cleared through ratification by the Linux market, and reported widely on the Internet. The marketplace made a decision and moved on. It required no approval from a court of law.

With respect to the future of FOSS, the market appears to have already discounted any adverse decision in *SCO v. IBM*—short of a complete invalidation of the GPL. Therefore, the more interesting question is whether the market has likewise discounted a complete invalidation? This article suggests that it has for two reasons: (1) a complete invalidation of the GPL would be, at a minimum, an indirect/tangential repudiation of the doctrines on which it is based: contract,

licensing and copyright—a highly improbable event; (2) similar to an actual repudiation of the latter doctrines (an admittedly virtually impossible proposition) it is too late to unscramble the GPL omelet; from a practical perspective, the validity of the GPL appears to be a *fait accompli.*

This in fact may have been the real bet on the part of the big players: "our entry into the game, and the legitimacy derived thereby, establishes the market." There is no precedent whereby a court has decimated a market wherein no real or apparent harm exists, other than to the competitive advantage of other large players (e.g. Microsoft). The GPL may indeed be too big to fail, but that should not imply that the decision was arbitrary. The marketplace spoke and the decision appears to have been ratified.

C.   The FOSS Constitution and Repeat Players

The founding fathers of the GPL have referred to it as "software by the people, of the people and for the people."[177] From its inception, it is apparent that the FOSS community has viewed the GPL as a social contract exogenous to the legalities contained in the license—a kind of "code of industry conduct with respect to the practices by which free software is distributed."[178] Indeed Richard Stallman and Eben Moglen are forthright in stating the GPL's more ambitious goals when discussing the background to Version 3, in a section entitled: "The GPL is the Constitution of the Free Software Movement." Here they aptly summarize their credo as follows:

> The Free Software Foundation has never been reluctant to point out that its goals are primarily social and political, not technical or economic. The Foundation believes that free software—that is, software that can be freely studied, copied, modified, reused, redistributed and shared by its user—is the only ethically satisfactory form of software development, as free and open scientific research is the only ethically satisfactory context for the conduct of mathematics, physics, or biology. The Foundation, and those who support its broader work, regard free software as an essential step in a social movement for freer access to knowledge, freer access to facilities of communication, and a more deeply participatory culture, open to human beings with less regard to existing distributions of wealth and social power. The free software movement has taken advantage of the social conditions of its time to found its

program on the creation of vast new wealth, through new systems of cooperation, which can in turn be shared in order to further the creation of new wealth, in a positive feedback loop.

Whether or not the reader agrees with its central proposition, it is difficult to deny its audacity and self-reliance—Emerson would be proud; Whitman may have given it a nod in "Leaves of Grass;" Thoreau a likely endorser. Linus Torvalds may have invented Linux, but the GPL is a piece of Americana through and through.

Many in fact bought into, not only the license, but into the social contract as well. As in other American social movements, there have been a number of organizations more than willing to provide both legal support for the license, and moral support for its philosophical underpinnings.[179] These organizations have waited on the sidelines, presumably ready to "pounce" should their services be required. For the most part they have not had to, since as previously noted there has been precious little GPL-based litigation—that not withstanding, the threat has been ever present. In short, it appears that almost from the beginning of its life, the GPL was not a kind of legal orphan that would make for easy prey. These superbly armed "repeat players" had the kind of legal talent at their disposal that would not be easily intimidated.[180]

From the perspective of the GPL adherents, there was a lot at stake—a kind of high stakes poker with literally much more than money in the balance. Any potential plaintiff was almost guaranteed to face a fight. It is nearly impossible to determine whether any plaintiffs were actually dissuaded from bringing an action, but it is more readily apparent that the nascent FOSS marketplace, made up of (initially) small players, was buoyed by the prospect of access to legal talent, if and when required. It likely helped them sleep much better and presumably provided a sense of legitimacy. In short, it helped "the market" manage the risk.

But market risk was also managed by the "X factor"—a person's or company's reputation in the marketplace. In a market in which so much was given, and so little asked for in return, there was

significant pressure on participants "to do the right thing." Only a company like SCO could manage to turn IBM, the former monopolist, into a champion for the common man. The "reputation ethos" appears to be no passing fad, even a hardcore cynic would be hard pressed to deny its impact—for example, witness the reputation/ranking systems that are an integral part of eBay, Amazon, and countless other "social networking" sites.

As noted supra, the FOSS movement has had an impact well beyond what might have been predicted based on its humble beginnings. The next section suggests that the legal community may yet "feel" its presence, consistent with its constitution.

D.   Open Source Law and Risk Management?

Transparency. It is well understood that markets work better when transactions are "open to the light of day." Transparency in financial reporting was the policy objective behind the Sarbanes Oxley legislation (post Enron), despite the fact that its implementation may be flawed due to inefficiencies. Transparency is the hallmark by which the GPL was vetted and a bedrock principle of the FOSS movement. Although hard numbers are difficult to come by, it seems reasonable to conclude that the legal community's commentary related to the GPL was facilitated by the fact that much of the conversation took place on the public Internet. This article has alluded to the concept of "open source law" supra and this section will briefly elaborate on it. However, the breadth and depth of this topic is well beyond the scope of this article, at best some possibilities are hinted at.

This article could not have been written without access to the often-brilliant analytics contained in the cited references. Unfortunately, the majority of these references "live" within the "walled electronic gardens" of the legal publishing industry—not readily available to the public. Perhaps a plausible argument can be made that even if this information were available, the public would find it utterly incomprehensible. Although no doubt partially valid, this argument appears condescending and inconsistent with the "wisdom of crowds" argument supra. The masses may

indeed be much smarter than they have historically been given credit for. The more widely legal

commentary is distributed, the greater it's potential influence, especially with respect to helping the

marketplace manage risk. The communications enabled marketplace of the Internet has

demonstrated that clearing mechanisms are possible.

Eric Raymond, the poet laureate of the FOSS movement, has several quotes that are germane

to the topic at hand. The first is "release early and release often."[181] The second is "[g]iven enough

eyeballs, all bugs are shallow."[182] Although it would be disingenuous to say that these quotes are self-

explanatory in regards to legal commentary, it is nonetheless left as an exercise for the reader to infer

their potential applicability, given the groundwork herein.

However, one example noted infra is worthy of mention: the ALI's current effort in the

"Principles of the Law of Software Contracts."[183] The mission here is not to restate the law but

rather to make recommendations of "best practices without unduly hindering the law's adaptability

to future developments."[184] Hopefully the ALI will "release early and release often" and "given

enough legal eyeballs" the marketplace will be the better for it.

E.   Stakeholder Risk: What Would Holmes Advise?

Assuming that the GPL is valid and enforceable, what legal risks remain? This section will

briefly explore the remaining risks for three stakeholders: an individual developer, a large financial

services firm, and a foreign government. The risks that remain are those previously identified and

inherent in the GPL: its viral nature, no warranties, and no third party protection from intellectual

property infringement. Each stakeholder is likely to be impacted in a distinct manner. The question

to be answered is "what is my legal exposure?" But what is being asked is not apparent on its face.

This article assumes that the question is posed from Holmes' hypothetical "bad man"

perspective. But it also assumes that the "bad man" was hyperbole on Holmes' part. It applies

equally to someone facing criminal charges as to a businessman or the "man on the street"

considering other kinds of risk. In short, it is at its core a practical question and cannot be answered outside of the unique circumstances faced by each. In order to answer the question for these particular stakeholders it is not practical (or useful) to separate the legal risk from the business risk— the stakeholder does not separate the two when posing the question. They are not interested in legal "mumbo jumbo" but rather "what is a court likely to do (given my current circumstances), to me or for me, in fact?" It is in this vein that an answer is attempted, admittedly succinct and solely for purposes of illustration.

The individual developer faces little, if any, risk. If he only wants to contribute to a FOSS project then his risk is probably close to non-existent. The most significant risk for him, as well as for the other stakeholders, is from becoming a licensor and distributing, for reasons addressed in *SCO v. IBM* supra and expanded upon shortly. Under these initial facts he is only a contributor and faces at most a reputation risk. Assume that he wants to start a limited liability company to distribute modifications. He is now a licensor and faces the issues that confronted IBM (i.e. in *SCO v. IBM*). Although he may not be "judgment proof," his exposure is still likely to be small. Given that, even under the most favorable circumstances, he could not deliver his product sans the leveraged open source code, his risk reward ratio appears quite favorable. Finally, he is likely to be, unless his company becomes wildly successful (a good problem to have), anonymous to nearly all potential plaintiffs.

Now consider a financial services firm who uses FOSS to deliver services to its customers. Processing financial transactions efficiently and reliably is its essential value proposition. This firm's risks are quite different. They want assurances that problems inherent in the software are addressed in short order. They want software to be warranted and/or delivered with guaranteed levels of support. In other words, they want a contractual relationship with the licensor. There is nothing in the GPL that prevents contractual relationships of the kind envisioned. In fact, as previously noted,

FOSS distributors are now willing to provide the requisite services for a fee. The principal risk under these facts is how well the contract allocates the risk. Notice that this issue has nothing to do with the GPL—it is controlled through (mostly) settled contract doctrine. Further, assume that this firm wants to use FOSS on thousands of servers. Under these facts it is likely to be visible to plaintiffs bringing IP infringement suits. The firm wants a degree of indemnification from this risk. Again, this is something that is available, at a certain level of infringement protection, "out of the box" from some distributors, and is also available (presumably) under negotiated contract terms, for specific needs.[185]

Now assume, that this financial services firm, after years of using FOSS in house decides that there is a market opportunity in distributing its "platform." The firm's offering consists of a number of extensions to FOSS products. They also internally use some proprietary software to deliver services, but this software is not part of what will be publicly available. Here the firm faces yet a different set of risks. The first, and likely most important risk, is that any modifications made to FOSS must be distributed with source code freely available, as per the GPL—failure to do so is a violation of the license. Potentially one or more upstream licensors could bring an action. Additionally, the firm must institute processes to ensure that its proprietary code is not "mixed" with its FOSS code, or risk losing any proprietary claim to it (e.g. SCO as a licensor of Linux as noted supra). Again, the most obvious risk has to do with the viral nature of the license, outside of that it is free to distribute its platform, relying on the GPL, and on the GPL's foundation of copyright, licensing, and contract, to achieve its business ends. It does indeed need to implement a rigorous process that prevents mixing of code, but this is a problem almost exclusively under its own control.

Finally, consider a foreign government that wants to use FOSS, specifically Linux and complementary applications and tools, not only to "run" all its public sector applications developed

in the future, but to "host" a complete set of web based applications that are available now—applications which are also licensed under the GPL. In other words, this foreign government wants to be a super FOSS user, literally running FOSS on tens of thousands of servers. The legislation proposing this mandates that the government cannot become a distributor. Its role, barring a change in the legislation, is one of licensee only. First, it should be clear that this government stands to save millions, if not billions, of dollars in license fees. However, it is also now a significant target (i.e. assume no possibility of sovereign immunity). Its biggest risk is that the GPL licensed software it plans to deploy will become infected, thereby exposing it to significant third party liability. It is likely to contract out this risk with a large player in the market, for example IBM. IBM, standing to make millions on distribution and support fees, plus additional revenue from other services, is probably willing to "eat" this risk at a reasonable cost. It short, this government can "contract out" most, if not all, risk.

The point of this illustration was not to develop a complete response to each stakeholder's risk, that would amount to trivializing an admittedly non trivial problem, but rather to show that, outside of the viral nature of the GPL, other risks are managed under what is mostly settled law. There is no denying that the GPL "evolved" the law to a degree, but this evolution came from a stable ecosystem of copyright, licensing, and contract (the latter depending on your point of view). At the risk of mixing metaphors, if the GPL "stretched" existing doctrine, it did so incrementally.

IV.   Conclusion

The FOSS movement and the GPL have been a kind of "legal backwater"—not as in "backward" but rather as evolutionary biologists use the term in reference to the fact that "isolated populations often produce new species."[186] As noted supra, this movement started in the "geeky fringes" of a technology subculture, well below the radar of what "serious" business people would

consider a topic of interest. In this backwater a new "species" was nurtured and prospered. Due to the fact that (at least initially) money was not changing hands, its legal foundation was, at best, a curiosity. Despite the fact the money did not change hands, transactions occurred in small numbers and later in much larger numbers. Conversations "raged" and relationships were established. In short, a complete market developed, regulated by "nothing more" than the GPL. From a legal doctrinal perspective, the GPL was not invented from whole cloth but was rather "a descent with modification"[187]—containing within it most of its parental DNA.

This article has explored whether this new "species" requires new positive law for more effective governance. The market, normative principles and the legal foundation of the GPL appear to provide all the governance required for this market to thrive. The FOSS market is paradigmatic of the "wisdom of crowds" and transparency—a kind of democratic commercialism wherein stakeholders "vote" for the kind of market they want to participate in. Where there is little or no harm, and the market itself appears to have adequately allocated the risk, there is no need for legislatures to step in, either public or private. If a course correction is required then the common law, itself a product of collective wisdom and transparency, can effectively provide it.

Perhaps more interesting than the development of a new species is the implication for yet more, given the infrastructure that is now available; infrastructure which is more or less mature. The concept of "open source law" is a key component of this infrastructure and should be actively embraced. It provides a required "check and balance" with respect to the ecological conditions necessary for a new species to legitimately thrive. In short, by engaging more broadly in the conversation, the legal community may in fact expand its reach—positively impacting, through a kind of demystification, those outside of its historically narrow borders.

One thing is certain, innovation and change remain the only real constant, and the market and normative principles will continue to lead the law.

[1] Dennis M. Kennedy, *A Primer on Open Source Licensing Legal Issues: Copyright, Copyleft and Copyfuture*, 20 St. Louis U. Pub. L. Rev. 345, 345-358 (2001)

[2] See generally Robert W. Gomulkiewicz, *How Copyleft Uses License Rights to Succeed in the Open Source Software Revolution and the Implications for Article 2B*, 36 Hous. L. Rev. 179 (1999); Robert W. Gomulkiewicz, *The License is the Product: Comments on the Promise of Article 2B for Software and Information Licensing*, Berkeley Tech. L.J. 891 (1999); Michael J. Madison, *Restructuring the Software License*, 35 Loy. U. Chi. L.J. 275 (2003)

[3] See generally Matthew D. Stein, *Rethinking UCITA: Lessons from the Open Source Movement*, 58 Me. L. Rev. 157 (2006); Robert W. Gomulkiewicz, *The License is the Product: Comments on the Promise of Article 2B for Software and Information Licensing*, Berkeley Tech. L.J. 891 (1999)

[4] See Case No. 03-CV-0294 OAK (D. Utah)

[5] See Kerry D. Goettsch, S*CO Group v. IBM: The Future of Open-Source Software*, U. Ill. J. L. Tech. & Pol'y 581 (2003)

[6] Matthew D. Stein, *Rethinking UCITA: Lessons from the Open Source Movement*, 58 Me. L. Rev. 157, 158 (2006)

[7] Yochai Benkler, *Wealth of Networks: How Social Production Transforms Markets and Freedoms*, 59-60 (Yale University Press 2006)

[8] Dennis M. Kennedy, *A Primer on Open Source Licensing Legal Issues: Copyright, Copyleft and Copyfuture*, 20 St. Louis U. Pub. L. Rev. 345 (2001)

[9] *Id.*

[10] See generally Robert W. Gomulkiewicz, *The License is the Product: Comments on the Promise of Article 2B for Software and Information Licensing*, Berkeley Tech. L.J. 891, 895-904 (1999)

[11] Brian Fitzgerald & Nic Suzor, *Legal Issues for the Use of Free and Open Source Software in Government*, 29 Melb. U. L. Rev 412, 415 (2005)

[12] *Id.*

[13] Dennis M. Kennedy, *A Primer on Open Source Licensing Legal Issues: Copyright, Copyleft and Copyfuture*, 20 St. Louis U. Pub. L. Rev. 345, 357 (2001)

[14] *Id.* at 348-149

[15] See generally Yochai Benkler, *Coase's Penguin, or, Linux and the Nature of the Firm*, 112 Yale L.J. 369 (2002)

[16] *Id.*

[17] Matthew D. Stein, *Rethinking UCITA: Lessons from the Open Source Movement*, 58 Me. L. Rev. 157, 181 (2006)

[18] *Id.* at 181-182

[19] *Id.* at 182

[20] *Id.* at 185

[21] Greg R. Vetter, *Exit and Voice in Free and Open Source Software Licensing: Moderating the Rein Over Software Users*, 85 Or. L. Rev. 183, 242 (2006)

[22] See Eric S. Raymond, *Release Early, Release Often, in The Cathedral and the Bazaar (2000)*, available at http://www.catb.org/~esr/writings/cathedral-bazaar/cathedral-bazaar/index.html (theorizing how frequent releases and distributed development create robust software).

[23] Matthew D. Stein, *Rethinking UCITA: Lessons from the Open Source Movement*, 58 Me. L. Rev. 157, 183-184 (2006)

[24] Jyh-An Lee, *New Perspectives on Public Goods Production: Policy Implications of Open Source Software*, 9 Vand. J. Ent. & Tech. L. 45 (2006)

[25] The American Law Institute, *Principles of the Law of Software Contracts: Council Draft No. 1*, 1 (November 2007)

[26] *Id.*

[27] Richard E. Speidel, *An Essay on the Reported Death and Continued Vitality of Contract*, 27 STNLR 1161, 1169 (1975)

[28] *Id.* at 1162

[29] *Id.* at 1169

[30] *Id.* at 1169-1170

[31] *Id.* at 1170

[32] Oliver Wendell Holmes, *The Path of the Law*, in *The Cannon of American Legal Thought*, 29, 31 (David Kennedy & William Fisher eds. Princeton University Press 2006)

[33] *Id.*

[34] Richard E. Speidel, *An Essay on the Reported Death and Continued Vitality of Contract*, 27 STNLR 1161, 1171

[35] See generally Barry Cushman, *Regime Theory and Unenumerated Rights: A Cautionary Note*, 9 U. Pa. J. Const. L. 263

[36] Lawrence Lessig, *Free Culture: How Big Media Uses Technology and the Law to Lock Down Culture and Control Creativity*, 1 (The Penguin Press 2004)

[37] *Id.* at 2

[38] *Id.*

[39] *Id.*

[40] Robert J. Delahunty & Antonio F. Perez, *Moral Communities or a Market State: The Supreme Court's Vision of the Police Power in the Age of Globalization*, 42 Hous. L. Rev. 637, 668 (2005)

[41] *Id.*

[42] See 437 U.S. 153 (1978)

[43] See http://www.ilhawaii.net/~stony/quotes.html (last visited February 10, 2007)

[44] Robert W. Gomulkiewicz, *How Copyleft Uses License Rights to Succeed in the Open Source Software Revolution and the Implications for Article 2B*, 36 Hous. L. Rev. 179, 187-189 (1999)

[45] *Id.*

[46] *Id.*

[47] Brian Fitzgerald & Nic Suzor, *Legal Issues for the Use of Free and Open Source Software in Government*, 29 Melb. U. L. Rev. 412, 436-437 (2005)

[48] Wesley Hohfeld, *Some Fundamental Legal Conceptions as Applied in Judicial Reasoning*, in *The Cannon of American Legal Thought*, 55, 64 (David Kennedy & William Fisher eds. Princeton University Press 2006)

[49] 86 F.3d 1477 (7th Cir. 1996)

[50] Brian Fitzgerald & Nic Suzor, *Legal Issues for the Use of Free and Open Source Software in Government*, 29 Melb. U. L. Rev. 412, 437 (2005)

[51] Michael J. Madison, *Restructuring the Software License*, 35 Loy. U. Chi. L.J. 275, 295 (2003)

[52] *Id.* at 297

[53] Robert W. Gomulkiewicz, *How Copyleft Uses License Rights to Succeed in the Open Source Software Revolution and the Implications for Article 2B*, 36 Hous. L. Rev 179, 186 (1999)

[54] *Id.*

[55] *Id.*

[56] Robert W. Gomulkiewicz, *General Public License 3.0: Hacking the Free Software Movement's Constitution*, 42 Hous. L. Rev. 1015, 1021 (2005)

[57] Michael J. Madison, *Restructuring the Software License*, 35 Loy. U. Chi. L.J. 275, 283-287 (2003)

[58] *Id.*

[59] *Id.* at 297

[60] *Id.*

[61] *Id.* at 298-301

[62] *Id.*

[63] See Lawrence Lessig, *Code v2.0 and Other Laws of Cyberspace*, (Basic Books 2006)

[64] Richard E. Speidel, *An Essay on the Reported Death and Continued Vitality of Contract*, 27 STNLR 1161, 1180 (1975)

[65] Madison, *supra* n. 57, at 276

[66] *Id.*

[67] See generally Julie E. Cohen, *Copyright and the Jurisprudence of Self-Help*, 13 Berkeley Tech. L.J. 1089 (1998); David Friedman, *In Defense of Private Orderings: Comments on Julie Cohen's "Copyright and the Jurisprudence of Self-Help"*, 13 Berkeley Tech. L.J. 1151 (1998); *The Impact of Article 2B of the Uniform Commercial Code on the Future of Transactions in Information and Electronic Commerce: Forward*, 13 Berkeley Tech. L.J. 809 (1998)

[68] See generally Madison, *supra* n 57; Stein, *supra* n. 17

[69] See generally Madison, *supra* n. 57

[70] See Julie E. Cohen, *Copyright and the Jurisprudence of Self-Help*, 13 Berkeley Tech. L.J. 1089 (1998); David Friedman, *In Defense of Private Orderings: Comments on Julie Cohen's "Copyright and the Jurisprudence of Self-Help"*, 13 Berkeley Tech. L.J. 1151 (1998)

[71] Julie E. Cohen, *Copyright and the Jurisprudence of Self-Help*, 13 Berkeley Tech. L.J. 1089 (1998)

[72] David Friedman, *In Defense of Private Orderings: Comments on Julie Cohen's "Copyright and the Jurisprudence of Self-Help"*, 13 Berkeley Tech. L.J. 1151 (1998)

[73] Madison, *supra* n. 57, at 276

[74] See Cohen, *supra* n. 71

[75] *Id.* at 1095-1096

[76] *Id.* at 1096

[77] *Id.* at 1098

[78] *Id.*

[79] *Id.* at 1098-1099

[80] *Id.* at 1094

[81] *Id.*

[82] *Id.*

[83] *Id.* at 1117-1128

[84] *Id.* at 1119

[85] See Friedman, *supra* n. 72

[86] *Id.* at 1167-1168

[87] *Id.* at 1168

[88] *Id.*

[89] *Id.* at 1168-1169

[90] *Id.* at 1169

[91] *Id.* at 1158

[92] *Id.*

[93] *Id.*

[94] *Id.* at 1156

[95] See generally Ronald Coase, *The Nature of the Firm*, (1937)

[96] See Madison, *supra* n. 57

[97] *Id.* at 276

[98] *Id.*

[99] *Id.* at 285

[100] *Id.*

[101] *Id.*

[102] *Id.* at 284

[103] *Id.* at 275

[104] *Id.* at 295

[105] *Id.* at 301

[106] *Id.*

[107] *Id.* at 308-310

[108] See Stein, *supra* n. 17

[109] See generally Robert E. Scott, *Is Article 2 the Best We Can Do?*, 52 Hastings L.J. 677 (2001)

[110] *Id.* at 688

[111] The American Law Institute, *supra* n. 25

[112] See http://www.groklaw.net/ (last visited March 16, 2007)

[113] Lori E. Lesser, *Open Source Software 2006: Critical Issues in Today's Corporate Environment*, 885 PLI/Pat 9, 27 (2006)

[114] *Id.*

[115] Adam Kubelka and Matthew Fawcett, *No Free Beer - Practice Tips for Open Source Licensing*, 22 Santa Clara Computer & High Tech. L.J. 797 (2006)

[116] Kerry D. Goettsch, *SCO Group v. IBM: The Future of Open-Source Software*, 2003 U. Ill. J.L. Tech. & Pol'y 581, 584 (2003)

[117] *Id.*

[118] See Nina L. Chang, Comment, *No GNU Is Good G'News for SCO: Implications of SCO v. IBM*, 9 Intell. Prop. L. Bull. 47, 47 (2004); Kerry D. Goettsch, *Recent Development, SCO Group v. IBM: The Future of Open-Source Software*, 2003 U. Ill. J.L. Tech. & Pol'y 581, 583-84; Andrew LaFontaine, *Comment, Silicon Flatirons Student Writing Contest 2005: Adventures in Software Licensing: SCO v. IBM and the Future of the Open Source Model*, 4 J. on Telecomm. & High Tech L. 449, 468-80 (2006);

[119] Greg R. Vetter, *Exit and Voice in Free and Open Source Software Licensing: Moderating the Rein Over Software Users*, 85 Or. L. Rev. 183 (2006)

[120] See generally Madison, *supra* n. 57

[121] See *Id.* (FN215: wherein the court held that source code must also be distributed; confusing because it analogized the decision to moral rights in German copyright law).

[122] See Free Software Foundation,. *The GPL tested in US courts - Wallace v. FSF*, http://www.fsf.org/news/wallace-vs-fsf (last modified 2006-03-23); Also, See generally Elaine Laurence and Clifford Chance, *Open Source Software*, 885 PLI/Pat 297 (2006)

[123] *Id.* Free Software Foundation

[124] *Id.*

[125] Elaine Laurence and Clifford Chance, *Open Source Software*, 885 PLI/Pat 297, 308 (2006)

[126] *Id.*

[127] *Id.* at 309

[128] *Id.*

[129] *Id.*

[130] See generally *Id.* (November 2006)

[131] Greg R. Vetter, *"Infectious" Open Source Software: Spreading Incentives or Promoting Resistance?*, 36 Rutgers L.J. 53 (2004)

[132] Goettsch, *supra* n. 116 at, 584-585

[133] *Id.*

[134] See Free Software Foundation, *General Public License (Version 2, June 1991)*, http://www.fsf.org/licensing/licenses/gpl.html (Last modified 2005-05-02 03:16 PM) (enumerated paragraph 11)

[135] *Id.*

[136] *Id.* (enumerated paragraph 1)

[137] *Id.*

[138] See generally Gomulkiewicz, *supra* n. 10

[139] Free Software Foundation, *supra* n. 133 (enumerated paragraph 12)

[140] *Id.* (Preamble)

[141] Jyh-An Lee, *New Perspectives on Public Goods Production: Policy Implications of Open Source Software*, 9 Vand. J. Ent. & Tech. L. 45, 47 (2006)

[142] *Id.*

[143] *Id.*

[144] *Id.*

[145] Robert W. Gomulkiewicz, *General Public License 3.0: Hacking the Free Software Movement's Constitution*, Hous. L. Rev. 1015 (2005)

[146] Mark H. Webbink, *Open Source Software - Bridging the Chasm*, 691 PLI/Pat 663, 670 (2002)

[147] See generally Benkler, *supra* n. 7

[148] John Dewey, Untitled, in Julius Rosenthal Foundation, Northwestern University, eds., *My Philosophy of Law: Credos of Sixteen American Scholars*, 73-85 (Boston: Boston Law Book Co., 1941) (endnote provided by *The Cannon of American Legal Thought*, 120 (David Kennedy & William Fisher eds. Princeton University Press 2006))

[149] John Dewey, *Logical Method and Law*, in *The Cannon of American Legal Thought*, 125-130 (David Kennedy & William Fisher eds. Princeton University Press 2006)

[150] David Kennedy, *John Dewey*, in *The Cannon of American Legal Thought*, 118 (David Kennedy & William Fisher eds. Princeton University Press 2006)

[151] Doc Searls, Building a Relationship Economy, http://www.linuxjournal.com/node/1000182 (last updated February 15, 2007)

[152] See generally *Id.*

[153] Rick Levine et al., *the cluetrain manifesto: the end of business as usual* (Cambridge: Perseus Publishing, 2000)

[154] *Id.* at 9

[155] See Searls, *supra* n. 151

[156] Levine, *supra* n. 152 at, xv (see preface)

[157] Greg R. Vetter, *Exit and Voice in Free and Open Source Software Licensing: Moderating the Rein Over Software Users*, 85 Or. L. Rev. 183, 209 (2006)

[158] Fitzgerald, *supra* n. 47, at 438-439

[159] Free Software Foundation, http://www.fsf.org/news/gplv3 (last modified September 6, 2005) (See also statistics from www.sourceforge.net, an internet hosted site for managing software projects)

[160] See The Linux Counter, http://counter.li.org/estimates.php (last updated March 2005)

[161] See Computer Business, *Linux Foundation gets big-name backing for inaugural board*, http://www.cbronline.com/article_news.asp?guid=EE9DC08C-15CF-43B6-8BBD-93C16670B7C9 (last updated March 28, 2007)

[162] See generally Malcolm Gladwell, *The Tipping Point*, (Back Bay Books 2002) (the basic premise is that small things can have large and dramatic effects. Here the behavior/ideas of a small group of "hackers" has had such a ripple effect— global in reach and dramatic in its breadth. Once the idea/behavior reaches a "critical mass" it exceeds the "Tipping Point" essentially having a "life" of its own. This is analogous to what happens in an epidemic.)

[163] See Westlaw, http://www.westlaw.com (search entered as GPL & "General Public License")

[164] See generally Benkler, *supra* n. 7

[165] *Id.*

[166] James Surowiecki, *The Wisdom of Crowds: Why the Many Are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations*, (Doubleday 2004), xiii

[167] *Id.* at xiii-xiv

[168] *Id.* at xi

[169] *Id.* at xii

[170] *Id.* at xiii

[171] See generally *Id.*

[172] *Id.* at 72-75

[173] *Id.*

[174] *Id.*

[175] *Id.*

[176] *Id.*

[177] The Free Software Foundation, *The History of the GPL*, http://www.free-soft.org/gpl_history/ (last visited April 7, 2007)

[178] Richard Stallman and Eben Moglen, *GPL Version 3: Background to Adoption*, http://www.fsf.org/news/gpl3.html (last visited April 7, 2007)

[179] See generally The Free Software Foundation, http://www.fsf.org/ (last visited April 7, 2007); See also Electronic Frontier foundation, http://www.eff.org/ and Creative Commons, http://creativecommons.org/ (both last visited April 7, 2007)

[180] See generally Marc Galanter, *Why the 'Haves' Come Out Ahead: Speculations on the Limits of Legal Change*, in *The Cannon of American Legal Thought*, 495-536 (David Kennedy & William Fisher eds. Princeton University Press 2006)

[181] See Raymond, s*upra* n. 22

[182] *Id.* at 30

[183] The American Law Institute, *supra* n. 25

[184] *Id.* at 2

[185] See Vetter, *supra* n. 157

[186] See Kristen David Adams, *The Folly of Uniformity? Lessons from the Restatement Movement*, 33 Hofstra L. Rev. 423 (2004) (Paraphrasing and quoting Professor Adams from parts I. and V. wherein she uses evolutionary biology language in reference to what could have been a new "species" of American law had the Virgin Islands not adopted the U.S. Restatements, lock, stock and barrel.)

[187] *Id.*