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Abstract

Early Internet scholars proclaimed that the transnational nature of the Internet rendered it inherently unregulable by conventional governments. Instead, the Internet would be governed by customs and practices established by the end user community in a manner reminiscent of the lex mercatoria, which spontaneously emerged during medieval times to resolve international trade disputes independently and autonomously from national law. Subsequent events have revealed these claims to have been overly optimistic, as national governments have evinced both the inclination and the ability to exert influence, if not outright control, over the physical infrastructure, the domain name system, and the content flowing across the network. These failures have done little to lessen the allure of Internet self-governance. In particular, some scholars have suggested that more widespread use of open source software would increase the Internet’s ability to resist governmental control. This Essay explores whether more widespread use of open source software might provide the basis for the type of bottom-up ordering associated with the lex mercatoria. Perhaps unsurprisingly, a system of self-governance based on open source implicates the same questions of spontaneity, universality, and autonomy that surround the lex mercatoria.
Is Open Source Software the New Lex Mercatoria?

Fabrizio Marrella* and Christopher S. Yoo**

INTRODUCTION

The first generation of academic scholarship on the Internet proclaimed that its transnational nature rendered it inherently unregulable by conventional governments. Instead, the Internet would be governed by rules and customs developed by members of the online community itself.1 Although most of these early Internet theorists remained somewhat vague about the mechanism through which such norms and structures might arise, some suggested that they might emerge through international standard setting organizations or the system for

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resolving domain name disputes. As a model for how such system might emerge, they pointed to the lex mercatoria, which is generally characterized as a set of uniform legal principles developed during medieval times on behalf of traveling merchants that was based on the customs and practices of international trade, enforced by special merchant courts, and independent of local governments and their laws.

Other scholars expressed skepticism about the Internet’s supposed unregulability. Indeed, such claims would ultimately be contradicted by events such as the United States’ unilateral efforts to block the creation of the .xxx domain on the Internet, the influence of governments and large corporations over international standard setting organizations, as well as China’s success in restricting the online activity of its citizens.

These failures have done little to dampen the desire for a conceptual foundation for Internet self-governance. Interestingly, Internet guru Lawrence Lessig has suggested that more widespread use of open source software may increase the Internet’s ability to resist governmental

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This Article explores potential implications of that observation by examining whether more widespread use of open source software might provide the basis for the type of bottom-up ordering associated with the lex mercatoria. Part I offers an overview of open source software. Part II describes both the ancient and modern versions of the lex mercatoria and outlines some of the central debates about those institutions. Part III examines whether open source software can provide a decentralized mechanism for unifying the online commercial environment that is independent of national governments and international organizations in the manner that the proponents of the lex mercatoria envision. Perhaps unsurprisingly, a system of self-governance based on open source runs afoul of the same questions of spontaneity, universality, and autonomy that surround the lex mercatoria.

I. WHAT IS OPEN SOURCE SOFTWARE?

Open source software is one response to the growing importance and complexity of modern computer processing and networking. Computer programs generally exist in two forms. The first is known as “source code,” which is written in a programming language, such as C, Pascal, or Fortran. Although source code is quite technical, experienced programmers can read and modify it intelligibly. Source code is then compiled into “object code” or “machine language,” which is expressed as a series of 0s and 1s. Object code can be read by computers, but cannot easily be deciphered by human beings.

Most software companies protect their work by only distributing their software in object code and by refusing to release the source code. In addition, software companies usually

8 See LESSIG, supra note 4, at 6-8, 20-21, 100-08.
copyright the code that they distribute and include terms in the copyright licenses prohibiting customers from making any unauthorized copies or modifications. The absence of the source code and the contractual restrictions on modifying the code make it difficult for end users to diagnose and resolve incompatibility problems. Increases in the number and diversity of applications and peripheral devices run by end users, the growth in the number of connections between computers made possible by the Internet, and the greater integration of applications and network functions has made this problem all the more acute.

The open source movement attempts to solve these problems in two ways. Open source software is copyrighted and then distributed under licenses—the most prominent of which is the GNU General Public License (GPL)—that require that software be distributed with its source code or that the source code be made available on request for a period of three years. In addition, open source licenses leave follow-on developers free to use or modify the software as they see fit, provided that these modifications are clearly described and made available to others on an open source basis. In so doing, open source software embraces the vision that collective and cooperative efforts by multiple individuals represent the best approach for producing and improving code.10

Open source licensing has proven to be quite effective in organizing the development of certain software. The leading success story of the open source movement is a nonproprietary operating system known as GNU/Linux, which began in the early 1980s when a change in computer hardware rendered obsolete an operating system that had been collectively developed by the staff of the Artificial Intelligence Laboratory at the Massachusetts Institute of

10 For the leading academic exposition of the merits of open source software, see YOCHAI BENKLER, THE WEALTH OF NETWORKS 59-127 (2006).
Technology. A staff member named Richard Stallman chafed at the prospect of working on a computer with a proprietary operating system that he could not change. Instead, he resigned his position at MIT and began to lead the development of a Unix-compatible operating system called GNU in January 1984. By 1990, Stallman and his associates had completed all of the major components of the operating system except the kernel, which is the part of the operating system that interfaces with the computer’s hardware. In 1992, a Norwegian student named Linus Torvalds released a Unix-like kernel he dubbed Linux and invited anyone to integrate it into an operating system. Stallman combined Torvalds’s work with this own to form GNU/Linux, which has emerged as the leading alternative operating system to Microsoft Windows. Stallman also founded the Free Software Foundation in 1985 to support the open source movement and to raise funds to support the development of GNU. Other prominent success stories include the Apache software, which is employed by most web servers, and the Firefox web browser by Mozilla, which has emerged as the leading competitor to Microsoft’s Internet Explorer web browser.

II. WHAT IS LEX MERCATORIA?

Although some trace the lex mercatoria back to Roman times, the conventional narrative begins in the Middle Ages, when trade fairs began to play an important role in the resurgence of international commerce. The itinerant merchants who traveled among these fairs grew increasingly frustrated with the nonuniformity of the laws that they confronted as they traveled.
from jurisdiction to jurisdiction, as well as the local judges’ lack of commercial sophistication.
To address these concerns, these traders spontaneously developed a uniform set of principles to
resolve disputes among them. By mutual agreement, disputes between traders that arose under
the law merchant would be resolved in special merchant courts run by the merchants themselves,
which dealt with complex technical matters in a relatively informal and expedient manner. These
courts derived their authority not from the coercive power of the state, but rather from the fact
that the contract specified that the merchant courts would resolve any disputes between the
parties. Traders who attempted to breach this agreement would find themselves ostracized by the
other members of the merchant community. The content of these principles was independent of
local law as well as other universal systems of rules like Roman Law, rediscovered and taught in
European universities since the eleventh century, and Canon Law, the universal law of the
Catholic Church.\(^ \text{13} \) It was based instead on the prevailing customs and practices of the trade. As a
result, the lex mercatoria reflected the collective wisdom of the entire trading community
distilled from the bottom up in the manner envisioned by Friedrich Hayek,\(^ \text{14} \) rather than being the
conscious creation of any person or sovereign.

Over time, nation states began to regard the independent, merchant-centered authority
provided by the lex mercatoria as a potential threat to their political power. Thus, during the
course of the nineteenth century, the lex mercatoria was absorbed into national law. In civil law
countries, the principles previously governed by the lex mercatoria were incorporated into
commercial codes. In common law countries (particularly England), the view that the lex
mercatoria was part of customary transnational business law and “not a law established by the

soverainty of any Prince”\textsuperscript{15} gave way as merchant courts were dissolved in favor of national common law courts. The attitude driving this shift of power away from the lex mercatoria is perhaps epitomized by the admonition that “[m]erchants ought to take their law from the courts and not the courts from the merchants; and when the law is found inconvenient for the purpose of extended commerce, application should be made to parliament for redress.”\textsuperscript{16} The progressive nationalization of the lex mercatoria left it largely forgotten and reduced to a matter of legal history rather than an independent source of law.

The modern resurgence of the lex mercatoria can be traced mainly to the 1960s.\textsuperscript{17} In an international symposium held in London in 1962 on the sources of contemporary law of international trade, Clive Schmitthoff argued that the practices of international trade might form a new lex mercatoria, observing:

\begin{quote}
The evolution of an autonomous law of international trade, founded on universally accepted standards of business conduct, would be one of the most important developments of legal science in our time. It would constitute a common platform for commercial lawyers from all countries, those of planned and free market economy, those from civil law and common law, and those of fully developed and developing economy, which would enable them to co-operate in the perfection of the legal mechanism of international trade.\textsuperscript{18}
\end{quote}

\begin{flushleft}
\textsuperscript{15} GERARD MALYNES, CONSUETUDO VEL LEX MERCATORIA: OR THE ANCIENT LAW-MERCHANT vi (photo. reprint 1997) (1622).
\textsuperscript{17} Before the 1960s, the lex mercatoria had been invoked by great comparative law scholars, such as Saleilles and Lambert, during the First International Congress of Comparative Law held in Paris in 1900. See H.C. GUTTERIDGE, COMPARATIVE LAW 5-6, 18-19 (2d ed. 1949). Subsequently, international lawyers such as Fragistas and Goldstain authored some articles on the emerging role of transnational law, both for arbitration procedure and for East-West trade during the Cold War era. See Klaus Peter Berger, The New Law Merchant and the Global Market Place: A 21st Century View of Transnational Commercial Law, 2000 INT’L ARB. L. REV. 91, 93, reprinted in THE PRACTICE OF TRANSNATIONAL LAW 1, 3 (Klaus Peter Berger ed., 2001).
\end{flushleft}
A seminal 1964 article by Berthold Goldman defined the scope of operation of the new law merchant more clearly.19 As was the case during medieval times, this new law merchant was driven by the need for a uniform set of principles to govern international commercial transactions, as well as the desire for expeditious resolution of disputes. In its modern form, the lex mercatoria emerges from the terms of standard international commercial contracts, professional codes of conduct, trade usages, general principles of law, and arbitral decisions.20

As proof of the existence of a new lex mercatoria, advocates point to references to the lex mercatoria in choice of law provisions in international commercial contracts as well as the willingness of arbitrators to refer to the lex mercatoria when making arbitral awards.

Recent studies have shown that such private lawmaking is condoned by the United States and many industrialized European countries through organizations such as the American Arbitration Association and in the securities sector through the New York Stock Exchange, the American Stock Exchange, the National Association of Securities Dealers,21 and banking

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clearing-houses.\textsuperscript{22} The same holds true for international commodities merchants such as diamond dealers,\textsuperscript{23} grain merchants,\textsuperscript{24} cotton merchants,\textsuperscript{25} and, of course, Internet services and domain providers.\textsuperscript{26} Law and economics research has confirmed that market-based sanctions may assure the enforcement of lex mercatoria outside of or in combination with state legal enforcement mechanisms.\textsuperscript{27}

The new lex mercatoria’s most avid proponents describe it as a third system of law, independent of both national and public international law. Its essential characteristics are its spontaneity (in that it is created by decentralized private ordering, rather than by any particular nation, organization, or person), its universality, and its autonomy from legal systems (in that it does not depend on national or public international law for its existence or development). Others take a more limited view, regarding the lex mercatoria as providing a streamlined process for

\begin{itemize}
  \item See Snyder, supra note 21, at 395-99.
\end{itemize}
resolving disputes or as a system for filling the gaps left by existing law. Since neither of
these more limited visions of the lex mercatoria can serve as the basis for the type of bottom-up
ordering envisioned for the Internet, we will focus on the broader vision. Other scholars have
adopted an even more skeptical stance towards the lex mercatoria, challenging both its Roman
and medieval roots as well as the existence of its modern revival.

Today, choice of law clauses permit harmonization of international commercial law by
specifying that the substantive legal rules used to resolve the dispute may encompass, via the lex
mercatoria, general principles of law and the customs and practices of international trade rather
than the substantive contract law of any particular state. Although national courts once

28 See William Jones, The Settlement of Mercantile Disputes by Merchants: An Approach to the History of
Commercial Law, Address at the University of Chicago Law School Symposium: The Empirical and Theoretical
Underpinnings of the Law Merchant (Oct. 16-17, 2003), cited in Mark D. Rosen, Do Codification and Private
29 See BERGER, supra note 20, at 40.
30 See, e.g., J.H. Baker, The Law Merchant and the Common Law Before 1700, 38 CAMBRIDGE L.J. 295, 299-
308 (1979); Charles Donahue, Jr., Medieval and Early Modern Lex Mercatoria: An Attempt at the Probatio
Diabolica, 5 CHI. J. INT’L L. 21 (2004); Emily Kadens, Order Within Law, Variety Within Custom: The Character of
the Medieval Merchant Law, 5 CHI. J. INT’L L. 39 (2004); Stephen E. Sachs, From St. Ives to Cyberspace: The
Mangels, Are the Roots of the Modern Lex Mercatoria Really Medieval?, 65 S. ECON. J. 427 (1999); Albrecht
articles/cordes.shtml.
31 See, e.g., Georges R. Delaume, Comparative Analysis as a Basis of Law in State Contracts: The Myth of
the Lex Mercatoria, 63 TUL. L. REV. 575 (1989); Keith Hight, The Enigma of the Lex Mercatoria, 63 TUL. L. REV.
613 (1989); Christoph W.O. Stoecker, The Enigma of the Lex Mercatoria: To What Extent Does it Exist?, J. INT’L
ARB., Mar. 1990, at 101, 109-10. As one commentator notes, “The modern lex mercatoria is unlike any other field
of law. People never tire of asking whether it exists.” Celia Wasserstein Fassberg, Lex Mercatoria—Hoist with Its
32 The most recent evaluation of U.S. law concludes that U.S. law will permit parties to agree that arbitrations
will be governed by non-state norms, such as the lex mercatoria. Symeon C. Symeonides, Contracts Subject to Non-
International arbitration regulation rules provide a legal basis for a choice of the lex mercatoria. For example, the
arbitration rules of the London Court of International Arbitration permit the parties to agree that the arbitration be
governed by law other than that of the seat of arbitration. See LONDON COURT OF INTERNATIONAL ARBITRATION
The arbitration rules of the International Chamber of Commerce, the International Institute for Confliction
Prevention and Resolution Rules for Non-Administered Arbitration (formerly the Center for Public Resources
Institute for Dispute Resolution), the Stockholm Chamber of Commerce, and the World Intellectual Property
Organization provide that the tribunal shall apply the rules of law agreed upon by the parties or, in the absence of
such an agreement, the law that the tribunal “determines to be appropriate.” See Int’l Chamber of Commerce,
subjected foreign law to fairly intensive review to ensure its consistency with the public policy embedded in local law, over time most nations’ courts have become increasingly willing to honor the contracting parties requests to apply foreign law or even a law of their own devising.\textsuperscript{33} Honoring the contracting parties’ choice of law provisions obviates the need to resolve the vexing choice of law issues that often plague disputes over international transactions. In so doing, it provides the uniformity upon which international trade depends.

In addition, most international commercial contracts include a clause specifying that any disputes arising from the contract will be resolved through commercial arbitration. Shifting disputes to an arbitral forum has provided for expedited resolution and inoculated the parties from anti-foreign biases.\textsuperscript{34} Although reliance on arbitration may make the new lex mercatoria somewhat dependent on national law, any such dependence is relatively thin. While courts were once quite protective of their own jurisdiction and somewhat reluctant to enforce arbitral judgments based on laws that conflicted with the public policy of national law, most systems are now willing to compel arbitration in accordance with arbitration clauses and construe the public

\textsuperscript{33} See Symeonides, supra note 32, at 212; Ralf Michaels, \textit{The Re-State-Ment of Non-State Law: The State, Choice of Law, and the Challenge from Global Legal Pluralism}, 51 \textit{Wayne L. Rev.} 1209, 1227-37 (2005) (arguing that under modern conflict of law principles, courts refuse to apply non-state law like the lex mercatoria as law, but will enforce arbitrations based on non-state law and will use a variety of other devices to acknowledge non-state normative orders).

policy exception to the enforcement of arbitral judgments based on foreign law rather narrowly.\(^\text{35}\) As a result, arbitration clauses have proven quite effective in freeing disputes from the application of norms by national courts, allowing commercial expertise to bear on these norms instead.

The new lex mercatoria has been fostered by recent attempts to distill a set of model rules to govern international commercial transactions, including the Principles of International Commercial Contracts produced by the International Institute for the Unification of Private Law (UNIDROIT),\(^\text{36}\) and on a different scale the Principles of European Contract Law,\(^\text{37}\) as well as by scholarly attempts to synthesize the lex mercatoria into a set of core legal principles.\(^\text{38}\) Arbitrators have evinced an increasing willingness to apply the lex mercatoria and UNIDROIT when the choice of law provision of an international contract specifically invokes them, when determining the relevant principle of national law is difficult or impossible to determine, and when filling gaps in international conventions such as the United Nations Convention on Contracts for the International Sale of Goods (CISG).\(^\text{39}\)


The lex mercatoria and the UNIDROIT Principles have begun to influence European policymakers outside the context of arbitration and international contracts as well. Choice of law issues in Europe are currently governed by the Convention on the Applicable Law to Contractual Obligations (commonly known as the 1980 Rome Convention). Article 4 of the Rome Convention provides that in the absence of a choice of law clause, disputes will be “governed by the law of the country with which [the contract] is most closely connected,” which is presumed to be the country of the party who is to effect the performance unless “it appears from the circumstances as a whole that the contract is more closely connected with another country.”

Presently, the European Community considers replacing the 1980 Rome Convention with a new regulation. Article 3 of the proposed EC regulation provides that “a contract shall be governed by the law chosen by the parties” and specifically recognizes the possible application of nonnational law by providing:

The parties may also choose as the applicable law the principles and rules of the substantive law of contract recognised internationally or in the Community. However, questions relating to matters governed by such principles or rules which are not expressly settled by them shall be governed by the general principles underlying them or, failing such principles, in accordance with the law applicable in the absence of a choice under this Regulation.

The commentary on the proposed regulation makes clear that this language “authorises the parties to choose as the applicable law a non-State body of law,” including “the UNIDROIT principles, the Principles of European Contract Law or a possible future optional Community

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41 Id. art 4, paras. 1, 5, at 2-3.
43 Id.
instrument.” Whether it would authorize a choice of law provision invoking the lex mercatoria directly would depend on whether the lex mercatoria constituted a body of contract law “recognised internationally or in the Community.” Furthermore, the commentary explicitly suggests that the provision would exclude a choice of law provision based on the lex mercatoria on the grounds that it is insufficiently precise. The interpretation of the provision offered by the commentary is somewhat self-contradictory, since it may be argued that even the UNIDROIT Principles are not, technically speaking, “recognised internationally.” Some scholars have pointed out that the UNIDROIT principles are an academic exercise. Thus, in contrast to the work of the United Nations International Law Commission, the UNIDROIT Principles are the result of the efforts of eminent lawyers and law professors. In this sense, the UNIDROIT principles are similar to a Restatement produced by the American Law Institute, but on a global scale. Hence, the UNIDROIT Principles derive their legitimacy from the bottom up rather than from the top down.

44 Id. at 5.
45 Id. at 14.
47 According to the U.N. General Assembly statute that created the International Law Commission, the Commission’s object is the “progressive development of international law.” Statute of the International Law Commission art. 1(1), G.A. Res. 174 (II) (Nov. 21, 1947), available at http://untreaty.un.org/ilc/texts/instruments/english/statute/statute_e.pdf. The statute further provides:

[T]he expression “progressive development of international law” is used for convenience as meaning the preparation of draft conventions on subjects which have not yet been regulated by international law or in regard to which the law has not yet been sufficiently developed in the practice of States. Similarly, the expression “codification of international law” is used for convenience as meaning the more precise formulation and systematization of rules of international law in fields where there already has been extensive State practice, precedent and doctrine.

48 See MICHAEL J. BONELL, AN INTERNATIONAL RESTATEMENT OF CONTRACT LAW (2d ed. 2005).
III. CAN OPEN SOURCE SOFTWARE SERVE AS A NEW LEX MERCATORIA FOR THE INTERNET?

The debates around the lex mercatoria provide a framework for evaluating whether open source software can serve as the foundation for the type of bottom-up ordering envisioned by many Internet scholars. We focus on three aspects often said to be essential to the lex mercatoria: spontaneity, universality, and autonomy from national law.

A. Spontaneity

The lex mercatoria is often described as being “spontaneous,” in that it emerges from the practices of merchants without any exercise of governmental power, intergovernmental lawmaking process, or ratification.49 Indeed, spontaneity is often described as one of the lex mercatoria’s defining characteristics.50 Although some scholars argue that spontaneity also requires that the lex mercatoria not be fashioned as an instrument of harmonization,51 others claim that attempts to harmonize international commercial law may still be part of the lex mercatoria so long as they do not rely on an exercise of sovereign power by the constituent states.52

Serious questions exist whether open source software satisfies the lex mercatoria’s definition of spontaneity. Although the institution of open source software is the result of

49 In the words of Lord Justice Mustill, “The lex mercatoria simply exists. It springs up spontaneously, in the soil of international trade. It is a growth, not a creation.” Mustill, supra note 38, at 153. For other examples of defining the lex mercatoria in terms of spontaneity, see Bernard Audit, The Vienna Sales Convention and the Lex Mercatoria, in LEX MERCATORIA AND ARBITRATION, supra note 34, at 173, 173; and Goldman, Applicable Law, supra note 19, at 114.
51 See Fassberg, supra note 31, at 80-81; Mustill, supra note 38, at 152-53; Rosen, supra note 28, at 89.
52 See Berthold Goldman, Lex Mercatoria, FORUM INTERNATIONALE, Nov. 1983, at 1, 7.
individual licensing decisions, the content of those licenses is more the reflection of the will of strong norm entrepreneurs who wish to shape the values of the online community rather than the emergence of customs established through decentralized decisionmaking. Of particular significance are the efforts of Richard Stallman, who, as noted earlier, led the development of GNU/Linux operating system into the first significant open source project and wrote both the initial and subsequent versions of the GPL. Stallman has made clear that he regards the open source movement as a “stark moral choice” and has made it a personal goal to inculcate new users with the open source philosophy. Another organization known as the Open Source Initiative, which is the current certifying body for open source licenses, was also created not to reflect industry customs and norms, but rather to transform them self-consciously through a media campaign designed to work from the top down rather than the bottom up.

The centralized nature of open source norm creation makes it hard to characterize the open source movement as the result of spontaneous, bottom-up, decentralized decisionmaking. Instead, open source principles are more properly regarded as a reflection of the views espoused by leading open source advocates.

B. Universality

As Harold Berman notes, “The universal character of the law merchant…has been stressed by all who have written about it.” The commonness across countries represent a major part of the lex mercatoria’s utility. On a more fundamental level, however, many advocates of the lex mercatoria believe that this universality is based on the existence of a common core of

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53 See supra note 11 and accompanying text.
54 Stallman, supra note 11, at 55-63, 67-70.
56 BERMAN, supra note 12, at 342. For other statements defining the lex mercatoria in terms of “universality,” see Goldman, Frontiers du droit, supra note 19, at 183; Mustill, supra note 38, at 157; and GALGANO, supra note Error! Bookmark not defined.
legal rules that are so “[u]niversally acknowledged” as to constitute “natural-law-type principles.”

Others have challenged the universality of the lex mercatoria. Some point to the enduring disputes over the content of the lex mercatoria, arguing that the resulting principles are so vague and general as to provide little real guidance or constraint. Others argue that the lex mercatoria disproportionately reflects the views of industrialized western nations.

Still others take a more contextual view of universality, drawing a distinction between “macro” lex mercatoria, which are the legal principles common to all or most of the nations engaged in international trade, and “micro” lex mercatoria, which means the legal principles generated by a particular contract. From this perspective, the lex mercatoria need not be truly universal so long as it is uniform with respect to the legal systems connected with the dispute.

Others regard the lex mercatoria not as a single, unified body of law, but rather sets of laws that vary from industry to industry in the form of a separate “lex petrolea,” “lex constructionis,” “lex electronica,” and “lex maritima.” Moreover, even if the substance is uniform, the application to
particular facts requires interpretation. In the process, interpreters necessarily bring in their own culture by the way they frame the issues and how they interpret.63

Open source has not achieved the type of universality or uniformity of principles envisioned by proponents of the lex mercatoria. The lack of unifying principles is exemplified by the proliferation of types of open source licenses. As of this writing, the Open Source Initiative has approved fifty-eight different open source licenses.64 A brief discussion of two of the most common open source licenses illustrates the point. The licensing restrictions contained in the GPL apply not only to the original code covered by the GPL, but also to any modifications that cannot reasonably be considered independent and separate works. These provisions cause these licenses to sometimes be described as “reciprocal,” in that any developer who wishes to take advantage of open access to an existing piece of GPL code must contribute any improvements they make back to the open source community.65 They are also described as “viral,” because any proprietary code that becomes integrated with code licensed under the GPL becomes subject to the open source mandate.66 “Academic” licenses, like the Berkeley Software Distribution (“BSD”) license, are quite different in that they do not require that modifications be made freely available to others. Instead, the BSD only requires that any modification provide clear notice of the changes and give appropriate credit to the creators of the original code.67 The effect is to allow open source software distributed under a BSD license to be freely combined with proprietary software without any concern.
The differences between reciprocal and academic licenses reflect the plurality of norms underlying the open source movement. Reciprocal licenses reflect a distaste for the commercialization of software and a reluctance to allow those driven by profit to use open source software to their own commercial advantage. Academic licenses do not share this hostility and instead reflect a belief that work prepared solely for academic purposes should be freely available to everyone with no strings attached. The underlying heterogeneity of norms and practices thus undercuts any assertions that open source software provides the type of universality associated with the lex mercatoria.

C. Autonomy

Finally, the lex mercatoria is typically described as being “autonomous,” in that its development is said to be independent from both national and international law. One should be careful not to make too much of this claim. Complete separation of legal systems is an abstract dogma which does not correspond to reality. In this respect, even (public) international law is not completely separate from national legal systems. This does not, of course, imply that international law is not “law” in a technical sense. Rather the claim of autonomy means that private business actors can produce law (even if it is not “national law”) without a previous authorization by nation states. In this sense, lex mercatoria may exist and be applied without a “rule of recognition” emanating by nation states.

68 See Goldman, supra note 52, at 22; Lando, supra note 61, at 752; Mustill, supra note 38, at 151 (describing the lex mercatoria as “anational”).
From this perspective, it is no surprise that lex mercatoria may depend upon national law to recognize arbitral jurisdiction and to enforce arbitral judgments.\footnote{See Georges R. Delaume, Law and Practice of Transnational Contracts 99 (1988) (recognizing that “the ‘delocalization’ of transnational contracts in never complete”); William W. Park, Control Mechanisms in the Development of a Modern Lex Mercatoria, in LEX MERCATORIA AND ARBITRATION, supra note 34, at 143, 152; Hight, supra note 31, at 614-15; Hans Smit, Proper Choice of Law and the Lex Mercatoria Arbitralis, in LEX MERCATORIA AND ARBITRATION, supra note 34, at 93, 108.} The dependence of the lex mercatoria on national law is relatively thin. All that is required of national law is that it enforce arbitration clauses by compelling arbitration and recognize and enforce arbitral decisions once they have been handed down. Although the courts of many countries were once quite aggressive in declining to condone arbitration under legal principles that conflicted with the public policy of national law, over time they have exhibited a greater willingness to apply foreign law and the lex mercatoria.\footnote{See supra notes 33, 35 and accompanying text.}

Open source software is much more dependent on national law than are transactions governed by the lex mercatoria. Open source licenses typically make no provision for arbitration of disputes. As a result, enforcement of the copyright license and substantive copyright law is left to national courts and the choice of law rules embodied in national law. Furthermore, the substance of the copyright and patent law of individual nations exert considerable influence over open source software as well.

1. Copyright

Authors of open source software could have ensured open access to their work simply by renouncing copyright protection and dedicating their code to the public domain. Open source advocates chose not to follow this approach primarily out of concern that follow-on developers who made derivative works based on open source code would frustrate the purposes of the open source movement by copyrighting their improvements. In order to prevent this, the basic
approach of the GPL is to copyright software and then license it to everyone under the condition that every licensee agrees to distribute freely any improvements or modifications they may make.

The result is that the scope of rights under open source licenses depends on copyright law. The primary international copyright treaties, such as the Berne Convention and the General Agreement on Tariffs and Trade (GATT), as well as efforts at regional copyright harmonization through forums such as the North American Free Trade Agreement (NAFTA), the European Union, and the Andean Pact have all declined to establish an international copyright law. They instead established minimum levels of protection that leave countries free to add additional protection as they see fit. The resulting variations in the scope of copyright protection leave open source software dependent on national law.

A few examples will illustrate the point. Consider, first, the difficult issues surrounding moral rights. The copyright law of many European nations gives strong protection to moral rights, including the rights of disclosure, withdrawal, attribution, and integrity. These rights are often nonwaivable and thus cannot be dissipated via a license. As a result, programmers who modify code may retain rights in the code they produce regardless of the specific terms of the open source license. U.S. law, in contrast, offers minimal protection of moral rights and restricts those to the visual arts. These differences mean that the success of the open source’s movement strategy of copyrighting software and then including license terms requiring that all modifications be shared necessarily depends on the details of national law.

Consider also the clause of the GPL license requiring that all derivative works be distributed on the same terms as the GPL.\textsuperscript{75} There is reason to question the validity of this provision under U.S. law, which has traditionally been somewhat hostile towards attempts to use market power provided by intellectual property to control the disposition of follow-on innovation.\textsuperscript{76} In particular, the GPL provisions on licensing follow-on innovations resemble provisions in patent licenses commonly known as “grantbacks.” More modest grantback provisions simply require patent licensees to give the licensor a nonexclusive license to any improvements based on the licensed patent. More restrictive grantback provisions require the licensee to assign any patents to follow-on improvements back to the licensor outright. The Supreme Court recognized that although licenses requiring licensees to assign patents on any improvement back to the patent holder are not illegal per se, circumstances exist under which they can violate the antitrust laws.\textsuperscript{77} Some lower federal courts have carried the Supreme Court’s reasoning to its logical conclusion and held that certain grantback provisions constituted antitrust violations,\textsuperscript{78} and during the 1970s the Justice Department listed grantback provisions among the nine licensing practices that it considered to be illegal per se.\textsuperscript{79}

\begin{footnotesize}
\begin{enumerate}
\item See supra note 66 and accompanying text.
\item Some early judicial decisions suggested that any license term that imposed restrictions that exceeded those imposed by copyright law were preempted. See, e.g., Vault Corp. v. Quaid Software Ltd., 847 F.2d 255, 270 (5th Cir. 1988). The trend of more recent decisions is to hold that copyright law does not preempt such licensing agreements. See, e.g., Bowers v. Baystate Techs., Inc., 320 F.3d 1317, 1323-26 (Fed. Cir. 2003) (applying First Circuit law); ProCD, Inc. v. Zeidenberg, 86 F.3d 1447, 1453-55 (7th Cir. 1996); Nat’l Car Rental Sys., Inc. v. Computer Assocs. Int’l, Inc., 991 F.2d 426, 431-34 (8th Cir. 1993).
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In addition, the Supreme Court has long employed a doctrine known as patent misuse to invalidate patent holders’ attempts to extend their patents beyond their proper scope. Patent misuse encompasses, but is not necessarily limited to, all attempts to extend the market power provided by a patent beyond the terms of the patent grant that violate the antitrust laws and renders the patent unenforceable until the misuse is purged. Some courts have held that grantback provisions constitute patent misuse, because they represented an attempt by the patent holder to control innovations that fell outside of the patent’s scope.

Over time, antitrust law has become more accommodating toward grantback provisions. The Justice Department began to take a more hospitable stance towards grantback clauses during the 1980s, adopting a “rule of reason” approach that permits grantback provisions absent a showing of actual anticompetitive effect. A 1988 statutory amendment explicitly provided that grantback provisions only constitute patent misuse if the patent holder possesses market power. Furthermore, the current Antitrust Guidelines for the Licensing of Intellectual Property recognize that grantback provisions “can have procompetitive effects, especially if they are nonexclusive” and “may be necessary to ensure that the licensor is not prevented from effectively competing

80 See Blonder-Tongue Labs., Inc. v. Univ. of Ill. Found., 402 U.S. 313, 343 (1971) (“[T]he Court has condemned attempts to broaden the physical or temporal scope of the patent monopoly.”); Morton Salt Co. v. G.S. Suppiger Co., 314 U.S. 488, 492-93 (1942) (offering the seminal discussion of patent misuse).
81 Interestingly, the U.S. Courts of Appeals are split over whether patent misuse requires proof of a completed antitrust violation. Compare, e.g., USM Corp. v. SPS Techs., Inc., 694 F.2d 505, 512 (7th Cir. 1982) (holding that conduct must rise to the level of an antitrust violation to constitute patent misuse), with C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1372 (Fed. Cir. 1998) (concluding that “[p]atent misuse is viewed as a broader wrong than antitrust violation” and that “misuse may arise when the conditions of antitrust violation are not met”).
because it is denied access to improvements developed with the aid of its own technology.”

Accordingly, the Guidelines clearly provide that grantback clauses will be evaluated under the rule of reason, focusing on “whether the licensor possesses market power in a relevant technology or innovation market,” whether the grantback provision “is likely to reduce significantly licensees’ incentives to invest in improving the licensed technology,” and “the extent to which the grantback provision has offsetting procompetitive effects.”

Similar issues arise with respect to copyright. In 1990, a U.S. Court of Appeals drew an analogy to patent misuse doctrine to recognize a parallel doctrine of copyright misuse. Although courts have yet to address the issue, commentators have suggested that grantback clauses could constitute copyright misuse. Indeed, IBM appears to have so argued in the process of defending a copyright infringement suit brought by Unix-owner SCO. The Guidelines also make clear that nonexclusive grantbacks, like those in open source licenses, are less likely to have anticompetitive effects. In addition, with respect to copyright, attempts to control derivative works may not be properly regarded as an attempt to expand the scope of copyright protection. In contrast to U.S. patent law, under which follow-on innovations are

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87 Id.
88 See Lasercomb Am., Inc. v. Reynolds, 911 F.2d 970 (4th Cir. 1990). On the history of copyright misuse, see Mark A. Lemley, Beyond Preemption: The Law and Policy of Intellectual Property Licensing, 87 CAL. L. REV. 111, 151-58 (1999). As is the case with patent misuse, the U.S. Courts of Appeals are split over whether conduct that does not rise to the level of an antitrust violation can constitute copyright misuse. Compare, e.g., Saturday Evening Post Co. v. Rumbleseat Press, Inc., 816 F.2d 1191, 1200 (7th Cir. 1987) (holding that conduct must rise to a level of an antitrust violation to constitute copyright misuse), with Lasercomb, 911 F.2d at 978 (taking the position “a misuse need not be a violation of antitrust law”).
90 See Sapna Kumar, Enforcing the GNU GPL, 2006 U. ILL. J.L. TECH. & Pol’y 1, 34.
independently patentable, U.S. copyright law does not grant follow-on innovators independent protection and instead regards any unauthorized derivative works as infringement. As a result, grantback terms may be less likely to be regarded as attempts to extend the scope of copyright protection beyond the statutory grant. Conversely, the fact that follow-on innovations receive no protection under copyright law arguably undercuts any suggestion that this provision is necessary to preserve the licensor’s ability to compete.

The viral aspects of the open source license raise far greater concerns. To the extent that the licensing provision attempts to exert control over unrelated and preexisting intellectual property that are not derivative improvements of the open source software, it may be struck down under copyright misuse as an impermissible attempt to exercise rights beyond those granted by copyright. If so, the copyright would be unenforceable until the misuse is purged, and follow-on innovators would be free to commercialize open source code. At the same time, the Antitrust Guidelines also make clear that nonexclusive grantbacks, like those in open source licenses, are less likely to have anticompetitive effects. Thus, one can see that certain aspects of open source licenses are potentially suspect under U.S. copyright law.

European law has no direct analogue to the copyright misuse doctrine. Although civil law recognizes a similar sounding doctrine known as “abuse of right,” this doctrine is reserved for extreme situations and is not commonly used to correct the alleged unfairness of contractual agreements. European Union law has adopted an increasingly permissive stance toward

93 See Feinberg, supra note 89, at 707.
94 See Nadan, supra note 89, at 369-70.
requirements that licensees assign or license back rights to any follow-on improvements. The EC Treaty permits the European Commission to exempt conduct from antitrust-style scrutiny either on a case-by-case basis or through categorical “block exemptions.” In 1996, the EC adopted the Technology Transfer Block Exemption (TTBE) regulation to cover certain IP licensing practices. Most importantly for our purposes, the 1996 TTBE did not exempt license terms requiring the licensee to assign back to the licensor rights to any improvements or new applications based on the licensed technology. The inclusion of an assign-back term placed the entire licensing agreement outside the scope of the exemption provided by the TTBE. The 1996 TTBE did exempt provisions that required the licensee to license any improvements back to the licensor provided that (1) in the case of severable improvements the license was nonexclusive and (2) the licensor grants an exclusive or non-exclusive license to his own improvements to the licensee.

Over time, the EC began to recognize that its formalistic, categorical approach failed to take into account whether the licensor possessed market power or whether the agreement was likely to have any anticompetitive effects. As a result, the 1996 TTBE was discouraging a great deal of IP licensing that would have enhanced competition and economic efficiency. These concerns led the EC to adopt a new TTBE in 2004 that imposed market share thresholds that

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100 Id. art. 2, para. 1(4), at 7.
must be met before certain licensing practices would be subject to Article 81. Like the 1996 TTBE, the new TTBE provides that provisions that require the licensee to assign back or grant exclusive licenses to any improvements are not exempt from Article 81. In other ways, the new TTBE took a more permissive approach toward grantbacks on improvements. For example, provisions requiring nonexclusive licenses to any improvements need no longer be reciprocal to remain legal. Even more importantly, under the 1996 TTBE, the inclusion of an overly restrictive grantback or assign-back term took the entire licensing agreement outside the scope of the TTBE and thus subjected the entire agreement to Article 81. Under the current TTBE, the inclusion of such terms only renders those terms nonexempt without affecting the validity of the remainder of the agreement. In short, U.S. law is likely to subject the viral licensing provisions to the rule of reason, while reciprocal and nonexclusive grantback provisions such as those generally contained in open source licenses are likely to be exempt from antitrust-style scrutiny under either the 1996 or the 2004 TTBEs. The enforceability of open source licenses may thus vary with the particular national law most closely associated with a particular piece of software. This conclusion effectively raises serious doubts about claims that open source licensing can constitute an autonomous enforcement regime that is independent of national or international law.

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102 Id. art. 5, para. 1(a)-(b), at 16.
103 See Makan Delrahim, The Long and Winding Road: Convergence in the Application of Antitrust to Intellectual Property, 13 GEO. MASON L. REV. 259, 262 n.10 (2005) (noting that “the revised TTBE is much more tolerant of once black-listed restraints, such as exclusive grantbacks on improvements”).
104 See Carlin & Pautke, supra note 97, at 616.
2. Patent

National variations in patent law represent an even more significant potential restriction on open source software. As was the case with copyright, the leading international patent treaties, such as the Paris Convention for the Protection of Industrial Property of 1883 and the Trade-Related Aspects of Intellectual Property (TRIPs) Agreement, each simply set forth minimum levels of patent protection, while leaving individual nations free to provide additional protection as they saw fit. One particular area of international divergence was with respect to software patents, which receive different treatment in different areas of the world. After exhibiting considerable resistance to permitting the patenting of software,106 U.S. law eventually adopted a more sympathetic stance toward software patents107 and eventually began to regard software as patentable subject matter.108

European nations have adopted a more skeptical stance towards software patents. The European Patent Convention, which despite its name is not an act of the European Union but rather a multilateral treaty, has long taken the position that software is not patentable,109 and on July 6, 2005, the European Parliament overwhelming rejected a European Commission proposal that would have authorized software patents.110 Notwithstanding this rejection, the European Patent Office and national patent offices of EU member states have construed the limitation narrowly, issuing thousands of patents on the grounds that, while European law prohibits the

108 See In re Alappat, 33 F.3d 1526 (Fed. Cir. 1994).
110 See Patentability of Computer-Implemented Inventions, 2006 O.J. (C 157 E) 95 (reporting the July 6, 2005, rejection of the proposed directive on the patentability of software).
patenting of naked algorithms, it does not bar patenting the application of an algorithm to a particular technical problem.\textsuperscript{111}

Differences in the validity of software patents in the U.S. and Europe has a potentially dramatic impact on open source licenses. As noted earlier, open source licenses focus primarily on copyright. Unlike licenses for proprietary software, which typically indemnify licensees against patent infringement claims filed by third parties, open source licenses take a more modest approach, simply including a warranty of “provenance” stating that the licensor believes that its contributions are original and noninfringing. The risk of patent liability is thus quite real. One study reports that the Linux kernel infringes 283 issued patents.\textsuperscript{112} There are, to be sure, many practical obstacles to the filing of patent infringement actions. Given the decentralized manner in which open source software is distributed, patent holders may well find it quite difficult to identify infringers. That said, some residual danger of liability remains, and the scope of this danger, of course, depends upon the validity of software patents, which in turn is completely dependent on national law.

D. Arbitration as a Potential Solution

One potential solution to the problems of nonuniversality and nonautonomy of open source software could be solved by committing the resolution of open source disputes to arbitration. So long as nations remain willing to compel arbitration and enforce arbitral awards, committing decisionmaking to arbitrators would allow the development of uniform principles independent from national law.


1. Copyright

Scholars have begun to call for the development of uniform, transnational copyright norms independent of the laws of any national system through arbitration.113 The merits of developing such law in an arbitral forum draws support from the IBM-Fujitsu case,114 in which the arbitrators were able to compensate for the undeveloped state of the law by fashioning remedies of their own.115

Any such solution would be limited by the uncertainty about arbitrability of copyright issues. Countries vary widely in the extent to which they permit arbitration of copyright-related issues. In the United States, it is now clear that copyright-related disputes are arbitrable.116 In Kamakazi Music Corp. v. Robbins Music Corp., the U.S. Court of Appeals for the Second Circuit held that no public interest considerations existed that would prohibit arbitration of copyright infringement claims.117 In so holding, the court reserved judgment on the question of whether copyright validity was arbitrable, which the court appeared to acknowledge potentially raised more serious public interest concerns.118

117 684 F.2d 228, 231 (2d Cir. 1982).
118 Id.
In *Saturday Evening Post Co. v. Rumbleseat Press, Inc.*, the U.S. Court of Appeals for the Seventh Circuit addressed the issue reserved by the Second Circuit in *Kamakazi Music*, holding that an arbitrator may determine the validity of a copyright when the issue arises in a copyright license lawsuit. The court noted that the Supreme Court did not consider antitrust to raise a sufficient threat to public policy to justify preventing arbitrability. Copyright raised even fewer public interest concerns, since the “monopolies” granted by copyright were less problematic than those redressed by the antitrust laws, given that whatever market power a copyrighted work enjoyed could be easily circumvented by the creation of close substitutes. Furthermore, Congress had enacted legislation expressly authorizing the arbitration of patent validity. Given the more problematic nature of patents, copyright represented an *a fortiori* case. The Seventh Circuit reconfirmed this holding in *Hill v. Gateway 2000, Inc.*, which upheld an arbitration clause contained in a shrinkwrap license. Although courts occasionally invalidate arbitration clauses in shrinkwrap and clickwrap licenses because of unconscionability or inadequate consent, they now have little hesitation in enforcing arbitration clauses in cases when the contract has been properly formed.

A recent survey of the arbitrability of copyright disputes in other countries revealed a wide variety of practices. Some countries, such as Belgium, Germany, Japan, and Switzerland,

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119 816 F.2d 1191, 1199 (7th Cir. 1987) (Posner, J).
120 *Id.* at 1198-99.
121 *Id.* at 1199.
122 105 F.3d 1147 (7th Cir. 1997).
follow the U.S. approach and permit arbitration of all aspects of software copyrights, including disputes over licensing, infringement, and validity.125 Other countries, such as Brazil, Israel, and Spain, permit arbitration over disputes about licensing and infringement, but do not permit arbitration of copyright validity.126 Still others, including China, do not permit arbitration of either licensing disputes or validity.127 It is thus far from clear that the inclusion of arbitration clauses in open source licenses would necessarily provide open source software with the universality and autonomy associated with the lex mercatoria.

2. Patent

Patent law poses even more difficult questions of arbitrability. Recent surveys reveal a wide diversity of practices with respect to the arbitrability of patent disputes.128 For example, while U.S. law has long been hospitable to the arbitration of disputes over patent licenses,129 U.S. courts have taken a far different stance with respect to patent validity. The U.S. Supreme Court tangentially addressed the issue in Lear, Inc. v. Adkins, in which the Court eliminated a doctrine called “licensee estoppel” that until then barred anyone who had licensed a patent from challenging its validity.130 The Court saw the case as requiring a balance between two conflicting sets of policies. On the one hand were the policies underlying contract law, which enforced the intentions of the parties and attempted to prevent parties from repudiating their promises simply because they became dissatisfied with their bargain.131 On the other hand were the policies underlying patent law, which reflected “the important public interest in permitting full and free

125 See Grantham, supra note 116, at 202, 208, 210-12.
126 See id. at 216-19.
127 See id. at 204.
131 Id.
competition in the use of ideas which are in reality a part of the public domain.”132 The Court regarded the public interest embodied in patent law as more important and refused to allow language in a patent license to trump the licensee’s ability to challenge the validity of the license in court. In the words of the Court, “we think it plain that the technical requirements of contract doctrine must give way before the demands of the public interest.”133

For this reason, lower courts subsequently held that patent validity questions “are inappropriate for arbitration proceedings and should be decided by a court of law, given the great public interest in challenging invalid patents.”134 Indeed, one court found “universal agreement that, at least insofar as the issue of patent validity is concerned, arbitration is inappropriate.”135

U.S. hostility toward arbitration of patent validity would end with the enactment of 1982 legislation specifically permitting the arbitration of all patent validity, enforceability and infringement disputes.136 A 1984 amendment further allowed arbitral resolution of a Patent Office proceeding known as an “interference,” through which current patent holders can contest a pending patent application.137 Since then, U.S. law has been largely open to arbitral resolution of patent disputes.

The practices of other countries vary widely. Some countries, such as Belgium and Switzerland, appear to follow the U.S.’s approach and allow arbitration of both patent validity and licensing.138 Others, such as Brazil, Finland, France, Italy, Spain, and Sweden, appear to

132 Id.
133 Id.
137 Id. § 135(d).
138 See Grantham, supra note 116, at 201-02, 211-12.
permit arbitration of licensing issues, but prohibit arbitration of patent validity.\textsuperscript{139} Still others, such as Canada, Germany, Israel, Japan, and the Netherlands, appear to permit arbitration of validity, but limit the enforcement of the arbitral judgment to the parties to the arbitration.\textsuperscript{140} Still others, such as China, effectively bar arbitration of any aspect of patent law.\textsuperscript{141} These differences in various countries’ willingness to arbitrate patent-related issues limit the extent to which arbitration can serve as an autonomous and universal basis for resolving patent disputes over open source technologies.

\textbf{CONCLUSION}

The concept of a stateless, transnational, universal body of law generated from the bottom up by actual commercial practices has long captured the imagination of transnational law scholars. Tying the concept of Internet regulation to the long historical tradition associated with the lex mercatoria fosters a pragmatic sense of connectedness and legitimacy. Equally importantly, the vision that these norms would emerge from the bottom up outside the control of sovereign nations carries considerable appeal. The fact that many Internet scholars find the vision of the lex mercatoria enticing should also come as no surprise. Internet users have long shared a desire for uniform rules for global interoperability built on a foundation of decentralized, user-defined self-governance free from governmental interference.

Upon closer inspection, debates about Internet self-governance run aground on many of the same issues that characterize the debate over the lex mercatoria. After all, e-commerce is just

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\textsuperscript{139} See Smith et al., \textit{supra} note 128, at 333; Grantham, \textit{supra} note 116, at 206-07, 209, 216-18, 219-20.
\textsuperscript{141} See Smith et al., \textit{supra} note 128, at 345-47; Grantham, \textit{supra} note 116, at 204-05.
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one of the different sectors of trade in which lex mercatoria is applied, since its rules are part of the basic sources of contemporary international business law.

As enticing as the image of a spontaneous, universal, and autonomous legal order may be, the reality is that most legal systems retain, at different speeds, a number of deep interdependencies with national law and its control mechanisms. Given the controversies that have long surrounded the original debates about the lex mercatoria, that attempts to extend the same concepts into Internet governance would run afoul of the same problems should come as no surprise.