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Lex Informatica*: Foundations of Law on the Internet

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I. INTRODUCTION

The Internet² is in the process of transforming from a small academic exchange network into a massive interactive and global communications complex. It will have an unprecedented ability to bring people and information together from all over the world in a global marketplace of ideas, goods, and services. E-cash purchasing,³ information exchange, value-added services, electronic banking,⁴ mail-order services, gambling casinos,⁵ and securities markets⁶ are already online or are just around the corner. Moreover, the capacity now exists to add even more applications, some of which will be completely unprecedented. This expansion of Internet capabilities will certainly entail powerful social, political, and legal implications.

1. The term "Lex Informatica" is taken from W.H. Van Boom & J.H.M. Van Erp, *Electronic Highways: On the Road to Liability*, in EMERGING ELECTRONIC HIGHWAYS: NEW CHALLENGES FOR POLITICS AND LAW 153, 156 (Victor Bekkers et al. eds, 1996). While the authors use the term solely to denote a possible system for conflicts of law relating to the Internet, I have expanded the meaning of the term in this paper to include the concept of an independent system of law similar to the Lex Mercatoria.

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2. Terms such as the Internet, the Net, and Cyberspace will be used interchangeably throughout this paper to denote the current worldwide inter-linkage of computer networks. For an introduction to the basic terms and concepts associated with the Internet and the World Wide Web, see ACLU v. Reno, 929 F.Supp. 824 (E.D. Penn. 1996); TRACEY LAQUEY, THE INTERNET COMPANION: A BEGINNER'S GUIDE TO GLOBAL NETWORKING (2d ed. 1994).


4. Electronic banking will likely increase the amount of Net commerce, but it will also open up more opportunities to use shady offshore banks. See Amy Barrett, *Patrolling the Black Holes of Cyberspace*, BUS. WEEK, June 12, 1995, at 78.


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With more people, more services, and more commerce online, the number and the severity of legal conflicts on the Net will increase. Increased Internet contracting will bring a corresponding increase in contract disputes that must be resolved with a sensitivity toward the special problems of Internet transactions. Internet torts will also increase as more people interact online. As these disputes and conflicts become more common and the stakes increase, the demand for law to resolve them will grow. With so much at stake online, national governments will be anxious to reign in the Net to secure its economic benefits for their companies and to protect their citizens from harm.

The freewheeling days of the Internet as a cultural outpost are over. Online users have multiplied twenty-fold from 1 million in 1988, and commerce on the Net is expected to reel in $45.8 billion by 2000, up from an estimated $2.2 billion [in 1995]. Governments are racing to clear the way for a well-functioning virtual marketplace by imposing rules against potential plagues ranging from pornography to copyright infringement to consumer fraud. A lack of safeguards will “slow down the growth of what is likely to be a major boon for consumers and business.”

Changes in Net demographics are leading to an increased demand for law and order from within Cyberspace as well. When the Net was much smaller, “high-minded” academics were able to foster a communitarian ethic that substituted cooperation for compulsory law. As the Internet expands, however, there will be an increase in users who are much less idealistic or high-minded and thus much more likely to treat Cyberspace as a playground where physical world graces and behavior can be thrown out. Methods of


8. These early ideals are summed up by the term “Netiquette”. Although advocates of Netiquette believe that social regulation will continue to work, they are clearly worried. See Arlene Rinaldi, *Netiquette Home Page: Questions and Answers* (visited Nov. 18, 1996) <http://www.fau.edu/rinaldi/netiquette.html> (specifically, rinaldi/Net/netlife.txt.).

9. Some have used the term “physical world” to contrast Cyberspace from non-Cyberspace. However, merely because the world of Cyberspace has no physical existence beyond the computers on which it resides, does not keep it from being real. It is a world of information, ideas, and arrangements of electrons that have real consequences and a real existence.

social self-regulation such as excluding offending users from the community and communicating their behavior to others are losing impact as the size of the Internet now allows a user who has violated social rules in one area of the Net to move to another area where he and his conduct will be unknown to those who would have protected themselves had they known of his online behavior patterns. Furthermore, with so many people online, it would be difficult if not impossible for a community such as this to track down offenders in the physical world. Without fear of repercussions, those wishing to behave badly online will have a virtual license to do so. It is clear, therefore, that the Internet must have law and order if it is to become a stable marketplace and if it is our belief that people ought to be protected from disreputable conduct. What is unclear, however, is what this law will be, who will have the opportunity to write it, and who will enforce it.

The answer to these questions are as varied and complex as the Net itself, but in some ways, the answer to each of these questions will help provide answers to the others. This paper will begin by describing the characteristics of the Net and how those characteristics will shape the types of law relating to Internet activity. Specifically, the mere extension of physical world laws and government jurisdiction to Cyberspace will ultimately prove ineffective because of the fast-paced and unique nature of this global medium. Emerging from this chaos will be an autonomous body of law evolved on the Net. This Lex Informatica will meet the legal needs of netizens much as the Lex Mercatoria evolved to meet the needs of merchants who found national laws incapable of dealing with the reality of merchant transactions.

II. SETTING THE STAGE: THE INADEQUACY OF STATE LAW

State law is based on borders and jurisdiction. Legal rights and responsibilities are therefore dependent on where one is located in space. The traditional justifications for this division of legal authority have been broken down into the categories of power, effects, legitimacy, and notice. By

11. "Netizen" is a combination of "citizen" and "Net" that is useful when describing the political or legal obligations and rights of a Net actor as a citizen of the Net.
12. For the purposes of this paper, "State", "Nation", and "Country" refer collectively to nation-states, or governments of the world recognized as sovereign entities under international law.
14. Id. at 1370.
examining each in turn, I will demonstrate how the global nature of the Internet escapes these defining characteristics of territorial law. Furthermore, the examination of the ineffectiveness of state-based law makes a convincing case for a Lex Informatica, or independent Net law.

A. Power

"Control over physical space, and the people and things located in that space, is a defining attribute of sovereignty and statehood. Lawmaking requires some mechanism for law enforcement, which in turn depends on the ability to exercise physical control over, and to impose coercive sanctions on, law violators."  

States wishing to impose law on or in Cyberspace will find that they simply do not have the physical control over the Net necessary for lawmaking authority. States wishing to impose a set of laws must ensure the integrity of their boundaries to keep illegal activities and illegal actors out. However, in part because of the design of the Internet, boundaries in Cyberspace do not correspond to the geographical boundaries of the physical world. This design, influenced by the needs of the U.S. military, puts a premium on the ability of the network to continue to function if an enemy attack damages or destroys part of it. As part of this functional design, network computers automatically reroute data flows around blocked or damages parts of the network much as airlines reroute flights around closed airports. A communication or access attempt on the Net that is blocked from its destination at point A will be rerouted around the blockage to the requesting party at point B. A partial solution is available if states install filtering software to keep out illegal communications. However, the use of such

15. Id. at 1393.
16. See Yang, supra note 7, at 59. The military wanted to develop a method of communication and data exchange that would not only be quick and efficient but also able to survive the rigors of war which would inevitably include destruction of or sabotage to part of the network. The test of the technology was to allow scientists doing military research to connect to each other on a system called ARPANET, the forerunner of the Internet. This also partly explains the academic tendencies of the early Net. See generally LAQUEY, supra note 2.
17. LAQUEY, supra note 2, at 30. Information transmitted on the Net is broken up into small, independent bits of information or "packets". Each packet contains information on its location relative to the other packets and its destination. If a portion of the path is blocked or destroyed, the computer will reroute the packet to another computer and send it on its way. As these packets are received, the location information within each packet is used to reassemble the message. Use of packets eliminates the dangers of losing the whole communication, and makes rerouting during transmission more efficient. See LAQUEY, supra note 2, at 5.
18. Id. at 5.
software slows the Net to a crawl, destroying most of the same benefits flowing from the speed of the Net that were originally meant to be preserved by the filter. Without efficient and quick Internet access, businesses will be unable to keep up with competitors who have access to the Internet’s capacity for worldwide information gathering, marketing, and management. Any nation adopting such a policy would therefore find itself excluded from many of the enormous economic benefits of the Net for only a marginal increase in control.

Another problem stems from the difficulties that states have in tracking down and finding people who may owe damages or who are subject to punishment. The key Internet feature leading to this problem is that the Net is set up to operate logically rather than geographically. The Internet is consequently programmed to deal only with finding the logical location of a computer, called a URL (or Internet address), not the physical location of the computer with that address or the person behind that address. As a result, the person behind the cyber-identity can use that identity to remain anonymous while evading detection by legal authorities. For example, a person wishing to perpetuate a certain type of activity, such as gambling or fraud, might register his Internet address in a less restrictive jurisdiction, out of reach of the state’s laws while he himself remains within that country. A state may thus technically have jurisdiction over an offending user, but be unable to act because the structure of the Net allows that person to remain undetected and out of reach of state authority.

B. Effects

Another reason law is normally tied to geography is that the harms flowing from the offending behavior are normally captured within the physical boundaries of the jurisdiction. The law of a jurisdiction therefore governs actions that are most likely to have effects solely in that jurisdiction. This concept is reflected by the doctrine of *lex loci delicti*, or the law of the place of the wrong, which puts jurisdiction with effects. The effects of illegal actions taken on the Internet, however, are not similarly confined by...
geography. The speed of electrons and the interconnected nature of the Net means that communication of information throughout the Net is insensitive to distance. Consequently, the effects of actions are immediately felt throughout the world regardless of location. Thus, the effects of an action are not merely confined to a certain localized area, nor do they radiate out from that point of origin. Rather, these effects have an impact on every location on the Net instantaneously. Thus, an action taken on a computer in Indiana impacts a computer in China at the same time it affects another in Michigan. The fact that Indiana and Michigan are geographically closer than Indiana is to China is irrelevant by Net standards. An action taken in Indiana may just as well have taken place in China from the perspective of a computer in Michigan. For example, in the physical world, the impacts of a defamatory action are generally limited by the readership of a local newspaper or the viewers of the local TV broadcast. As a result, the defamation has mostly local effects. On the Internet, however, a defamatory statement is instantaneously available throughout the world at the brush of a keystroke. The damage of the action is now felt throughout the world. The effects of Internet activity are therefore not limited by geography because distance is irrelevant in Cyberspace.

C. Notice

Traditional jurisdiction relies on the theory that jurisdiction is attained when an activity is purposely directed into the forum state. An individual who deals with persons in that state is on notice that a certain set of laws may govern the activity and therefore has the opportunity to take the appropriate precautions. It is not unreasonable to call that person into account in another jurisdiction because they were aware of the risk and had the opportunity to take precautions to avoid liability. Actors on the Internet suffer from several disabilities that make this justification for application of state law irrational. First, netizens have no notice that they are acting within another jurisdiction because Internet addresses do not correspond to physical locations. These

22. See generally Johnson & Post, supra note 13, at 1375.
23. See id. at 1372.
24. See id. at 1371.
26. See Johnson & Post, supra note 13, at 1370.
27. Id. at 1371.
actors are only aware of the Internet location they are at and not the country. It is therefore unreasonable to expect them to take precautions. Second, information placed on the Net that causes harm must be actively retrieved by Net users so that only an attenuated definition of directed activity will cover harmful activity that flows outside the physical jurisdiction. Net publishers are also unlikely to consider that their audience is broader than that of persons in their own jurisdiction and will therefore fail to take appropriate precautions. For example, a publisher in America may not contemplate that information posted on his computer in the United States might end up being viewed in Saudi Arabia with accompanying consequences under Saudi law. Furthermore, even if he knows it might be seen outside the United States, he may not know where exactly it will be accessed. Even if he does know where the site might be accessed, there are still serious questions about whether he intended such access, and therefore consciously directed the activity into the jurisdiction where it was accessed. Third, unlike multinational corporations that have access to vast legal resources, Net users are unlikely to be sophisticated enough to be able to modify behavior or draft around problems related to different jurisdictions even if they are aware of the transborder effects of their activities.

D. Legitimacy

In order to be effective, a legal system must be seen as legitimate, in other words, it must have the consent of the governed. Otherwise, there is a serious possibility that citizens may evade or ignore the law that will likely result in increased enforcement costs for society. For territorial legitimacy, individuals living in a given jurisdiction must have some say in how the laws affecting them have been written. States wishing to control activity on the Internet suffer from two legitimacy problems. First, there is the general problem present in all international transactions that an actor in country A may be subjected to the laws of country B although he had no voice in the enactment of those laws. In the past, this problem only impacted a few transactions and then only those who had notice first. However, the Internet presents special

29. See infra Section II F.
30. See Johnson & Post, supra note 13, at 1370.
31. Id.
problems for state legitimacy because of its unprecedented ability to bring people together from all over the world on a daily basis. This increased interaction means that there will be more dealings between people from different states. A greater number of transactions will mean a greater number of conflicts and disputes and thus a greater number of legitimacy problems for states trying to exercise jurisdiction. Netizens are likely to be unhappy about being called into a court in a country where they did not even know they had acted.

Second, a substantial number of the residents of Cyberspace are resistant to law emanating from outside of Cyberspace. State law simply does not have the broad consent of the governed when it comes to Cyberspace. Consider a “Declaration of the Independence of Cyberspace”, by John Perry Barlow transmitted throughout the Net on February 8, 1996:

Governments of the Industrial World, you weary giants of flesh and steel, I come from Cyberspace, the new home of Mind. On behalf of the future, I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.

Statements like these, of course, do not apply to all conflicts between the Net and state actors, but they do illustrate the sometimes fierce independence of the Internet community. Resistance is much weaker when contract and tort law is implicated and strongest when dealing with regulatory law such as the Communications Decency Act (CDA). In these former areas, the lack of

32. See LAQUEY, supra note 2, at 10-11.
33. See Burnstein, supra note 25, at 83.
34. See David R. Johnson, *Dispute Resolution in Cyberspace* (visited Oct. 15, 1996) <http://www.eff.org/pub/intellectual_prop...online_dispute_resolution_johnson.article>.
35. See Yang, *supra* note 7. This is probably more common among long time users who have grown accustomed to an independent Net. Newcomers of less technical sophistication who value the Net more for ease and convenience than for free speech are less likely to rebel against law and order.
36. *Id.* at 58. Barlow was not alone—more than 5,000 web sites picked up and rebroadcast his message. *Id.*
37. See *supra* notes 3-9 and accompanying text.
38. Resistance to the CDA and other government imposed regulations infringe on the long history of Net independence and hands-off approach adopted by governments. It is thus seen as an intrusion on a core Net principle and therefore evokes a more emotional response. See Alison J. Gordon, *Political Censorship on the Internet Through Government Intervention* (visited Nov. 6, 1996) <http://www-leland.stanford.edu/~ajg/project.html>. Contract and tort law, however, merely enforce obligations between parties in dispute. In the past, such disputes were handled informally by Netiquette but lately such regulation has become
legitimacy does not come from simple blind hatred of state action; rather, it flows from a belief that government law simply does not understand Cyberspace. This lack of future competence stems from the inability of state-based legal institutions to adapt quickly enough to deal with the constantly evolving features of Cyberspace. In other words, government law regarding Cyberspace cannot be seen as legitimate by those whose behavior it seeks to affect because it is ineffective when dealing with the unique legal aspects of disputes in Cyberspace.

E. Effectiveness

Finally, state-based legal authority has some fundamental problems in dealing with the Internet effectively. Physical world courts lack the expertise to deal with Cyberspace and the new and unprecedented problem it presents for law. Furthermore, old problems have new dimensions that challenge existing legal doctrines. For example, traditional legal doctrines related to defamation draw distinctions between private persons who may be unable to access the media to respond to the defamation and public persons who have greater access to mass media. This distinction does not account for the fact that private individuals now have the ability to respond to defamatory statements by using the Internet. The defamed person can simply set up a web page or contact a newsgroup to respond to the attacks. In effect, the defamed person can very quickly and easily become the mass media himself by using the Internet. While traditional legal doctrines could be adapted to function in Cyberspace, the Internet is unlike the physical world in that it is

strained. See supra notes 8-9 and accompanying text.

39. This difficulty may be attributable to the decentralized nature of Cyberspace. States do not control interactions among individual users. Constant interaction on the Net leads to increased generation of new ideas that do not need to be filtered through centralized authorities in order to be implemented. Consequently, activities on the Internet are not tempered by long range thinking and may thus change at the whim of the Net community or at the whim of individual users. In this scheme, states are irrelevant, a broader theme of globalization generally.


41. See Johnson & Post, supra note 13, at 1381.

42. "With an investment of as little as $2,000 and the cost of a telephone line, individuals, non-profit organizations, advocacy groups, and businesses can offer their own dial-in computer 'bulletin board' service where friends, members, subscribers, or customers can exchange ideas and information." ACLU v. Reno, 929 F.Supp. 824, 833 (E.D. Penn. 1996).

43. Id.
rapidly changing and evolving. What is customary practice today may be forgotten tomorrow. Physical world courts rely on precedent and stability; values that are contrary to the flexibility and constant change that occur on the Net. For example, documents published on the Net do not remain fixed and therefore original, but adapt and evolve through constant modification and addition. The publication date is therefore never a fixed time because the Internet offers the unique ability to modify endlessly. Traditional precedent and traditional copyright law cannot exist in such a medium.

State legal jurisdictions also cannot operate at the speed required to satisfy the needs of Cyberspace. The reason for this inadequacy is that speed is valued more on the Net than in the physical world. The ability to communicate instantly means that perceptions of time are shortened and the value of information consequently declines more rapidly than in the physical world. Physical world courts are simply not set up to deal with matters at the speed required by the Internet. For example, consider a copyright infringement case where A transmits a copyrighted document to B for value and B violates the agreement by disseminating the information to others. In the physical world, B makes copies and distributes the information presumably by mail. The physical acts of copying and distributing take time, during which A can obtain an injunction before suffering extensive damage. On the Internet, however, the document can be copied and distributed at a key stroke. By the time the court hears the case, the damage has been done or the advantage has been exploited. Physical world court action requires filing documents, waiting to get on the docket, waiting for a hearing, and going through other procedures that slow down the process and are thus incompatible with the Internet's requirement for speedy action and resolution of disputes.

A system of separate national jurisdictions fails to capture the benefits of the Internet that could be realized by a uniformity of law. A system of

44. See Johnson & Post, supra note 13, at 1375-76.
45. See Yang, supra note 7. From this perspective, civil law countries who do not rely on precedent may be better suited to adapt to the features of the Net.
47. Id.
48. Id. at para. 17-18.
49. Id. at para. 37, 39.
50. Id. at para. 39; Cyberspace Law Institute, The Virtual Magistrate Pilot Project (visited Oct. 15, 1996) <http://www.11.georgetown.edu/lc/ci.html#VM Top>.
separate jurisdictions requires that those wishing to transact business on the Net know the jurisdiction in which they are operating and then draft contract provisions establishing what law should govern the transaction or be left to deal with a conflict of laws problem. Either way, the transaction costs involved in the dealings increase so as to deter a number of marginal transactions that, in aggregate, would be a boon for commerce. A system of individual and separate national laws, therefore, stand in the way of commerce in Cyberspace much as they do for commerce in the physical world.

F. State-Based Solutions

One possible solution to the morass of individual state laws is to develop a conflict of laws regime that adapts traditional choice of law concepts to the realm of Cyberspace. Under such a system, one can first and foremost specify which jurisdiction would govern the dispute. Failing that, traditional notions of choice of law would govern the dispute. For a variety of reasons, however, choice of law on the Net should really be analyzed from the perspective that no contractual provisions have been made. The Net brings relatively inexperienced persons from different jurisdictions together in contractual relationships. Since these persons are inexperienced, they are very unlikely to contemplate that a choice of law clause should be included in the contract even if they were aware that they were dealing across geographical boundaries. Unfortunately, choice of law provisions are inadequate for most Internet transactions.

Choice of law is too clumsy to deal with Internet transactions. First, there are the normal expenses of litigation to determine the appropriate forum for the dispute. Second, assuming a forum decision is reached, it may be unreasonable to expect netizens of moderate means to be able to afford the travel costs associated with hearings abroad. These choice of law problems will also add costs in terms of extra time spent to resolve disputes which, as we have established, are contrary to the Internet need for speedy resolution of

52. Contract scenarios entail understanding various systems of laws and finding which ones are optimal for both parties in the given transaction. Transaction costs in these scenarios are the additional research and drafting costs plus any uncertainty as to how national legal systems will construe such clauses. In scenarios where parties fail to contract concerning jurisdiction, additional costs are incurred in litigating the appropriate forum and dealing with acquiring additional legal advice in the foreign jurisdiction.

53. See TRAKMAN, supra note 40, at 43.

54. See Burnstein, supra note 25, at 97-99.

55. See Johnson, supra note 34.
disputes. Access to law in a choice of law regime, therefore, is just too expensive for the types and numbers of people who will be using the Net in the future.

Some have suggested that Internet service providers could enforce choice of law requirements on persons from other jurisdictions by putting up a notice of jurisdiction every time a contract is made between two parties on the Net. However, this solution suffers from several problems. It does not resolve problems arising when the choice of law policies of providers clash. Further, this solution does not resolve the additional expenses involved with choice of law adjudication discussed above. Therefore, while this suggestion may solve some problems, it is still incomplete.

As the preceding discussions make clear, "the Internet is not merely multi-jurisdictional, it is almost 'ajurisdictional:' physical location, and physical boundaries, are irrelevant in this networked environment in a way that has . . . no parallel elsewhere." We are forced to conclude, therefore, that Cyberspace cannot be treated as spanning several jurisdictions. Rather, Cyberspace can and ought to be treated as a separate and discrete jurisdiction with its own rules and its own laws that reflect its unique character. National legal authority will still have a place in Cyberspace but only as a supplement to what will become the very first system of truly global law. This legal system, which I have loosely labeled the Lex Informatica, is the only rational way of dealing with the unprecedented problems presented by the emergence of Cyberspace. The idea of a Lex Informatica is more than just theoretical, the very beginnings of it are already here.

The remainder of this paper will therefore be devoted to exploring how such a law is being constructed on the Internet and where it may go in the future. The discussion will be divided into smaller discussions about

56. See supra notes 43-44 and accompanying text.
57. See Burnstein, supra note 25, at 100.
58. See Johnson, supra note 34, at para. 36.
59. See Johnson & Post, supra note 13, at 1378-79. The thrust of that article, in fact, is that a number of problems presented by the Internet can be resolved when one conceives of the Net as a distinct place. Id. The problem of notice is therefore solved immediately. One always knows when one has entered Cyberspace. Id.
60. "Global" in the sense that the law does not merely flow from nation-states, but rather from the consent of individual, sovereign citizens.
61. See supra note 1. For the purposes of the remainder of this paper "Net Law" will be used interchangeably with "Lex Informatica". Some authors have also referred to a "Law Cyberspace" See Trotter Harvey, The Proper Legal Regime for "Cyberspace" 55 U. Pitt. L. Rev. 993, 1021 (1994).
development of law in contract law (the true Lex Informatica) and tort law situations.

III. CONTRACT LAW IN CYBERSPACE

The expected commercial boon on the Internet will not occur unless and until barriers to efficient contractual relationships are removed. Otherwise, the transaction costs incurred by dealing with a multitude of physical world jurisdictions will diminish profits and deter a great number of marginal transactions. These costs include: litigation over the proper jurisdiction for the dispute or in drafting a jurisdiction agreement, risk of inappropriate or inconsistent law being applied, loss of time spent litigating, and risks flowing from general contractual uncertainty. The ability to contain these transaction costs will define the effectiveness of any system of law relating to the Net. Fortunately, the world of contractual law has proven remarkably adaptable to new challenges. This section will begin by discussing one already existing adaptation: the Lex Mercatoria (Law Merchant) and will continue by discussing how principles of the Lex Mercatoria might be applied in Cyberspace.

A. Lex Mercatoria

"Perhaps the most apt analogy to the rise of a separate law of Cyberspace is the origin of the Law Merchant’s distinct set of rules that developed with the new, rapid boundary-crossing trade of the Middle Ages." As with the Internet, international trade at the time faced the daunting challenge of dealing with a number of different legal jurisdictions. Contractual provisions could deal with these differences but dealings with new parties required extensive negotiation of what legal system would govern performance under the contract. Transaction costs of dealing with separate jurisdictions therefore

62. See supra notes 54-61 and accompanying text.
63. See supra notes 52-54 and accompanying text.
64. Speed is crucial on the Net. See Part II, Section F. Then again, all merchants, in general, are adverse to long delays in law that promote uncertainty.
65. Other contracts may be put on hold, agreements and deliveries stalled, which helps explain why merchants desire speedy settlements.
66. Johnson & Post, supra note 13, at 1389.
67. See TRAKMAN, supra note 40, at 7-19.
68. See Harvey, supra note 61, at 1021.
strongly discouraged all but the most profitable contracts.69 What was needed was a separate law independent of national law that recognized the needs of merchants for uniformity of law, speed of adjudication, and flexibility.70

The result was the rise of the Lex Mercatoria, or Law Merchant. Under the Lex Mercatoria, special merchant courts adjudicated disputes between merchants by reference to customary trade practice.71 The determinations of these courts were valid and enforceable under national laws because the lords of the day recognized the benefits that would accrue from efficient trade.72 Another reason for the authority of the Lex Mercatoria was that the courts of the day were set up primarily to deal with disputes over land (the preeminent source of wealth at the time) not trade disputes.73 As such, they did not have the expertise to deal with an area that they did not fully understand and that was constantly being redefined by custom and practice.74 Thus, "the people who cared most about their new creation formed and championed this [Lex Mercatoria], which did not destroy or replace existing law regarding more territorially-based transactions."75

These courts functioned in ways that recognized merchant needs. "The emphasis of these merchant courts and the law they applied was a speedy resolution of disputes, an important element when time is money."76 These courts also focused on flexibility in order to accommodate the constantly evolving nature of custom.77 Statutes and precedent therefore had little meaning except as to how they showed custom. To achieve stability while preserving flexibility, custom was required to have been well-established.78 Changes in applicable law attained legitimacy because the judges themselves were merchants who understood how merchant custom was evolving.79

The present day existence of Lex Mercatoria, however, is in some dispute.80 One criticism is that its uncertain doctrines have already been co-

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69. See TRAKMAN, supra note 40, at 15.
70. Id. at 11-13.
71. Id. at 2.
72. Id. at 9.
73. Johnson & Post, supra note 13, at 1389.
74. Id.
75. Id. at 1389-90.
76. Harvey, supra note 61, at 1021.
77. Id.
78. TRAKMAN, supra note 40, at 11.
79. Id. at 15. "Adjudicators were generally selected from the ranks of the merchant class on the basis of their commercial experience, their objectivity and their seniority within the community of merchants." Id.
opted by states. As trade wealth grew to dominate land wealth, state courts began to codify or apply most of the provisions of the Lex Mercatoria. For example, the U.S. Uniform Commercial Code defines customary practices in Section 1-205. Furthermore, the UCC overall recognizes the flexibility necessary for dealings between merchants. Another contributing factor to criticism of the Lex Mercatoria is that it is not definite enough to be considered an independent body of law, but is rather a gap filler.

Whether or not it can properly be considered law in the academic sense, the Lex Mercatoria still has relevance to the dealings of merchants. As already mentioned, the provisions of the modern Lex Mercatoria may find expression in national courts as a system of custom to be looked at when adjudicating disputes. Furthermore, the merchant courts of the Middle Ages have now been replaced by the arbitration panels. While technically these panels are located within national jurisdictions, they are not tied to the laws of the arbitral situs and are therefore free to apply the Lex Mercatoria with relative freedom, although they may be biased against it. International contracts may also specify that the Lex Mercatoria or "customs of international trade" be applied when resolving the dispute to add strength to its legitimate application. When these customs are found to have legal standing, the modern Lex Mercatoria is applied. Judicial standards of review vary but a number of states allow judicial review only where the decision of the arbitrator was an abuse of discretion. Furthermore, virtually all nations recognize and enforce the decisions of international arbitrators in their courts. Thus, in a number of important respects, the Lex Mercatoria still exists and still has real meaning today for international business transactions. The Lex Mercatoria therefore serves as a starting point for how the goals of a Lex Informatica can be attained.

The similarities between the needs for a Lex Mercatoria and the needs of dispute resolution and law in Cyberspace are remarkable.

81. See TRAKMAN, supra note 40, at 23.
82. See U.C.C. § 1-205 (1990)(deferring to "usage of trade" which is just customary practice by another name).
83. For example, see U.C.C. § 2-205 (1990)(comment 2), recognizing how merchants deal.
85. See TRAKMAN, supra note 40, at 42.
86. See DE LY, supra note 80, at 91-92.
87. See id. at 115-16.
88. See generally LEX MERCATORIA AND ARBITRATION, supra note 84.
Many people interact frequently over networks, but not always with the same people each time so that advance contractual relations are not always practical. Commercial transactions will more and more take place in cyberspace, and more and more of those transactions will cross national boundaries and implicate different bodies of law. Speedy resolution of disputes will be as desirable as it was in the Middle Ages!\(^{89}\)

Furthermore, the Lex Mercatoria has the flexibility, the freedom from multiple jurisdictions, the deference to decisions of those who understand concepts the best, and the enforceability required for effective Cyberspace law. The following section will deal with how Net law would borrow the form of the modern Lex Mercatoria. However, it should be noted that the Net might just as easily evolve into something closer to the medieval Lex Mercatoria as to the modern form.

B. Procedure: Arbitration

As experience with the Lex Mercatoria illustrates, contractual dispute resolution free from the restraints of national law is possible through the use of international arbitration. Thus, the substance of a Lex Informatica could gain expression by reference to arbitration in the provisions of contracts conducted on the Internet. The result would be the effective elimination of the multiple jurisdiction problems confronting Net contracts where arbitration is specified. However, problems relating to the Internet’s ability to bring international transactions to those of moderate means and sophistication remain.\(^{90}\) A number of persons on the Net who are not sophisticated enough to specify an arbitration arrangement will be left to deal with the morass of conflict of laws.\(^{91}\) A number of more moderate Net transactions will thus be missed by the provisions of a Lex Informatica.\(^{92}\) Further, arbitration will not alleviate the barrier imposed by travel costs to the site of arbitration for

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89. Harvey, supra note 61, at 1021.
90. See supra notes 54-61 and accompanying text.
91. Id.
92. A number are likely to be purchases of information and software from dealers who are sophisticated enough to include an arbitration clause. However, there is a substantial chance that the contractual provision would go unenforced as a contract of adhesion if the terms were unreasonable.
resolution of the dispute. Addressing these problems goes beyond the well-tread grounds of the Lex Mercatoria.  

Problems relating to failure to specify arbitration can be eliminated, however, through contractual relationships with Internet access providers. An initial requirement of accessing Cyberspace is that the user be connected to the Internet through an access provider. The system operators (or sysops) of these access providers can and do specify appropriate behavior through Acceptable Use Policies (AUPs) incorporated into the service contract. At a minimum, these AUPs prohibit certain users that will damage or slow down the system; however, a number also specify appropriate types of behavior online as a condition to continuing access. These contracts could require that users submit to arbitration of disputes as a condition of access to the Internet. Reciprocal agreements could be made with other sysops regarding where to arbitrate disputes. Thus, a user on system A and a user on system B who are in a contractual dispute would be required, by their respective AUPs, to arbitrate the dispute in forum C unless another forum was specified in the contract. If the sysops did not have reciprocal arbitration agreements, a message could flash on the screen to serve notice to parties that are about to contract of this status. Such notice would at least force the parties to consider specifying a forum. Additionally, there might be a potential for Net-wide agreements that specify a default jurisdiction in the event of a dispute. Sysops would have an incentive to impose these kind of arbitration rules on parties as a way of protecting its users from difficult disputes and complex choice of law rules. Sysops might prefer these arrangements to outside interventions. Additionally, it appears that such a system could work: “Experience suggests that a community of online users and service providers is up to the task of developing a self-governance system. The current domain name system evolved from decisions made by engineers and the practices of Internet service providers.  

93. The Lex Mercatoria generally deals with contracts referring to principles of international trade that specify arbitration of the dispute on those principles. However, it may occasionally be brought into state courts as a gap filler.  
94. See Johnson & Post, supra note 13, at 1388.  
95. See J.E.J. Prins, Contracting in an On-line Marketplace, in EMERGING ELECTRONIC HIGHWAYS, supra note 1, at 139, 145 (Victor Bekkers et al. eds., 1996); Burnstein, supra note 25, at 99-100.  
96. Burnstein, supra note 25, at 99-100; Post, supra note 19, at par. 12. There is no requirement that service providers act like common carriers. See Yang, supra note 7, at 59-60.  
97. See Harvey, supra note 61, at 1030.  
Finally, netizens might be more likely to consent to the jurisdiction of an arbitrator regardless because arbitration offers the superior option of having the provisions of a Lex Informatica apply to the dispute. They may also prefer Net arbitration because it might be much more convenient than conventional arbitration or national courts as discussed below.

Problems relating to travel to and from the place of arbitration could be alleviated if the arbitration itself occurred on the Internet. "Virtual Arbitration", as it is called, is in fact already a reality on the Net. This virtual magistrate project, set up by the Cyberspace Law Institute, will resolve disputes voluntarily submitted to it; however, the main thrust of the project at this stage is to prove that it is technically possible to resolve disputes in Cyberspace. This project may pave the way for much more ambitious applications. Such an approach has numerous advantages over conventional arbitration. First and foremost, the approach eliminates the expense of dealing with distant sites of arbitration. A person would need only to go online to have his dispute resolved. Second, virtual arbitrators, because they are as free from state jurisdiction as Cyberspace is itself, are more likely to feel free to apply a Lex Informatica should one come into existence. Finally, virtual arbitration is likely to be much faster than conventional arbitration since there is no wait to obtain an arbitrator and no need to make travel arrangements. Furthermore, arbitrators on the Net will be more geared to Internet specific problems such as those relating to the concept of cybertime than terrestrial arbitrators would be. In conclusion, the procedural problems of dispute resolution on the Net can and will be solved by arbitration that is both compulsory and Net-based. But what doctrines will the arbitrators apply?

C. Substance

Custom is the foundation of the Lex Mercatoria, so naturally custom will be the essential source of law in the Lex Informatica. The Net actually has a
long history of customary rules, often called “netiquette” or “nethics.” Early on, these customary rules were enforced by veteran netizens against offending “newbies” initially through terse warnings, and later exclusion from popular newsgroups or bulletin boards. The development of netiquette and nethics illustrates how the interactive capabilities of the Internet help develop customs more quickly and clearly on the Net than in the physical world. Net custom may start as a posting on a discussion group, then a response may be posted that criticizes and expands on that idea until it has been discussed and rehashed over and over again. The result is a clear concept of how things ought to be on the Net.

Custom on the Net could start as a theoretical posting on a newsgroup or it may start as an arbitrator requesting opinions on an idea. For example, netiquette probably started as a few ideas in a discussion group that has since been essentially “codified” on various web pages. Because of the adaptability of the Internet, these web pages can constantly be modified to reflect the latest opinions of Internet principles. Therefore, no matter when one looks the document up, it reflects the current opinion of the authors. By contrast, in the physical world, legal ideas develop through essentially one-sided discussions in law journals. However, the turnover for these journals, no matter how fast, cannot match the instant publishing on the Net, nor can it match the flexibility of the Net that allows the publisher to change the work, thus reflecting his current opinion. Furthermore, e-mail and postings react much faster than printed opposing articles, adding to the interactive aspects of Net custom. Custom, of course, could still evolve through transactional practice, but because the Internet allows for many more transactions, custom would tend to develop much faster than in physical world contracting. Furthermore, those netizens who wish to advocate a custom would find fewer
barriers to publishing their ideas on the Net. This creates a side benefit of lower entry costs for those with practical experience, thus bringing more practical expertise into the Lex Informatica. The advocate of a custom that works especially well on the Net could post it to one newsgroup or web page for others to copy and use. Such discussion groups might actually provide better evidence of custom than in the physical world because the customs are both committed to writing and produced by focused interactive discussion, whereas physical world customs are often practiced but never discussed or written down. Of course, the ultimate judgment on which customs should be applied must rest within the discretion of the arbitrator. To maintain the stability and integrity of discretion based decisions, a judicial review process within the Net itself might be established. To ensure that the flexibility of the Net law does not lead to uncertainty, arbitrators who too easily recognize custom or who too often bow to popular pressure could simply be removed.

Finally, evidence of custom could be found in the AUPs of many sysops. These sysops, who have expertise in what works on the Net, might incorporate certain types of customary practices within their AUPs. If not changed by the contract or refuted by other newsgroups, parties that do not expressly refute these policies might be found to have implicitly adopted them as practice. As evidence of this possibility, netiquette type provisions are already a part of some of these AUPs.

Precedent, as such, may continue to exist in the form of an on-line database that could be referred to by those wishing to contract or by arbitrators wishing to make decisions. But given the highly interactive and changing nature of Cyberspace, binding precedent may confine rather than stabilize Net transactions. As you may recall, courts applying custom as Lex Mercatoria kept trade practice stable by refusing to recognize trade practices that were not well-established. Net custom, of course, must be judged by a different

115. See David R. Johnson, The New Case Law of Cyberspace <http://www.eff.org/pub/Intellectual_property_cyber_casewlaw_johnson_article>. The thrust of this article is that discussion group decisions will form the new case law of Cyberspace.
116. See Johnson & Post, supra note 13, at 1388.
117. Although users may be unlikely to read and understand these provisions, they will probably have a better understanding of the AUPs from sheer exposure than they would have of physical world law.
118. See Rinaldi, supra note 8.
119. See Johnson, supra note 115.
120. Id.
121. See supra note 84 and accompanying text.
standard because of the effects of cybertime. Specifically, conditions on the Net change so rapidly and so many transactions might occur that a well-established custom may be weeks old, whereas physical world courts might require a custom to be five or six years old before they recognize it. Perhaps virtual arbitrators could establish a set of Net contract customs on a web page that would receive comment and criticism from academics and contract practitioners. This "Statement of the Lex Informatica" could constantly be updated by a panel of arbitrators with a view toward past decisions and comments. At any given moment, the Statement would reflect the current prevailing opinion of Internet law. One could never contemplate a Restatement of the Lex Informatica because the law would constantly be restated on the Net. As with any physical world court, the law could change with the next arbitration opinion, but there would be a strong pull toward stability from merchants who need to plan ahead and from netizens who demand fairness from decision to decision.

D. Enforcement

Coercive force, to a large extent, still rests with the state and therefore a Lex Informatica must still deal with physical world legal jurisdictions. The decisions of physical world arbitrators and virtual arbitrators that apply the Lex Informatica most likely can be enforced within a state. Arbitration decisions relating to international business transactions have been enforceable in the past with a minimum of judicial review. There is no reason virtual arbitration should be treated any differently. The only material difference is that the arbitrators are not actually facing the litigants. Furthermore, states will be anxious to encourage enforcement as they have with the arbitrations of the Lex Mercatoria because of their desire to see the benefits of online commerce.

122. See Katsh, supra note 46.
123. See Johnson, supra note 115.
124. Id.
125. See Johnson, supra note 115 (explaining that the Net is unlikely to be precedent bound even in light of the need for stability and legitimacy that precedent provides).
126. See supra notes 85-88 and accompanying text.
127. Id.
128. See supra notes 3-7 and accompanying text.
What is uncertain is how physical world jurisdictions will relate to AUPs that set up compulsory arbitration. So long as service providers are not considered "common carriers", their ability to specify terms of service or drop service for failing to accept arbitration will likely not be questioned. However, with the increasing importance of the Internet in our daily lives, it may be only a matter of time before sysops are considered common carriers. Furthermore, terms of AUPs may not be enforceable if they are interpreted by physical world courts as contracts of adhesion. Both of these potential problems may not affect AUP arbitration clauses if the terms of the clauses are "reasonable". Judging by the benefits of online arbitration accruing to participants, there may be no reason to strike down such provisions as unreasonable. This is one area where physical world jurisdictions could seriously impair Net law. If arbitration cannot be mandated, then we encourage wasteful forum shopping, and inefficient or unrealistic judicial determinations. With international Net contracts, States are better off letting the experts on the Net handle the disputes.

IV. TORT LAW IN CYBERSPACE

Another area seemingly ripe for the application of a Lex Informatica is cyber-tort. As with contract law, governments want to clear up this area of the law to make way for Net commerce. Big business is likely to stay away if it cannot secure the value of its information and privacy. "As entrepreneurs race to peddle their wares along the information superhighway, court battles are erupting over legal issues as diverse as trademark and copyright infringement, jurisdiction, consumer fraud, e-mail privacy and vicarious liability of online services and computer bulletin board operators." Furthermore, netizens themselves are crying for refuge from a deluge of new users who do not respect netiquette.

129. See Yang, supra note 7.
130. Id.
132. See supra notes 3-7 and accompanying text.
A. Special Problems of Cyber-torts

The global dimensions of certain cyber-torts will make national solutions unworkable. Multiple offenders in multiple jurisdictions would make the process excruciatingly time consuming and expensive.\textsuperscript{133} In many cases the potential defendants’ pockets are not deep enough to justify the slow and expensive process of physical world courts.\textsuperscript{134} Plaintiffs are also often left without a clear forum or effective law since many cyber-torts occur without prior contractual relations that would settle issues of jurisdiction and applicable law.\textsuperscript{135} Physical world legal authorities also do not have any expertise to use in beginning to address the Cyberspace dimensions of these new problems.\textsuperscript{136} Finally, tort law must deal with the possibility of ghost online identities hiding real people.\textsuperscript{137}

B. Net Courts?

To solve these problems, a system of “virtual courts” might be set up to evaluate and enforce tort actions between participants in Cyberspace.\textsuperscript{138} The system would operate very much like contract arbitration, however, the hearing would include an online jury and more extensive evidentiary and discovery rules.\textsuperscript{139} The resulting punishment would be the only one feasible at this point: banishment of the offending users either from Cyberspace or from an area of Cyberspace.\textsuperscript{140} Participation in these virtual courts would be optional for plaintiffs but mandatory for defendants. This would allow plaintiffs to have a virtual forum in cases where awarded damages are likely to be small and the costs of settling jurisdictional issues are high. Where damages are extensive and it is economically feasible to pursue physical world

\begin{itemize}
\item \textsuperscript{133} See Harvey, supra note 61, at 1052-53.
\item \textsuperscript{134} See Resnick, supra note 131, at A21.
\item \textsuperscript{135} Id.
\item \textsuperscript{136} “In some cases, the issues are so new that they lack any sort of judicial or legislative signposts ...
\item \textsuperscript{137} See supra notes 19-21 and accompanying text.
\item \textsuperscript{138} See Harvey, supra note 61, at 1052. When the party affected is outside of Cyberspace, national law is more likely to be the appropriate venue. \textit{Id.} at 1054-55.
\item \textsuperscript{139} \textit{Id.} For some idea of how a virtual court might be set up, see one that already exists on the Internet as a form of entertainment without binding force. See Sandbox Entertainment Corp., \textit{Court of Last Resort} (visited Dec. 4, 1996) <http://www.sandbox.net/court/pub-doc/about.html>.
\item \textsuperscript{140} See Harvey, supra note 61, at 1053.
\end{itemize}
court actions, plaintiffs should be allowed to do so.\textsuperscript{141} Since there are no government regulations of sysops, offending users would have no choice but to submit to the judgments of these virtual courts.\textsuperscript{142} As with contract law, the substance of the tort Lex Informatica would consist of custom gleaned from discussion groups, prior decisions, the AUP of the offending user,\textsuperscript{143} and through a "Statement of the Lex Informatica" published on a virtual court home page. This would allow the law to reflect what is or should be common practice of the Net. The danger here, of course, is that the use of custom may be too flexible and open for compulsory law with serious consequences. The solution to this problem would be to allow a more extensive physical world appeals process and to require more rigid adherence to well-established tort doctrines as well as a higher standard for recognizing a Net custom. The rules of netiquette are especially useful here because they specify how users should treat each other in Cyberspace and because they are especially well-established.\textsuperscript{144} Ghost identities could be dealt with by having rights and obligations attach to the user's online identification and by requiring each of these identities to correspond to real people. A Cyber-notary service already exists for verifying contract identities through the use of digital signatures and key-cards.\textsuperscript{145} Expanding such a service to allow service providers to check IDs of new users should be fairly easy.\textsuperscript{146} "To be sure, such a court system and its threat of expulsion would require a great deal of international cooperation among a wide array of groups. Yet the cooperation would be cost-effective if the resulting structure served to resolve many disputes over many years."\textsuperscript{147}

V. CONCLUSIONS AND EVALUATION

The challenges faced by physical world law when it deals with Cyberspace can be eliminated to some extent at least by the implementation of the principles embodied by the Lex Informatica. The ends of power, effects,
notice, legitimacy, and effectiveness that justify and explain legal authority that have not been met by jurisdictional law can be met by Net law.

A. Power to Enforce Law

In contract law, self-regulation on the Net does not give us much in terms of power over territory. However, sysops do wield some powers in Cyberspace that states do not. By controlling access points to the Internet, sysops can dictate AUPs that govern dispute resolution and behavior in Cyberspace. To compliment this, sysops wield a very effective punishment in banishment. However, at least as far as contracts are concerned, enforcement power still rests with those who can seize property and garnish wages to satisfy judgments. That is to say, states must still play a role in this new regime because they monopolize the exercise of police power within the physical world. On balance, therefore, the Lex Informatica does not yield any more power benefits than national law in the realm of contract.

With tort law however, Cyberspace law is superior to national law. Unlike states, which have numerous Cyberspace entry points, sysops have only a few, all requiring a password. Unlike states, their boundaries are based on Net logic not physical boundaries. A known “offender” can be kept out simply by denying access to his password and user ID. There might still be some problems with stealing IDs, but certainly these holes in the jurisdictional wall are relatively small compared to the floodgates at national boundaries.

B. Effects

While the effects of certain behavior on the Internet spread throughout individual jurisdictions, they will be more or less confined to Cyberspace. Net law, unlike national law, reaches throughout the entire scope of the Net, thus capturing the effects of offending behavior.

148. Could it be possible for some Internet authority to seize electronic assets that are located online in order to satisfy a judgment?
149. See Johnson & Post, supra note 13, at 1388.
150. Id.
C. Notice

Persons in Cyberspace are virtually unaware of what physical world jurisdiction they are in when acting in Cyberspace. A person knows, however, when they enter Cyberspace. Virtual boundaries, if any, can and do supply notice that special rules may apply in the form of warning messages displayed as one enters the restricted area.

D. Legitimacy

The Lex Informatica will be recognized by netizens as more legitimate than jurisdictional law because it reflects their customs, because it reflects what works in Cyberspace, and because netizens have a greater opportunity to interact with and create Net law than physical world law. Net law is seen as legitimate because it represents the sum product of an intense interactive discussion regarding the proper form of law. The Lex Informatica therefore has the consent of the governed because it is a product of the people’s interaction with it. As discussed, netizens feel a stronger connection to Cyberspace than they do to some foreign jurisdiction trying to assert control over the dispute.

E. Effectiveness

Unlike state law, Net law is made by those who understand how Cyberspace works. The law gears itself in terms of speed, flexibility, and operation to the realities of a constantly evolving Internet. State law, by contrast, operates too slowly for cybertime, is bound by the rigidity of precedent, and contains doctrines formed before the Net that do not fit the special aspects of business in Cyberspace. The Lex Informatica is superior in that it represents the sum total of opinions of those who have expertise with the legal aspects and needs of the Internet.

F. The Future

The Internet, because it defies national boundaries and changes the way we communicate, poses special problems for geographically based jurisdictions. These problems can be solved only by the evolution of Lex Informatica, a Law Merchant of Cyberspace. In a number of respects, the
procedural and substantive framework for this law is already in place. Initially, the Lex Informatica will be confined to contracts that specify its application. Eventually, however, the necessities on Net commerce will push the Lex Informatica beyond mere specification and into the realm of default contract rules. Unless states find new ways to deal with the expanding problems presented by cyber-torts, the Lex Informatica might extend even beyond voluntary obligation. Criminal penalties are still beyond the reach of Net authorities and are likely to remain there unless police powers are conferred to them by the state. Even then, constitutional provisions are likely to keep Net authorities out of most, if not all, criminal matters.\footnote{Mere administrative punishments, with small fines, would be the only exceptions.} For now, the work of the Lex Informatica remains that of building procedural frameworks, and of expanding and clarifying the substance of the law to be applied.