DESIGNING TAX POLICY FOR THE DIGITAL BIOSPHERE: HOW THE INTERNET IS CHANGING TAX LAWS

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I. INTRODUCTION

The Internet is driving significant changes to aspects of United States domestic and international tax policy despite the initial insistence by tax authorities that traditional tax laws would suffice to address emerging challenges. [FN1] This Article discusses how these traditional tax laws are often unsuitable when applied to economic activities that are tied to the Internet. But, how should tax laws evolve to confront the new challenges?

[p. 334] In order to answer this question, the Article develops a theoretical legal model to assist in understanding the appropriate role of tax law with respect to reform efforts directed toward Internet activities. This legal model--called the digital biosphere--examines how law, traditional "real world" norms, cyberspace and the network interact with each other in a complex and interdependent manner. The appropriate role of tax law, it is argued, is to strive to protect real world norms (for example, the desire to maintain neutral tax treatment between traditional commercial activities and e-commerce) by aligning legal rules with the nature of the network, without overly intruding on cyberspace values (for example, the desire to maintain data privacy for online transactions).

This Article applies the digital biosphere model to two recent tax reform efforts. First, this Article discusses how state and local governments are striving to simplify and unify their different sales tax systems through the Streamlined Sales Tax Project ("SSTP"). [FN2] Under traditional tax principles, these governments pass laws to force retail outlets to charge, collect and remit sales taxes on the purchase of goods at the retailers' establishments. [FN3] But, state and local governments are legally prohibited from imposing their sales tax collection obligations on an out-of-state business unless this business maintains a physical presence within the taxing state. [FN4] This is a worrisome result because the Internet enables online Web site sales from companies based outside of the state where the buyer is located (i.e., the location of consumption). [FN5] As a result, state governments are striving to unify their sales tax systems in order to reduce costs associated with complying with different state and local sales tax laws; this will permit these governments to extend their tax jurisdictions over businesses that are physically located outside of their borders. An SSTP pilot project involving four states is currently testing and implementing an automated Internet-based sales tax collection system [p. 335] to assist in enforcing the new laws. The SSTP reform efforts, it is argued, appropriately address the challenges presented by Internet commerce.

Second, this Article discusses and analyzes reform efforts by the member countries of the Organization for Economic Cooperation and Development ("OECD"), including the United States, directed at the application of income taxes to cross-border e-commerce transactions. [FN6] Traditional international income tax laws also call for a physical presence test before a country is permitted to subject a cross-border transaction to its income tax. [FN7] Tax authorities have more stubbornly held onto traditional tax principles by proposing to permit countries to tax profits associated with computer servers (i.e., computers that are networked to the Internet). [FN8]

However, taxpayers can locate their servers in low tax countries or, worse, tax havens (i.e., countries that do not impose any income taxes). [FN9] The mobile nature of servers and related income-producing computer code has significantly diluted the traditional physical presence test; hence, tax authorities may have inadvertently embarked on tax reform that promotes an economic presence test based on the location of production. [FN10] These reform efforts may lead to adverse consequences for many governments as companies shift e-commerce profits to low or nil tax jurisdictions.

Part II sets out the theory underlying the digital biosphere. The Internet is divided into two components for analytical purposes: the network (i.e., the physical infrastructure of the network and related software protocols) and cyberspace (i.e., the emerging value-laden commercial and communication forums that have arisen as a result of the network). The global, [p. 336] intangible and generally anonymous nature of the network, combined with digital goods and information economics, presents a number of significant challenges to tax authorities. Further, an efficient tax solution, such as an Internet-based automated tax collection system, may be unacceptable to the extent that it harms emerging cyberspace values (for example, privacy and anonymity). Drawing loosely from concepts developed by the late Russian scientist Dr. Vladimir Vernadsky, the role of law, it is argued, is to co-exist in a dynamic equilibrium with real world norms, the network and cyberspace within the digital biosphere. [FN11] Part III reviews how traditional tax laws that emphasize control over geographic space cannot effectively confront challenges presented by e-commerce activities. The Article considers two examples of this phenomenon. First, a case study reviews the tax planning efforts of Wal-Mart Stores, Inc. to reduce the sales tax burden on sales by its affiliate, Wal-mart.com. [FN12] Second, the Article considers the impact of a recent decision by tax authorities to permit the taxation of profits emanating from computer servers for international income tax purposes. [FN13] Part III concludes that traditional tax principles must evolve in many circumstances to address the challenges presented by the Internet; otherwise, real world norms (for example, the desire to collect tax revenues to pay for public goods) will be harmed. Part IV discusses how the digital biosphere is engineering radical tax policy change in the sales tax and international income tax areas. Tax authorities are moving away from physical presence requirements to economic presence tests, combined with an allocation of tax jurisdiction to the location of consumption (in the context of consumption taxes, such as United States sales taxes) or to the location of production (in the context of international income taxes). This process is also triggering the harmonization (i.e., unification) of state sales tax bases and a resulting reduction in fiscal sovereignty for state and local governments; the Internet has accomplished in less than ten years what decades worth of reform efforts under federalism could not achieve. Tax authorities are also recognizing the need to "fight fire with fire" by promoting and encouraging the use of Internet technologies to automate the tax collection process. [FN14]

[p. 337]

II. THE ROLE OF LAW WITHIN THE DIGITAL BIOSPHERE

This Part discusses the role of tax law with respect to Internet activities. The goal is to provide a broad theoretical perspective to the tax issues that are addressed in a more technical fashion in the following two Parts. The Internet is essentially a "network of networks" [FN15] that is comprised of the physical infrastructure of the network and the more ethereal cyberspace. Conceptualizing the Internet in this manner permits a distinction to be drawn between the network and cyberspace, a new forum enabled by the network, but that exists in some senses outside of the network. Part II.A focuses on the challenges of taxing e-commerce presented by the network. [FN16] Part II.B attempts to unify different viewpoints concerning the nature of cyberspace and offers a definition for this new space: socially constructed Internet forums for different forms of commercial and non-commercial interaction. Part II.C presents a legal model for the Internet called the "digital biosphere" to assist policy makers in understanding the relationship between tax law and the Internet. Finally, Part II.D discusses the appropriate role of law within the digital biosphere.

A. THE NATURE OF THE NETWORK

1. Global Forum

The network is a borderless medium that, in many contexts, ignores [p. 338] sub-federal or federal geographic jurisdictions. The United States Treasury Department has noted the difficulties associated with taxing economic activity that take place over a global network that defies any centralized form of control: "From a certain perspective, electronic commerce doesn't seem to occur in any physical location but instead takes place in the nebulous world of cyberspace. Persons engaged in electronic commerce could be located anywhere in the world and their customers will be ignorant of, or indifferent to, their location." [FN17] As indicated by the previous passage, there does not necessarily have to be any geographic connection between the producer of e-commerce goods or services and the consumer of these goods or services. This ease of accessing distant markets facilitates remote economic activity. [FN18] For example, a small online business in Ireland can sell its goods or services to an international audience by simply posting a Web page that can be viewed by customers located anywhere in the world, as long as the customers have access to the Internet. The increase in remote activities creates problems for local, state or federal tax authorities that may have difficulties imposing (or enforcing) their taxes on economic activities that take place outside of their geographic jurisdictions.

Further, the Internet is sometimes referred to as an agent of disintermediation because it removes the necessity for certain physical intermediaries that were traditionally required to enable transactions. [FN19] For example, traditional bookstores are no longer required to sell books to end consumers; online bookstores can replace this intermediary. The problem is that tax authorities have often depended on these physical intermediaries to charge, withhold and remit taxes or to maintain records. [FN20] As will be subsequently discussed in the context of state sales taxation, intermediaries, such as the traditional bookstore, are required by law to charge state and local sales taxes on the sale of in-state products and remit these tax revenues to the relevant government agency. [FN21]

Are there any limits to the global nature of the network? Two qualifications bear mentioning. First, the characterization of the network as a global forum may be somewhat misleading because Internet usage is currently concentrated in developed nations. [FN22] As exemplified by these figures, [p. 339] the countries located within poorer regions with minimal telecommunications infrastructure will likely continue to rely on traditional "unwired" economic activity, at least for the foreseeable future. [FN23] Beyond social concerns such as the growing international digital divide, [FN24] the fact that e-commerce transactions will likely become prevalent only between certain trade partners raises the issue of whether two different tax policy approaches are required with different policies for heavily "wired" trade partners. [FN25] In addition, tax principles that allocate tax revenues to developing nations who import e-commerce goods and services will provide a powerful incentive for these nations to fund the necessary public works investment to build up the missing telecommunications infrastructure. [FN26] Second, while the Internet and associated economic activity are often portrayed as global in nature, the producers of the underlying goods, services and information may still need to be clustered within certain countries or within specific regions within countries. For example, the United States produces the majority of the world's e-commerce goods and services. [p. 340] [FN27] Tax principles that focus taxation of profits on the location of production of e-commerce goods and services (for example, where a business is based or incorporated) will tend to allocate revenues to the United States and other net e-commerce exporting nations. [FN28] In addition to differences among countries, regions within certain countries seem to attract concentrations of high technology companies. [FN29] These high tech clusters may have arisen as a result of the need for a critical mass of human and financial resources in the same area, which, in turn, arguably promotes a number of efficiencies in the allocation of these resources. [FN30] This clustering phenomenon has important tax implications for federal countries, such as the United States or Canada, which have rules that allocate revenues from taxing profits depending on the location of certain factors (for example, salaried employees or physical assets) in each state or province. [FN31]

2. Intangible

The network encourages the transmission of digital goods, services or information. This process is promoted by the convergence of different types of media--data, voice and video--on one global network, the Internet. [FN32] Tax rules continue to focus on the physical world and have not yet [p. 341] addressed many of the challenges posed by this new world of bits and bytes. [FN33] Further, the different forms of media travel through the network in a decentralized manner until the final destination is reached. Consider the transmission of an e-mail message: the message is broken up into millions of packets (bits of information) that travel throughout the network in diverse paths only to be re-assembled at the final destination point. [FN34] An e-mail sent from Kingston, Ontario to San Diego, California could hence be partly routed along the east coast of the United States and partly on the west coast of the United States, depending on traffic congestion on the network. Accordingly, there is no real "choke point" for data flows over the Internet; data simply takes the most efficient route possible over the network. [FN35] The absence of any real control point, along with the disintermediation process discussed previously, makes it more difficult for tax authorities to scrutinize or verify economic activity and resulting taxable profits or sales. It also suggests that technological solutions, if any, will likely have to employ a decentralized approach, such as the use of online intermediaries that participate in each e-commerce transaction that attracts taxation. [FN36]

Finally, digital commerce operates on distinct economic principles, in certain circumstances, that may not yet be fully appreciated by tax authorities. A body of economic literature scrutinizes the economics of information goods. An information good is anything that exists in digital form, such as a Web page or a digital e-commerce good or service. [FN37] The literature [p. 342] discusses two principles relating to information economics: (i) the cost of creating an information good is fixed and can be quite high (for example, the cost of writing and producing a new song); and (ii) the marginal cost of distributing an information good approaches nil because digital goods and services can be copied and transmitted for almost no cost (for example, the cost of copying and transmitting a digital file of a song--an MP3 file--to a consumer located anywhere in the world is almost zero). [FN38]

From a tax perspective, this economic theory seems to suggest that information goods that attract taxation may shift to the lowest tax jurisdiction because it is almost costless to do so. As will be subsequently discussed, information goods can include information goods that produce income. The income produced by intangible assets, such as Internet computer code (for example, a Web page), should, at least in the long run, also flee to tax havens or other nations that impose low or nil income taxes. [FN39] Reduced distribution costs and the disintermediation process discussed previously present a number of challenges to regulators outside of the tax arena, especially surrounding the protection of rights in digital works. [FN40] The fact that information goods can be replicated in perfect copies and shipped to individuals for negligible cost has arguably resulted in the dilution of ownership rights of certain copyright holders. Consider the digital music example. Unauthorized trade in copyrighted musical works is currently prevalent on the Internet with no clear legal solution on the horizon. [FN41]

In the past, the distribution of musical works was spread among different commercial actors, including record companies and music stores. But now these distribution costs can be passed on to the end consumer who purchases a personal computer or some hand-held device to store and listen to her music (for example, an MP3 player). [FN42] Industry members are concerned [p. 343] that certain devices (for example, a CD burner) will encourage additional unauthorized trade in copyrighted music; it is argued that such devices contributorily infringe on copyright by encouraging consumers to swap their digital music files. [FN43] In the United States, legislation was passed that forces manufacturers or importers of "digital audio recording devices" to pay a royalty of two percent on the sale of any of these devices. [FN44] The revenues collected through this royalty are first sent to the Copyright Office, then to the Treasury Department, [FN45] and are finally allocated to the copyright owners [FN46] who arguably suffered revenue losses due to copyright infringement. This sort of approach is generally not considered a tax measure, but, from an economic perspective, the royalty has the same impact as any tax revenue raising measure. For example, the royalty on a digital audio device will be passed on to the end consumer through higher prices to the extent that the product cannot be substituted for a similar product. [FN47] As subsequently discussed, tax authorities may begin to rely on similar measures if they feel that they will lose revenues due to their inability to effectively tax many Internet transactions. For example, if state governments are unable to assess sales taxes on remote vendors, then they could consider imposing a special excise tax on computer networking equipment. [FN48]

3. Anonymous

In addition to the lack of geographic boundaries and the proliferation of digital goods and services, the network--as it is currently constituted--makes it possible for Internet users to be shrouded in anonymity in many circumstances. [FN49] The decentralized and global aspect of the Internet makes it difficult to discover the identity or geographic location of economic participants, [p. 344] especially in the business to consumer segment of e-commerce. [FN50] The anonymous nature of the network, hence, permits taxpayers to leave scant evidence of their participation in economic activity. In short, the anonymous nature of the network frustrates attempts by tax authorities to track and audit taxpayers.

Consider the eBay example. eBay is an online auction that enables individuals and businesses to offer and bid on almost any asset that they want. [FN51] At the time of this writing, eBay had roughly thirty million registered users and lists millions of items for sale daily. [FN52] In 2000, auctions generated more than five billion dollars in sales. [FN53] Individuals and businesses that use this auction service typically only identify themselves through an email handle such as "proauction@aol.com." The sale of all property (commercial and non-commercial) generates capital gains to the seller and must be included in the gross income of the seller. [FN54] Accordingly, all eBay sellers must self-assess the amount of each gain on the sale of each item and report these amounts to the government on their annual tax return. While no data appear to be available on compliance rates for such online services, it may be the case that eBay users rarely disclose to the government an accurate reporting of their sales income. [FN55] These users may be under the impression that the United States Internal Revenue Service ("IRS") will not likely be able to trace the sales back to the users as a result of the anonymous nature of the Internet. [FN56]

[p. 345] In addition, the anonymous nature of the network may make it more difficult for tax authorities to audit e-commerce vendors in many circumstances. The Australian Taxation Office conducted an audit of Australian companies with Web site operations that purported to be physically based within Australia. [FN57] The tax authorities could not identify the location of fifteen percent of the businesses. [FN58] In one case, tax authorities literally came across a hole in the ground where the business was supposed to be conducting its operations. [FN59] Partly as a result of these identification problems, the Australian Tax Office proposed a registration system whereby Internet businesses would have to register their online address (i.e., their Internet Protocol ("IP") address) as well as the physical location for their main office. [FN60] Anonymity, coupled with greater access to information concerning tax evasion strategies, exacerbates potential revenue losses resulting from dishonest taxpayer activities. [FN61] Tax evasion can be accomplished by refusing to divulge sources of income to the relevant government entity. A nation's tax system is partly protected by the costs and difficulties associated with engaging in tax evasion behavior. Tax evasion generally requires: (a) information on how to evade the reach of a tax authority; and (b) a low cost intermediary to enable the evasion. The Internet facilitates tax evasion by providing these two factors. In this context, the IRS has identified two worrisome tax evasion trends related to the Internet. First, the IRS has targeted United States residents who employ offshore tax havens (i.e., foreign countries that do not impose any taxes) to hide funds and income from the government by launching one of the largest audit investigations in the history of the organization. [FN62] The government estimates that approximately three trillion [p. 346] dollars in assets are currently

hidden away in tax havens, protected from outside scrutiny by bank secrecy laws within the tax havens. [FN63] One of the factors that led to a greater use of offshore havens to evade taxes is the proliferation of Web pages that discuss the ease of setting up an offshore bank account or holding company along with step-by-step instructions on how to transfer amounts offshore. [FN64] A review of Web sites promoting offshore tax havens revealed that over eighty percent of the sites promoted illegal tax evasion. [FN65]

Second, a tax protest movement within the United States has gained momentum, in part, as a result of Web sites that advertise or discuss "legal" tax evasion strategies. [FN66] The Web sites generally advocate two positions: (a) income taxes are unconstitutional within the United States and/or (b) there is no specific legal authority that mandates the payment of income taxes. [FN67] Both positions are patently false. [FN68] The IRS has increased its investigations into these Web sites [FN69] and has warned tax protesters that courts are imposing stiff penalties on frivolous tax protest cases. [FN70]

4. Rapidly Evolving

The nature of the network is also indeterminate in the sense that the evolution of its physical infrastructure and software protocols is unpredictable. [p. 347] The Internet is still in its infancy, and tax authorities must take into account the fact that the Internet, like any newborn, may grow in unpredictable and possibly even undesirable ways--from the perspective at least of the parent/tax authority. [FN71] The direction of this evolution is based on a diverse set of factors, including market demand (potential or real) for new goods or services, the development of new technologies, government regulations, industry self-regulation and supervision from various nongovernmental international organizations, such as the Internet Company for Assigned Names and Numbers ("ICANN"), that determine technical requirements for the network. Consider the example of ICANN, which governs the allocation of top-level domain names (for example, ".com" and ".edu") registrations for the Internet. [FN72] Domain names associate words (for example, Amazon.com) into related numeric destinations (i.e., Internet Protocol addresses), which are critical to accurately route traffic throughout the Internet. ICANN has recently added several top-level domain names (for example, ".biz" and ".info"). [FN73] Other companies question why ICANN alone should be permitted to govern the allocation of top-level domain names. For example, New.net has recently begun permitting individuals and businesses to register a series of new top-level domain names (for example, ".law" or ".tech"). [FN74] Internet users must change the configurations on their Web browser in order to access these new domain names and at this point, it is unclear whether the venture will ultimately prove to be a success. [FN75]

Should the effort prove successful, it will effectively create a second over-lapping network, which would likely make the Internet even more difficult to regulate. Or, perhaps one day, thousands of separate networks will arise, accessible only by those who have been given the secret browser configurations. The point is that it is impossible to say how these sorts of developments will affect the hardware or software technologies that enable [p. 348] the Internet, which in turn, constrain the choices available to regulators such as tax authorities.

B. The Nature of Cyberspace

Cyberspace is generally meant to involve more than the universe of bits and bytes enabled by the network. Rather, as discussed below, cyberspace generally denotes the universe of human creative sharing over the Internet. Nevertheless, commentators have different views on the term cyberspace as a definitional matter, [FN76] and it is necessary to try to unify these competing visions of cyberspace under one definition. An appropriate definition of cyberspace for legal scholars could be, for reasons that will be subsequently discussed, socially constructed Internet forums for commercial and non-commercial interaction.

To begin, where does the term "cyberspace" come from? Prior to the rise of the Internet, the word "cyberspace" was coined by author William Gibson in a science fiction novel called Neuromancer. [FN77] Gibson presents a vision of our future, a world increasingly mediated by computers: Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation .... A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. [FN78] The word was likely adopted by early Internet users who were familiar with Gibson's works. [FN79] Gibson's dystopic vision of our future and its "cyberpunk" ethic [FN80] likely played well with these early Internet participants [p. 349] who valued the complete freedom of their online experiences and considered themselves pioneers in an untamed online universe. For example, John Perry Barlow adopted the term in his now well-known A Declaration of the Independence of Cyberspace, [FN81] a call to arms against what he viewed as the unwarranted intrusion of government into Internet matters. The term "cyberspace" eventually entered the general lexicon. [FN82] What does cyberspace mean to legal commentators? Some commentators have used the term interchangeably with the term "Internet," [FN83] while others have associated cyberspace with the technologies that enable Internet communications. [FN84] Professor Katsh notes that online forms of interaction between individuals and other people or businesses are substitutes for physical places, and hence cyberspace experiences are transformed "into a culture with values, norms and expectations about acquiring, exchanging, using, and processing information." [FN85] Other commentators have similarly noted that cyberspace is comprised of different spaces or forums (for example, chat rooms, newsgroups, listservs and so on), each embedded with different values. [FN86]

[p. 350] The different views of cyberspace suggest that the term carries a valueladen notion: cyberspace--Gibson's "consensual hallucination"-- is essentially what we make of it. Accordingly, this Article will define cyberspace as socially constructed Internet forums for different types of human commercial and non-commercial interaction. [FN87] By "socially constructed," it is meant that the conception of cyberspace has taken on value-laden social structures; our view of cyberspace is influenced by our backgrounds, culture, legal training, personal histories and so on. It is recognized that all human institutions are socially constructed in the sense that the institutions will ultimately be embedded with a set of (often unspoken) norms and values. [FN88] An interesting aspect of cyberspace is that, while this social construction is well underway, the ultimate end is uncertain and difficult to forecast, as a result of the relative newness of cyberspace, its internal diversity and dynamic change. Cyberspace law--or, as it is sometimes referred, cyberlaw--involves the study of the appropriate role of law within this new space, a topic that is subsequently addressed in Part II.D.

C. NORMS AND TAX LAWS

In addition to emerging cyberspace norms, tax reform efforts must also recognize the importance of protecting "real world" or traditional norms that existed prior to the advent of the Internet. This Section discusses traditional tax policy norms as well as other considerations, such as the desire by many governments to preserve control over their tax systems (i.e., fiscal sovereignty).

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1. Tax Policy Principles

As a normative matter, there are a number of tax policy principles that are used to evaluate potential reform efforts. An underlying purpose behind these guiding principles or "tax norms" is to ensure that a tax system can effectively collect tax revenues to pay for public goods. First, tax laws should maintain neutral tax treatment between traditional commercial activities and Internet activities. The Treasury Report stresses: "Neutrality requires that the tax system treat economically similar income equally, regardless of whether earned through electronic means or through more conventional channels of commerce. Ideally, tax rules would not affect economic choices about the structure of markets and commercial activities." [FN89] A report issued by the White House further indicates: "[Taxation of Internet sales] should neither distort nor hinder commerce. No tax system should discriminate among types of commerce, nor should it create incentives that will change the nature or location of transactions." [FN90]

Second, tax laws should strive to promote administrative simplicity. In other words, the laws should not create overly burdensome compliance costs for businesses and should be relatively easy to enforce by tax authorities. [FN91] High compliance costs tend to discourage business activities, lowering welfare by inhibiting wealth-building activities. The proposals should minimize the compliance costs that would be incurred by businesses that could be forced to comply with the tax rules of a number of different jurisdictions (for example, if an e-commerce business was forced to file a tax return in every country where a consumer downloaded its product).

Third, the majority of tax authorities who initially reviewed the challenges presented by the Internet asserted that traditional tax laws and principles would generally suffice to deal with these emerging challenges. [FN92] Tax authorities and taxpayers have come to rely on these principles, encouraging certainty in business practice that, in turn, promotes economic activity. [FN93] These laws and principles--although problematic in many circumstances--reflect consensus among governments concerning how economic activity should be taxed and, it was thought, radical change to these [p. 352] traditional principles would not likely attract the level of cooperation required to deal with emerging challenges. [FN94] As discussed in the remaining parts of this Article, these guiding tax principles often conflict with each other with respect to economic activity that takes place over the Internet. For example, the desire to maintain neutral tax treatment is frustrated by the desire to maintain traditional tax principles (for example, physical presence tests) in many circumstances.

2. Non-Tax Norms

In addition to guiding tax policy principles, additional normative considerations surround any potential reform efforts with respect to Internet taxation. For example, governments have traditionally sought to preserve as much control over their tax systems as possible. Therefore, state legislators may be reluctant to harmonize (i.e., unify) their sales tax systems with other state governments because they would be forced to give up control over the definition of their tax bases (i.e., what goods will be subjected to the sales tax). This political desire to maintain fiscal sovereignty often thwarts reform alternatives that seek to create a more efficient tax system. [FN95]

An additional political concern surrounds differing views on the purposes of taxation itself. For example, a number of federal legislators within the United States appear to oppose any taxation of Internet activity, reflecting views that more taxes are unwarranted because taxes simply take money away from hard-working taxpayers. [FN96] These views may be espoused to satisfy particular political constituencies that favor tax reform efforts that would decrease the government's ability to impose taxes. [FN97] Alternatively, other political circles may be concerned that maintaining the Internet as a tax-free zone will inhibit the ability of government to generate the revenues to pay for public goods demanded by their constituents. Relatively high tax countries (or states), for example, may insist on comprehensive tax systems that tax all forms of economic activity associated with the Internet.

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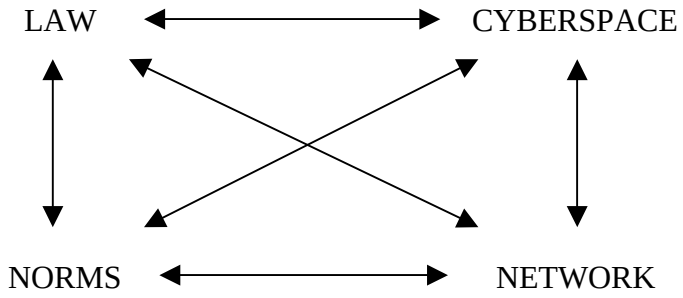
D. THE DIGITAL BIOSPHERE: A LEGAL MODEL FOR THE INTERNET

1. The Interaction of Law, Norms, the Network and Cyberspace

This Section will discuss the appropriate role of law with respect to activities that take place over the Internet by using a legal model to promote an understanding of the interaction among laws, "real world" norms, the network and cyberspace. Figure 1 shows the interaction among these four elements.

Figure 1



The four elements noted above--law, norms, cyberspace and the network--all co-exist in an interdependent relationship with each other. Each element places "pressure" on each other element by constraining or enabling the element. The extent to which this pressure is exerted by each element is an empirical question that will not be addressed within this analysis. In any event, it may not be possible to conclusively state that one element, such as a real world norm,

exerts X amount of pressure on the network. [FN98] The following discussion outlines the complex non-linear interaction among the four elements.

The network constrains and expands legal mechanisms. For example, the nature of the network--as it is currently constituted--inhibits laws that attempt to impose sales tax obligations on remote sellers because these sellers are often unaware of the geographic location of their customers as a result of the anonymous nature of the network. [FN99] But the network can also potentially enable or expand legal choices through technological mechanisms that could automate the sales tax collection process, lowering compliance costs to businesses and administrative costs to tax authorities. [FN100] Lawrence Lessig has argued that governments can protect values and interests by shaping the evolution of Internet technologies. [FN101] He has additionally [p. 354] proposed a model that considers the interaction among the network's architecture, norms, the market and law that is similar in many respects to the digital biosphere model discussed herein. [FN102]

The network enables cyberspace, but also constrains cyberspace. This first point is fairly straight-forward: cyberspace would not exist without the network. The nature of the network similarly helps to define emerging cyberspace values. The fact, for example, that the network generally permits anonymous communications embeds cyberspace with values where cyberspace participants may wish to preserve the complete anonymity of their interactions. Tax efforts that seek to intrude on this anonymity may encounter resistance by cyberspace participants. In addition, different forms of cyberspace interaction are constrained by the nature of the network. For example, certain forms of communication (such as video-conferencing) are lessened to the extent that broadband technologies are not widely available or are too costly to Internet users. Finally, the network enables and constrains real world norms indirectly through its impact on cyberspace. For example, the desire by a tax authority to track an e-commerce transaction for auditing purposes may be thwarted by expectations of transactional privacy in cyberspace (where anonymity in turn depends on network technologies). The network (and all technology) also directly affects norms, as a cultural anthropologist might argue, by changing our vision of our individual identity and the way we interact with our environment. [FN103] From a tax perspective, the network inhibits [p. 355] many traditional tax norms, such as the desired neutral tax treatment between traditional commerce and e-commerce or the desire to collect tax revenues associated with Internet activity. [FN104] For example, the network, as discussed, has eliminated the need for many traditional business intermediaries that are currently legally obligated to charge and collect taxes.

Cyberspace similarly enables and constrains norms. Cyberspace-- socially constructed Internet forums for human interaction--enables norms by expanding the ways that people interact and communicate and conduct commercial transactions. For example, tens of thousands of gamers simultaneously play online role-playing games such as EverQuest, and develop their own value systems through the way they interact with others in their online universe. [FN105] But cyberspace also constrains norms by, say, imposing foreign values on local values. [FN106] Real world norms similarly encourage or discourage the development of cyberspace as people translate their offline experiences into expectations concerning their online experiences. These expectations include views on whether commercial activities taking place over the Internet should be taxed. For example, one poll indicates that individuals generally consider it to be

unfair to tax traditional commercial activities while commercial activities in cyberspace remain untaxed. [FN107]

Cyberspace also enables and constrains the network. The network will evolve, at least partly, as a result of real or potential demand for forms of communication or commercial interaction. For example, network technologies will need to adapt to mandated tax solutions (for example, the use [p. 356] of trusted third parties or online intermediaries to collect taxes) to the extent that these solutions become accepted and prevalent within cyberspace. But cyberspace can also constrain the development of the network to the extent that cyberspace internalizes values that do not accept certain technologies. For example, mandatory digital certificates that reveal an individual's geographic location for tax purposes may be rejected as an unacceptable intrusion into a consumer's online privacy realm.

What is the role of law within this process? Law enables the network by promoting certain technologies or regulatory approaches over others (for example, the laws that began the privatization process of the Internet in the early 1990s). [FN108] Law can also constrain the network by inhibiting the development of technologies (for examples, a law that prohibit the export of encryption codes). Legal mechanisms that promote technological solutions to tax problems will ultimately dictate, at least to a certain extent, the evolution of the network. For example, tax laws can mandate the use of technologies to determine the geographic location of participants in an e-commerce transaction. Industry will react to these laws by developing and implementing these technologies. Law--essentially "formal" rules--has a similarly complex interactive relationship with norms--or "informal rules." As law and society scholars have suggested, law creates norms (by influencing individual behavior) and law, in turn, is created by norms (for example, the general cultural and legal prohibition against incest). [FN109] Finally, laws encourage the development of values and norms that make up cyberspace by, for example, encouraging a marketplace for ideas where freedom of expression is granted legal protection. But laws also constrain cyberspace by prohibiting certain types of interaction or exchanges, such as copyright laws to stop unauthorized trading in MP3 files. [FN110]

In many ways, the dynamic change and internal diversity of the Internet, along with the complex interdependent interaction among law, norms, cyberspace and the network, can be analogized to our understanding of the Earth's biosphere--the zone of life that stretches from deep within the Earth to the atmosphere. The late Russian geochemist, Dr. Vladimir Vernadsky, [p. 357] published a book called The Biosphere in 1926 that set out his theories concerning the workings of Earth's life systems. [FN111] Vernadsky suggested that life systems act as self-reinforcing and self-regulating mechanisms that promoted the continued existence of life within the biosphere. [FN112] This theory, though certainly controversial at the time, is now generally accepted concerning the evolution of planetary life forms. [FN113] Vernadsky also theorized that the evolution of humans added two new elements to the biosphere. [FN114] The first element was the noösphere, which can be thought of as the global interaction of creative thought, partly attributable to the growth in communication technologies. [FN115] The second element was the technosphere, which involves the creation of human-made technologies, such as cars, machines, infrastructure and all other forms of human activities. [FN116] The development of the technosphere, it was thought, would create conflicts for the self-regulatory function of the biosphere due to the pervasive impact of technologies. [FN117] This theory has gained wide

acceptance as scientists have begun to gain a fuller understanding of the impact of technology on a planetary and atmospheric scale. [FN118] But Vernadsky also suggested that the noösphere could resolve conflicts between the technosphere [p. 358] and the biosphere. [FN119] The Internet can be analogized to a man-made biosphere, or "digital biosphere." [FN120] The technosphere can be further analogized to the network (i.e., the software and hardware technologies that make up the Internet). In contrast, the noösphere can be thought of as cyberspace, the value-laden linkages of human thought and creativity that occur throughout the Internet. One of the main problems confronting any potential regulatory efforts is the fact that different forms of commercial and non-commercial expression converge in cyberspace/noösphere, a process encouraged by the merging of data, voice and video over the same distribution medium. In other words, the sale, purchase or exchange of digital and tangible products and services takes place within the same medium as forms of interpersonal communication, such as e-mail, newsgroups, listservs, avatar chat rooms, video-conferencing and instant messaging.

All of these forms of interaction are embedded with distinct values and different expectations of privacy and anonymity. Policy makers must achieve regulatory balance in a medium where these interests intersect and compete with one another. Commentators have been rightly concerned that cyberspace/noösphere interests will be crushed by myriad regulations issued by governments throughout the world. [FN121] Overly intrusive tax laws that mandate the automated collection of routine personal information will likely encounter resistance by cyberspace participants. Laws must respect the emerging values of cyberspace, which, in turn, will form part of the evolutionary process within the digital biosphere. [FN122] Self-regulation by commercial and non-commercial cyberspace participants and market-based solutions in contexts outside of taxation, may [p. 359] often be the preferred options because the market is likely in a better position to respond to dynamic interests, in contrast to the generally slow legislative process of governments. [FN123] However, self-regulation proponents often seem to either downplay or ignore the interaction between real world norms and cyberspace. [FN124] As discussed, real world norms are part of the process that shapes cyberspace. The role of representative government is to protect these real world norms even when they become translated (or changed) into cyberspace norms. For the time being, the self-regulatory approach and the more traditional regulatory approach co-exist in an uneasy fashion. In the long run, law may play an increasingly important role in mediating opposing views concerning Internet regulation in order to come up with a workable compromise that involves a mix of self-regulation and more formal government regulation.

2. Value-Added Tax Laws Within the Digital Biosphere

The complex interdependent relationship among tax law, norms, the network and cyberspace is evidenced by the debate surrounding the imposition of consumption taxes (for example, sales taxes or value-added taxes ("VATs")) [FN125] on cross-border e-commerce. As subsequently discussed, federal legislators within the United States continue to debate whether any sales taxes should be applied to e-commerce transactions. [FN126] The European Union, however, accepts that such taxation is both necessary and inevitable. [FN127] The European Union member States are focusing their internal debate on how to effectively apply their value-added tax to transactions emanating from outside of the European Union. [FN128] The two different

perspectives on the appropriateness of taxing Internet commerce [p. 360] represent competing legal visions surrounding the role of law and the Internet

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The European Union member states generally impose their VATs on the importation of most goods and services. [FN129] VATs are generally imposed at the border by customs agents when tangible goods are imported from outside of the European Union. [FN130] But, as occurs in the state and local sales tax scenario, VATs must generally be charged and collected by business intermediaries. As a result, the European Union is developing tax laws that would force non-European Union companies to charge and collect European Union VATs. [FN131] For example, consider a hypothetical online retailer based in Omaha called "RazerEdge.com" that sells a digital movie to a consumer in Spain. The European Union plans to eventually force companies like RazerEdge.com to charge and collect the Spanish VAT (at a twenty-five percent rate!) and then remit the tax payment to European Union tax authorities. If the company sells the movie for ten dollars, it will have to charge and collect an additional $2.50 and remit these tax revenues to Spanish (or possibly European Union) tax authorities. This potential change would grant the European Union legal authority over a United States-based business or individual, raising the specter of an army of dark-suited tax auditors from Brussels descending upon the Omaha Internet entrepreneur. The Omaha entrepreneur would presumably have to keep records to satisfy the European Union tax authorities that he has properly discharged his collection obligation. The United States has informally opposed the European Union's proposals, mainly as a result of concerns that United States businesses will have to incur significant compliance costs. [FN132] But the government has also expressed concerns that the European Union proposal represents what amounts to an illegal extraterritorial [p. 361] tax grab. [FN133] Jurisdictional conflicts are becoming more common-place with respect to Internet activities, as governments strive to protect local values by intruding into commercial transactions taking place in cyberspace. [FN134]

In any event, the European Union's proposal may be more symbolic than practical in the near term, as a result of existing constraints imposed by the network and law. [FN135] First, United States businesses will often be unable to identify the geographic location of their online customers due to the anonymous nature of the network. As previously discussed, Internet technologies that strive to identify the geographic location of Internet users are unproven and constrained by the nature of the network. And second, it remains unclear how European Union officials will enforce the proposal against companies that are physically located outside of the European Union. This is because the bilateral tax treaty network negotiated between the European Union countries and non-European countries generally only permits reciprocal enforcement of income taxes and not consumption taxes. [FN136] Entirely new legal institutions may need to be developed to support [p. 362] the proposed regime. As subsequently discussed, a comprehensive international technical solution may resolve many of these issues in the longer term, although such a solution will invariably be inhibited by the nature of the network and the nature of cyberspace. [FN137]

E. SUMMARY

The common threads developed within this Part offer guidance to tax authorities that are considering potential reform efforts to govern e-commerce. The following conclusions will be used to drive the analysis within the subsequent two Parts of this Article. In summary, the goal of law is to co-exist in a dynamic equilibrium with the other elements of the digital biosphere. [FN138] Legal rules should be properly aligned with the nature of the network and act to preserve traditional norms without destabilizing cyberspace.

1. Align Tax Laws with the Nature of the Network

Tax authorities must take into consideration the relevant attributes of the network prior to issuing proposals. As discussed, the network presents a number of challenges to lawmakers who wish to impose their consumption and income taxes on commercial activities that are tied to the Internet. Tax laws must take into account the borderless, intangible, anonymous and rapidly evolving nature of the network. Otherwise, the laws may be ineffective at attaining their two main goals: collecting revenues to pay for public goods and modifying behavior to obtain a desired social goal (for example, higher taxes on liquor to discourage consumption), which leads to the next point.

2. Protect Real World Norms

Tax reform proposals should strive to preserve important tax policy principles, as well as traditional non-tax norms that pre-existed the Internet. Tax policy principles, such as the desired neutral tax treatment between traditional commerce and e-commerce, serve the underlying goal of promoting a fair and efficient tax system, which, in turn, assists in revenue raising efforts. But other real world norms, such as the desire to preserve fiscal sovereignty by governments, must also be taken into consideration. Perfect solutions are likely unattainable; the goal should be to protect these norms to the greatest extent possible.

[p. 363]

3. Do Not Crush Cyberspace

Cyberspace consists of emerging forums for different forms of commercial and non-commercial interaction. Tax authorities must tread warily within these new forums. Myriad different tax rules from hundreds of governments could inhibit the development of these new forums and harm emerging cyberspace values, such as the desire for private and anonymous communications. Some disruption is inevitable as tax authorities begin to impose their laws on e-commerce. Governments should nevertheless take steps to ensure their tax measures are not overly cumbersome or intrusive.

III. THE DESIRE TO PRESERVE TRADITIONAL TAX LAWS

This Part reviews efforts by United States and international policy makers to preserve existing tax laws that strive to tax economic activity based on the geographic location of the activity. Section A discusses problems associated with traditional state and local sales tax laws that govern online retail sales. Section B discusses the potential dangers associated with the preservation of traditional international income tax laws and principles. Section C concludes that these traditional tax laws will often fail to achieve the desired balance among law, norms, cyberspace and the network within the digital biosphere.

A. FEDERAL AND STATE SALES TAX POLICY

1. Internet Tax Freedom Act and State Sales and Use Taxes

Prior to elaborating on sales tax developments, it may be useful to initially offer a simplified example of how traditional state and local sales tax laws work. John lives in San Francisco, California and buys a computer at his local computer store. The retail price for the computer is $1000. Pursuant to California law, the computer store is legally obligated to charge and collect state and local sales tax on this purchase which, presumptively, will equal a combined total of seven percent (six percent for the state sales tax and one percent for the local sales tax). Accordingly, John pays a total of $1070 for the computer, and the computer store collects and remits the $70 tax payment to the relevant tax authorities. Alternatively, assume that John phones a computer store located in Oregon (a zero sales tax state) and orders the same computer that retails for $1000. The Oregon computer store mails John his computer. California sales tax laws, however, cannot force the Oregon computer store, which is located outside of the geographic jurisdiction of California, to charge and collect any sales taxes, so John only pays a total of $1000 for the computer, and no sales taxes are collected on the transaction.

[p. 364] In 1998, Congress passed the Internet Tax Freedom Act, which prohibits the imposition by state and local governments of new or discriminatory Internet taxes. [FN139] One goal of the legislation was to try and ensure that state and local governments would not enact new tax laws to extend their jurisdiction over businesses located outside of their geographic jurisdiction. [FN140] This prohibition may have been arguably futile as a result of the existing prohibition against interfering with interstate commerce pursuant to the Commerce Clause of the United States Constitution. [FN141] The passage of the Internet Tax Freedom Act was nevertheless important as a signal that federal legislators wanted to preserve the status quo with respect to traditional sales tax laws. There are thirty-four states and over seven thousand local jurisdictions that impose different sales and use taxes [FN142] (i.e., a different definition of the sales tax base or different tax rates) throughout the country. [FN143] If a business attempted to expand its operations throughout the United States, a danger exists that the business would be forced to comply with thousands of different tax laws, inhibiting interstate commerce and harming the general economic welfare of the country. Similar concerns have been voiced with respect to Internet commerce. [FN144]

[p. 365] In a series of decisions, the United States Supreme Court has articulated and refined a "substantial nexus" test [FN145] that prevents state and local governments from taxing economic activity unless this activity emanates from a physical presence within the taxing state's borders.

[FN146] These decisions mainly surround mail order companies whose only physical presence within their consumers' states involved the use of the telephone system to complete customer orders nd the postal system to mail catalogs and products to end consumers. [FN147] Accordingly, under the "bright-line" physical presence test espoused by the Court, mail order companies that do not maintain sales offices or sales forces within target states cannot be forced to collect sales taxes by state or local governments. [FN148] In its most recent decision, the Court emphasized that Congress could overturn this bright-line physical presence test under its authority to change the Commerce Clause. [FN149]

[p. 366]

2. Sales Taxes and the Protection of Norms

The Internet Tax Freedom Act protects business certainty by protecting the status quo with respect to state and local sales tax laws. It suffers, however, from three serious deficiencies that inhibit the protection of important norms. First, state and local governments will eventually lose significant revenues as a result of their inability to effectively tax consumer Internet transactions, an obviously important tax norm for these governments. By trying to turn the Internet into a sales-tax-free zone, the federal government puts at risk the public goods provided by state and local governments to their residents. [FN150] For example, the General Accounting Office ("GAO") has estimated revenue losses between one billion and twelve billion dollars a year by 2003 if states cannot impose their sales taxes on remote consumer sales. [FN151] The GAO's wide estimate range follows from the difficulties in forecasting the growth of e-commerce and efforts of taxpayers (both consumers and businesses) to change their behavior to lessen their tax liabilities.

Second, the policy does not promote neutral tax treatment between traditional commerce and e-commerce, an important tax policy guiding principle. Instead, the policy encourages traditional retailers to change their operations for tax reasons in order to compete on a level playing field with online retailers who remain untaxed. Unequal taxes distort the marketplace for certain goods by enhancing the after-tax return of Internet retailers in comparison to traditional retailers. Further, tax planning may result in additional (possibly unanticipated) revenue losses to state and local governments as companies structure their operations in order to divert sales into the tax-free aspects of their operations.

Third, in addition to creating inefficiencies through market distortions, it is simply unfair to "main street" retailers who must continue to charge and collect sales taxes on their products, while Internet companies are let off the sales tax hook. Government tax policy should not disfavor traditional retailers who must increasingly compete against Internet companies. The public appears to support this view. One survey found that fifty-eight percent of respondents considered it unfair for Internet businesses to have [p. 367] an artificial tax advantage over their main street counterparts. [FN152]

These three concerns are discussed within the context of a case study that investigates how one company is relying on traditional laws and principles to engage in activities that subvert traditional norms.

3. Wal-Mart Case Study

The following case study discusses how Wal-Mart Stores, Inc., the largest retailer in the world with annual sales exceeding $191 billion, [FN153] has engaged in tax planning to ensure that its online subsidiary will not have to charge and collect sales taxes in many circumstances. In January 2000, Wal-Mart, Inc. announced that the company intended to create, in partnership with a venture capital firm, an online company called Walmart.com, Inc. (operating under the business name Walmart.com) to be headquartered in the San Francisco Bay Area. [FN154] On its Web site, Walmart.com describes itself as an "independent company," [FN155] although the same Web site indicates that Wal-Mart Stores, Inc. is the majority owner of the corporation that operates under the business name Walmart.com. [FN156] Wal-Mart Stores, Inc. maintains more than 2400 stores in the United States. [FN157] The question that remains is whether Walmart.com can, under current constitutional principles, be forced to charge and collect sales taxes on sales to jurisdictions where Wal-Mart Stores, Inc. maintains physical outlets. In response to an e-mail inquiry from the author, Walmart.com maintained that the law only compels Walmart.com to collect sales taxes from residents of states where Walmart.com maintains a physical presence. [p. 368] [FN158] In other words, Walmart.com maintains that the company (or its parent company) does not have to collect sales taxes in states where Wal-Mart Stores, Inc. maintains its traditional retail outlets.

Wal-Mart Stores, Inc. and its subsidiary are likely relying on an "entity isolation" strategy in order to argue that the parent company is operationally independent from its subsidiary. [FN159] Courts have generally respected the doctrine of corporate separateness and have asserted that it is unconstitutional to force a corporate affiliate that does not maintain a physical presence within a state to collect sales taxes simply because the affiliate's parent company maintains a physical presence within the state. [FN160] Professor McIntyre has previously reviewed the law in this area and has indicated: "If entity isolation is permitted ... [c]ollection of sales and use tax on remote sales becomes elective. Given the election, most, if not all, sellers can be relied upon to elect not to collect the tax." [FN161]

But has Walmart.com effectively shielded itself from the reach of state and local tax authorities? Wal-Mart Stores, Inc. maintains that Walmart.com is an independent company, yet Wal-Mart Stores, Inc. owns eighty-eight percent of Walmart.com [FN162] and additionally maintains a substantial presence on Walmart.com's board of directors. [FN163] Under general corporate governance principles, as articulated by Delaware corporate law, where Wal-Mart Stores, Inc. is incorporated, Wal-Mart Stores, Inc. has both de facto (practical) and de jure (legal) control over its online affiliate. [p. 369] [FN164] Nevertheless, courts have generally respected the separation of legal business entities and have suggested that corporate affiliates of retailers cannot be forced to collect sales taxes unless, under the so-called "attribution nexus theory," the affiliate is acting as the agent of its corporate parent or is operationally tied in a significant way to the parent. [FN165] The Supreme Court has not yet considered this particular issue. [FN166]

Does a dot-com affiliate of a so-called "click-and-mortar" (i.e., a company with traditional retail offices as well as online retail services) act as the agent of its corporate parent? In its initial press release, Wal-Mart Stores, Inc. indicated that: "This new company is expected to greatly accelerate the development of Wal-Mart's Internet retail site, Walmart.com, and to further

complement efforts to attract offline customers to the Internet via the trusted Wal-Mart brand." [FN167] In other words, Wal-Mart Stores, Inc. understandably wants to tap into its goodwill in order to enhance sales through Walmart.com. At least one court has scrutinized the mixing of brand names and other intellectual property but nevertheless let a corporate affiliate off the sales tax hook because there was insufficient evidence that the affiliate was operationally dependent on the parent company. [FN168] Do the two companies maintain operational independence? [FN169] On August [p. 370] 2, 2000, Wal-Mart Stores, Inc. announced that it would build a distribution center in Georgia in order to house and ship products ordered by Walmart.com customers. [FN170] According to the press release, Wal-Mart Stores, Inc. and Walmart.com have entered into the distribution agreement in order for Walmart.com to "leverage years of logistical expertise and fully take advantage of the many efficiencies that allow Wal-Mart to pass tremendous savings on to customers." [FN171]

Further, Walmart.com's Web site suggests that the two companies enjoy ties that benefit each other, including "excellent vendor relationships, highly efficient back-office systems, [and] an unswerving commitment to Sam Walton's 'Always low prices' philosophy." [FN172] Wal-Mart Stores, Inc. may argue that the parent deals with its online affiliate on an arm's length (i.e., independent) basis. Yet the public disclosures suggest that the two companies are combining their efforts to take advantage of operational synergies. Wal-Mart Stores, Inc. is able to charge "always low prices" due at least in part to its vast supply network, where the company leverages its purchasing power in order to reduce the prices charged by suppliers. A truly independent company would charge an arm's length price (i.e., fair market value) to its affiliate that included a mark-up to take into account the increased profit margin to which Wal-Mart Stores, Inc. should be entitled. Accordingly, Walmart.com should be charged the same price Wal-Mart Stores, Inc. would charge to supply Target or another similarly situated retailer. If Wal-Mart Stores, Inc. charged Walmart.com the price [p. 371] that Walmart.com would pay a truly independent supplier, then Walmart.com would presumably not be able to charge the "low prices" available at Wal-Mart Stores, Inc. [FN173]

In fact, Walmart.com arguably acts just like another retail arm of Wal-Mart Stores, Inc. and not like an independent retail outlet. For instance, the Wal-Mart Stores, Inc. Web site does not support any retail activity, but acts as a corporate Web site for employees, suppliers and investors. [FN174] In its 2001 Annual Report filed with the Securities and Exchange Commission, Wal-Mart Stores, Inc. lists www.walmart.com as its "Retail Internet Site." [FN175] Further, the Annual Report indicates that Walmart.com "was formed in fiscal 2000 to further develop the Company's e-commerce initiative and [I]nternet business." [FN176] For federal securities disclosure purposes, Wal-Mart Stores, Inc. does not disclose the amount of revenues generated by Walmart.com because sales generated by the dot-com affiliate are lumped together with the traditional Wal-Mart stores, discount stores and supercenters into one category called "Wal-Mart Stores." [FN177] This makes it impossible to estimate sales tax revenue losses, if any, resulting from the fact that Walmart.com does not charge and collect sales taxes outside of a few states. Sales from Walmart.com may not be material from a securities law perspective and, hence, are not required to be reported.

Finally, the Walmart.com Web site includes a number of statements that would suggest to a potential customer that the online affiliate and the parent company are one and the same (or at least acting on each other's behalf). For example, the Walmart.com Web page contains a "Store Finder" service where Web site visitors can enter their zip codes in order to find the closest Wal-Mart store. [FN178] In its Web site privacy disclosure, the company defines the term "we" to be Wal-Mart Stores, Inc. and Wal-Mart.com, Inc. (which operates under the business name Walmart.com). [FN179] [p. 372] The privacy disclosure further indicates that "we" will not sell personal information on Web site visitors to anyone, [FN180] but the inference is left that Walmart.com shares all of this information that it collects with its parent, presumably in order to enhance the parent company's own market research concerning the buying habits of its customers. Wal-Mart also advertises a Wal-Mart credit card that can be used for online purchases, as well as purchases through the traditional physical sales outlets. [FN181] Finally, items purchased online via www.walmart.com can be returned to any Wal-Mart store. [FN182] The analysis suggests that Walmart.com may not be operationally independent from its parent company, Wal-Mart Stores, Inc. Accordingly, it may be constitutionally acceptable for local and state governments to force Walmart.com to charge and collect sales taxes on sales to consumers where Wal-Mart Stores, Inc. maintains a physical presence, which is every state within the United States. [FN183] Even if Walmart.com has not crossed the line, it may not make sense to apply a body of sales tax law that was developed for the mail order industry. In the public's mind, a dot-com affiliate of a well-branded retail chain, such as Wal-Mart, will almost invariably act as the Internet retail arm for the traditional store. Further, these large click-and-mortars have the resources and knowledge to comply with all relevant local and state sales tax laws because they maintain stores throughout the country.

Professor McIntyre has suggested that, in determining whether a particular entity isolation strategy is effective, courts should take into account the real relationship between the related corporations in order to determine whether the imposition of a sales tax collection obligation on the remote seller would be an unreasonable burden on interstate commerce. [FN184] Alternatively, he suggests that states may be able to impose the collection obligation directly on the parent company for its online affiliate's sales. [FN185] The parent would be forced to instruct its subsidiary to charge and collect sales taxes in order to discharge this responsibility. [FN186] These sorts of theories [p. 373] will likely be tested by courts in the near future to the extent that state and local governments challenge the practices of dot-com affiliates of traditional retail chains. [FN187]

In any event, Wal-Mart's entity isolation strategy may merely reflect the inevitable result of maintaining tax-free status over Internet transactions while continuing to apply taxes to traditional economic activity. Wal-Mart is attempting to convert its taxable online sales into non-taxable sales through tax planning, in order to level the playing field with pure dot-coms who do not have to charge and collect sales taxes. Wal-Mart, as the largest traditional retailer within the United States, would hence likely benefit from a legal rule change that forced online companies to collect sales taxes from remote customers. Further, there are many more click-and-mortars that are attempting to use similar entity isolation strategies. [FN188] The increased reliance on tax-free online "independent" affiliates will only ensure that state and local governments lose additional revenues that pay for the public goods and services demanded by their constituents. Moreover, tax rules that emphasize the need for a physical presence run into problems when they

encounter the borderless nature of the network. As subsequently discussed, a preferred alternative may be to emphasize economic presence rather than physical presence in order to circumvent these problems. [FN189]

[p. 374]

4. Sales Taxes and Internet Networking Equipment

As discussed, the network facilitates remote selling; an Internet retailer can post a Web site, advertise via this site, and process payment for a transaction, fulfilling many of the functions of traditional retailers. Internet companies can own or lease computer equipment in other states in order, for example, to ensure their customers have access to their products and services by facilitating the downloading process. Should owning or leasing computer equipment in a particular state permit that state to impose its sales tax collection obligations on the company that owns or leases the equipment? [FN190] So far, courts and legislators have generally been reluctant to permit state and local governments to extend their tax jurisdiction over computer equipment. [FN191]

For example, one case involved America Online ("AOL"), an Internet Service Provider ("ISP"), which leased networking equipment throughout Tennessee. [FN192] The Tennessee Chancery Court held that this equipment did not meet the constitutional threshold for a substantial physical presence within the taxing state because the facts "do not demonstrate that AOL has a literal physical presence in Tennessee so as to justify taxation under the Commerce Clause consistent with current law." [FN193] Similarly, the Virginia Department of Taxation has recently ruled that an ISP's purchase of components of the Internet's infrastructure, including computer servers and routers based in Virginia, would still leave the ISP exempt from Virginia's sales tax. [FN194]

[p. 375] The refusal to extend the substantial nexus test to computer equipment makes sense due to the nature of the network, where the location of computer equipment does not necessarily have to have any connection with the location of consumption. [FN195] This point is discussed in greater detail in the next Section, where the United States federal government has embarked on a different path by agreeing that, for international income tax purposes, components of the network (generally computer servers) can create a taxable presence in some circumstances. [FN196]

B. PRESERVING TRADITIONAL INTERNATIONAL INCOME TAX PRINCIPLES

In November 1996, the Treasury Department issued a report (the Treasury Report) that discussed the emerging international tax challenges posed by the Internet economy. [FN197] The report was groundbreaking because it set the terms for subsequent discussions of these issues. In particular, the Treasury Department suggested that traditional international tax laws and principles would likely suffice to confront emerging challenges. [FN198] In the wake of this report, a number of other national tax authorities issued similar statements calling for the preservation of international tax principles. [FN199]

Subsequent to the issuance of the Treasury Report, the United States government has generally worked to achieve consensus on reform efforts through the Organization for Economic Cooperation and Development ("OECD"), the main international organization charged with

developing the rules to govern the taxation of cross-border e-commerce. [FN200] In 1998, the OECD similarly agreed that traditional international tax principles would be sufficient to deal with emerging challenges created by the Internet. [FN201] Accordingly, this Section will focus on the tax reform efforts by the [p. 376] OECD, which generally bind all of the thirty OECD member states, including the United States.

1. Permanent Establishments, Tax Norms and Control Over Geographic Space

Countries negotiate bilateral tax treaties to govern the income taxation of cross-border economic activities. [FN202] One of the most important roles that each tax treaty plays is the identification of the threshold of economic activity necessary to permit a country to tax a particular economic activity taking place within its borders. In rules that are somewhat analogous to the rules discussed previously in the context of state sales taxes, countries generally agree within their tax treaty networks that they will not impose their income taxes on foreign businesses unless these businesses maintain a significant physical presence within the taxing country's borders. [FN203] This physical presence is called a "permanent establishment" within tax treaties and is defined to include, among other things, a store, branch, building or depot. [FN204]

[p. 377]

2. Taxing Profits from Computer Servers/Permanent Establishments

For two years, a Working Party (whose membership included United States representatives) to the OECD studied to see whether the definition of permanent establishment should include a computer server (i.e., a computer that has been networked to the Internet). [FN205] Computer servers are used for a number of purposes, including posting Web sites and transmitting digital goods and services. In February 2001, the OECD adopted the Working Party's conclusion that computer servers should constitute permanent establishments in certain circumstances. [FN206] For example, a computer server constitutes a permanent establishment if the server performs integral aspects of a cross-border transaction, such as order-taking via a Web site, payment processing and transmission of a good or service.

Previous works written by the author have discussed the problems associated with a draft version of this rule that proposed to assert legal control over a physical aspect of the Internet's infrastructure (i.e., a computer server). [FN207] This Section will emphasize additional areas of concern surrounding this rule. The main deficiency of the approach is that a computer server need not have any geographic connection with its income producing activities, and taxpayers will take advantage of this fact to shift income to low or nil tax jurisdictions. For example, consider a hypothetical online music company called "WorldMusic4U.com," based in the United States, that wants to expand its sales to consumers residing in the European Union. WorldMusic4U.com can lease a server in Ireland, a country with a low corporate income tax rate in comparison to other European Union nations. [FN208] The company can additionally ensure that the software functions within this server perform [p. 378] integral aspects of the cross-border transaction on any sales of digital music files (i.e., MP3 files) to consumers located throughout the European Union. The software within the server located in Ireland will hence be designed to advertise the music via a Web site, take a consumer's order, process a payment, and transmit the digital music file to the end consumer.

Under the OECD proposal, the server will constitute a permanent establishment, entitling Ireland to tax all of the profits attributable to the server's operations. [FN209] However, it makes little sense to permit Ireland (or worse, a tax haven) to collect the resulting tax revenues from the profits because Ireland is not where WorldMusic4U.com is based, nor is it where the actual sales took place. Under traditional tax principles, tax jurisdiction is normally allocated to the country where a business is based or incorporated or, alternatively, to the country where significant business activity is taking place (as evidenced by the presence of a traditional permanent establishment, such as a store). The use of a computer server as a substitute for a traditional physical presence fails to take into account the nature of the Internet. The server/permanent establishment standard focuses attention on the software functions performed within the server in order to determine whether the requisite threshold of activities has been surpassed. The income-producing functions, hence, will be allocated according to software functions, which can be shifted to any location in the world. [FN210] This shifting entails certain transaction costs (for example, lease payments for a server and maintenance and modification of the computer code within the server), but these costs may be low. In any event, multinational companies have an incentive to shift the location of their income-producing activities as long as the marginal tax savings generated by the shift exceed the marginal cost of implementing and maintaining the shift. [FN211]

3. Tax Competition and Computer Code

The previous analysis within this Article concerning the economics of information goods seems to support these conclusions. [FN212] As discussed, information goods (i.e., anything that exists in digital form) may be quite costly to create, but can be copied and distributed essentially for free. Income- [p. 379] producing computer code is one such information good. Once the code has been developed and implemented (for example, the code within a server that displays Web pages and controls their functions), income-producing information goods can produce revenues without any further human intervention. In the long term, taxpayers will shift the ostensible location of their income-producing information goods as long as tax rules continue to focus on geographic control in cyberspace. The location of choice may be the lowest tax jurisdiction that can support the technical infrastructure necessary to accomplish the e-commerce transaction. While there does not yet appear to be a broad migration of e-commerce companies to tax havens, there are early indications that businesses are moving to, or are basing their operations within, these tax free countries. [FN213] For example, tax havens such as Bermuda, [FN214] Belize, [FN215] Barbados [FN216] and Costa Rica [FN217] have reportedly attracted a number of Internet businesses, suggesting that it is technologically feasible to maintain major e-commerce operations in these offshore countries. Further, the setting up of a full e-commerce operation within a tax haven entails significant costs, including hiring workers and setting up facilities. The focus of the remaining part of this Section will be placed on nominal shifts of income-producing activities (i.e. shifts in income-producing computer code to servers), which are far cheaper and logistically easier to accomplish, suggesting that such nominal income shifting may become far more prevalent.

All of this has implications concerning international tax competition and public choice theory. Public choice theory suggests that governments will compete for taxpayers (and hence more tax revenues) by lowering their effective tax rates on certain mobile factors of production (for example, capital, good, services or, to a lesser extent, labor). [FN218] This competitive [p. 380]

process, it is thought, can lead to optimal results (i.e., a so-called "race to the top") because the mobile factor will be allocated to the jurisdiction that can make the most productive use out of that particular factor. For example, when state governments lower their personal income taxes to attract more taxpayers, a race to the top arguably results, where individual taxpayers move to the state that best reflects their desired preferences for a mix of taxation and the provision of public goods. [FN219] At the local and state level, taxation more closely follows the tax benefit principle, where taxes paid by a taxpayer result in government benefits to the taxpayer, arguably enabling this race to the top to take place.

However, at the international level, the tax benefit principle is less apparent where multinational firms often shift nominal income to low tax jurisdictions, while still reaping the benefits of the provision of greater public benefits (for example, schools, roads, police protection, etc.) in jurisdictions where the business is headquartered. As one gets further away from the tax benefit principle, the tax competition process is thought to lead to harmful results (i.e., the so-called "race to the bottom") as jurisdictions compete for mobile factors of production, resulting in lower taxes and the eventual inability to fund public goods demanded by government constituents. [FN220]

Additionally, the tax competition process may result in regressive tax policy as tax concessions are offered to highly mobile factors of production (for example, capital income produced by computer code), necessitating a greater emphasis on taxing less mobile factors of production, such as workers who may not own capital. Governments are concerned that they will not be able to maintain the progressivity of their income tax systems on individuals if they must increase these taxes in order to make up for shortfalls in other areas (for example, corporate income taxes) resulting [p. 381] from tax competition. [FN221] Beginning in 1998, national tax authorities began to attack the problem of harmful tax competition through multilateral OECD and European Union efforts. [FN222] Extending tax jurisdiction over the location of a computer code for e-commerce purposes arguably represents a serious setback to these efforts because countries will invariably compete for this highly mobile factor.

4. Intangible Assets, Research Expenses and Income Shifting

Information economics may offer additional insights regarding tax policy. The fact that marginal costs for the production and transmission of digital goods approach zero, complicates other aspects of tax policy as intangible assets and research and development activities gain relatively greater importance in high-technology oriented economies. Countries generally grant a current deduction (or tax credit) for research and development activities in order to subsidize or attract these types of activities that are thought to produce indirect economic benefits (for example, innovation is passed on to other areas of the economy). [FN223]

This tax rule that gives a break to research and development activities may make sense when applied to traditional forms of economic activity that produce tangible products. There are many points along the production chain that add value for traditional forms of economic activity; the profits produced by the supply of raw materials, the manufacture of products and their final distribution and sale can all be taxed by the appropriate tax authority. The value added for the production of information goods or income-producing information goods, on the other hand, generally takes place at [p. 382] the research and development stage. Accordingly, tax authorities

may need to reform their income tax systems to capture this added value by amortizing (i.e., spreading out) the development costs over the expected useful life of the information good. [FN224] However, tax authorities are unlikely to implement such reform if they feel it will drive research activities to more favorable lower tax jurisdictions. This provides a further incentive to shift income offshore once an information good has been developed within a relatively high tax area, such as the United States. The development costs will be deducted in the United States, lowering taxable profits in this country, while subsequently shifting the income-producing computer code to a relatively lower tax jurisdiction.

In addition, intangible assets (for example, patents, copyrights, brand names, software designs) are gaining in importance relative to tangible assets (for example, a widget machine) by generating higher rates of return in an economy that emphasizes innovation. As many commentators have noted, intangible assets have much greater international mobility in comparison to tangible assets. [FN225] The ostensible location for these intangible assets can be shifted to the lowest tax jurisdiction in order to generate even higher returns for their owners. Cost-sharing strategies and offshore licensing arrangements may be used to circumvent rules that impose a "toll" on the transfer of intangible assets (for example, a computer program) to a foreign country. [FN226]

In summary, information economics suggests that reform efforts may be necessary to address the problems associated with tax laws that focus on the geographic location of income-producing information goods (for example, a computer code in a server) or that permit current deductions for research activities. An alternative would involve, as subsequently discussed, establishing tax laws that constrain income-shifting activities.

5. Constraining Income Shifting

Under traditional tax laws, tax treaty partners are only permitted to tax [p. 383] profits attributable to a permanent establishment. [FN227] For example, a French retail branch of a United States-based retail chain will only be obligated to pay the French government tax on any profits that are attributable to the branch, such as the profits derived from all sales from the French retail outlet to French consumers. In February 2001, the OECD issued a draft paper that discusses how taxpayers should attribute profits to their computer servers in the context of Internet retailing (assuming a permanent establishment is found to exist). [FN228] Under general transfer pricing rules, multinational companies are required to allocate profits to each permanent establishment under arm's length principles that create a fiction, whereby the organization must charge an objective (i.e., arm's length) price for its related party transfers as if each part of the organization was dealing with independent companies. [FN229] The draft applies a two-step process for determining the appropriate amount of profits. [FN230] Step one employs a functional and factual analysis to determine which of the identified activities can be associated with the computer server and to what extent. [FN231] The functional analysis asks what risks are being assumed by the permanent establishment in the course of its operations and how the permanent establishment uses its assets. [FN232] A Web server, in the context of an online retailing operation, that takes a customer's orders, processes payment, and delivers a digital product to the end consumer is compared with a traditional retailer. [FN233] A traditional retailer makes a number of decisions involving functions, such as ordering and maintaining inventory and negotiating terms with suppliers. In contrast, the OECD report [p. 384] notes that a

Web server lacks this type of decision-making ability and, accordingly, is not the same as a full-function retail outlet. [FN234]

Further, the risks assumed by the Web server are scrutinized because profit-making activities are generally associated with the assumption of different forms of risk (for example, an investor who buys shares in a public company assumes greater risk and hence expects a potentially greater return in comparison to an investor who buys an asset with minimal risk, such as a government bond with a fixed return). The OECD report concludes that the Web server's primary function is to provide support services for the retailing activities of the firm and that the server operations provide very little operational risk (for example, credit risk, technological risk and marketing risk). [FN235]

Step two determines the amount of profits attributable to the computer server by looking to see what appropriate return would be earned by a distinct enterprise providing the same transaction. [FN236] For example, a Web server is said to generally employ assets used or developed by the head office, and thus the server would have to compensate the head office for this use. [FN237] As a service provider, the Web server is only entitled to be compensated by fees, but should not be entitled to a percentage of the profits derived from Internet sales. [FN238] By tightening up the profit attribution rules, the OECD has presumably hoped that abusive tax planning will be limited.

As subsequently discussed, the "one-two punch" of (a) changes to the definition of the permanent establishment to include servers, along with (b) changes to the profit attribution rules for server/permanent establishments, has set the United States and the other OECD member States on a radical tax reform path that is directly counter to their public pronouncements concerning the desire to maintain traditional tax norms. [FN239] [p. 385] Finally, the appropriate tax treatment for an international transaction must take into consideration two additional areas surrounding anti-avoidance tax rules (for example, so-called "Subpart F" rules within the United States and income characterization rules). [FN240] Both of these areas are attracting reform efforts, but any serious consideration of the implications of these efforts is outside of the scope of this Article. [FN241]

C. SUMMARY

It is becoming increasingly clear that many traditional tax laws and principles will prove to be unworkable when applied to cross-border e-commerce transactions. The previous Part concluded that the appropriate role for tax law is to preserve important norms by aligning legal rules with the nature of the network while striving not to crush cyberspace. The two areas under scrutiny within this Part--state and local sales taxes and international income taxes-- showed how traditional tax laws that emphasize control over geographic space fail to achieve the appropriate balance within the digital biosphere. The traditional laws and principles ignore the nature of the network and, hence, will fail to protect real world norms. The inability to impose collection obligations on remote sellers in the [p. 386] context of state and local sales tax systems will lead to revenue losses and a distortion in the marketplace as companies seek to develop tax-free online affiliates (as evidenced by the Wal-Mart case study). [FN242] Further, the attempt by the OECD to translate traditional tax principles, such as the need to preserve the permanent

establishment principle, into virtual world analogs, such as the server/permanent establishment, will lead to tax planning activities that will divert tax revenues away from countries which have a meaningful connection to the profit-generating activities in the first place.

IV. THE ROAD AHEAD: TAX LAWS AND BALANCE WITHIN THE DIGITAL BIOSPHERE

This Part discusses how the interaction of law, norms, cyberspace and the network within the digital biosphere is leading to a significant change in traditional tax laws and principles surrounding state and local sales taxes and international income taxes, despite the prior claim by many tax authorities that traditional tax principles must be preserved. Section A discusses how tax authorities are moving toward economic presence tests and away from traditional tax principles that emphasize the need for a physical presence before tax jurisdiction can be asserted over a cross-border transaction. Section B discusses how tax authorities are considering the use of Internet technologies to automate the tax collection process in order to reduce tax compliance costs. Section C discusses other options available to tax authorities that may lead toward incoherent tax policy. Finally, Section D discusses the merits of the reform efforts under scrutiny with respect to the appropriate role of tax law within the digital biosphere.

A. FOCUS ON ECONOMIC PRESENCE

1. State and Local Sales Taxation: Economic Presence and Location of Consumption

As discussed, traditional tax laws and principles prohibit state and local governments from exerting sales and use tax jurisdiction over out-of-state businesses unless these businesses maintain a physical presence within the taxing state. [FN243] This leads to a number of anomalous results, including tax-planning behavior that will eventually cause serious revenue losses to sub-federal governments. As a result of the difficulties associated with taxing remote sales, some commentators have proposed reform efforts that focus instead on an economic presence test at the location of consumption (for example, the geographic location where the purchaser of an e-commerce [p. 387] good resides). [FN244] An economic presence test would replace the traditional physical presence test by permitting state and local tax authorities to impose tax collection obligations on remote sellers if the seller exceeds a specified threshold of economic activity (for example, sales of over $100,000) within the taxing state.

For example, Charles McLure has proposed that remote sales should be taxed by the state where consumption takes place, regardless of whether a business maintains a physical presence within the taxing state. [FN245] In order to achieve a workable solution, he asserts that states will need to radically simplify and unify their tax bases. [FN246] Similarly, Walter Hellerstein has advocated extending the reach of state tax authorities over the location of consumption for remote sales by focusing on the billing address of the consumer. [FN247] As a result of the difficulties that often arise in determining the location of consumption with respect to e-commerce activities, additional rules have been suggested to impose the tax when it is not possible to determine the location where the purchaser resides. [FN248] These suggestions comport with international efforts to focus taxation for value-added tax purposes on the location of consumption. [FN249]

These views have at least partly been adopted by the Streamlined Sales Tax Project ("SSTP"), the most ambitious effort yet by the states to simplify and unify their disparate sales and use tax systems. At the time of this writing, thirty-two of the forty-five states that impose sales taxes have committed to participate in the SSTP. [FN250] As of June 19, 2001, twenty-nine states have taken legislative steps to introduce or adopt legislation based on [p. 388] the SSTP efforts. [FN251]

These legislative efforts are based on a model state sales tax law ("Uniform Sales Tax Act") and uniform agreement among the participating states ("SSTP Uniform Agreement") that was adopted in December 22, 2000 (and subsequently amended on January 24, 2001). [FN25] In order to encourage neutral tax treatment between traditional commercial activities and e-commerce, the SSTP's work will apply to all forms of commerce. [FN253] Through the SSTP Uniform Agreement, participating states agree to adopt a destination-based sales tax system where sales will be generally sourced to where a product has been received by a consumer (for example, the delivery address, which for digital products will generally coincide with the consumer's billing address). [FN254] For digital goods, if the location of consumption cannot be determined, then the product will be taxed at the rate of the state and local jurisdiction where the product was first available for transmission (for example, the online vendor's normal place of business). [FN255] The proposed legislation would only force companies with sales above a specified threshold to comply with the collection obligation in order to assuage concerns surrounding interference with inter-state commerce. [FN256]

The thrust of the SSTP is to greatly simplify and unify state and local sales and use taxes. Importantly, all local governments must use the same tax base as the one chosen by the state. [FN257] Further, participating states will administer all local sales and use taxes. [FN258] The remote vendors hence would only be required to register with the state tax authority and remit revenues to this central authority, which in turn will distribute the relevant [p. 389] revenues to local governments. [FN259] Finally, Internet vendors are encouraged to adopt technological platforms that automate the tax collection process. [FN260] These steps should help to alleviate compliance costs associated with complying with different tax laws.

The fate of the SSTP remains unclear. By boldly moving to simplify and unify their sales tax systems in recognition of the challenges imposed by the network, state tax authorities have run squarely into fiscal sovereignty concerns reflected by state legislators. A special task force of the National Conference of State Legislatures ("NCSL"), on January 27, 2001, voted to approve the Uniform Sales Tax Act and SSTP Uniform Agreement, but modified the model act and agreement in a number of important ways. [FN261] The NCSL task force voted to: (a) permit states to have more flexibility in determining tax rates for certain goods (for example, clothing and food); [FN262] (b) delete components of the SSTP Uniform Agreement, such as the definition of sales tax bases; [FN263] and (c) relegate the SSTP to the status of an advisory group with no authority to change legislation. [FN264]

According to an NCSL spokesperson, the changes were necessary in order to ensure a realistic chance of success of final passage with state legislators. [FN265] These state legislators must deal with a diverse set of constituents, including businesses who want to make sure they are not subjected to discriminatory tax treatment (or who lobby to maintain tax preferences) and social

groups who want to maintain a zero tax rate on certain items, such as food. [FN266] Concerns surrounding burdensome compliance costs will increase to the extent that the SSTP's harmonization and simplification efforts are reduced. A practical political solution could involve permitting states to maintain a certain amount of control over their sales tax systems, but prohibiting [p. 390] local governments from taxing out-of-state businesses. [FN267] The real complexity (and higher potential compliance costs) lies in the thousands of local sales and use tax rules and not with the forty-five states that impose sales taxes. [FN268]

In any event, it is clear that for an economic presence test to be workable, steps must be taken to dramatically reduce the complexity in state sales taxes as well as uniformity in how these taxes will be administratively applied to transactions. The ultimate solution will likely require a compromised effort driven by a mix of bottom-up (state and local governments) and top-down (Congress) political institutions in order to assuage compliance concerns and circumvent constitutional hurdles surrounding burdens on interstate commerce. [FN269] For example, the Multistate Tax Commission, through its efforts with the Streamlined Sales Tax Project, calls upon Congress to pass legislation to force remote sellers to charge and collect sales and use taxes once the states have simplified and unified their sales tax systems. [FN270]

2. International Income Taxes: Economic Presence and Location of Production

a. Focusing on Location of Production Leads to Adverse Tax Consequences

This Subsection will argue that the United States and other OECD member States have, despite assertions that traditional tax principles must be preserved, moved toward an economic presence test for cross-border e-commerce income tax purposes, a significant departure from traditional [p. 391] international tax principles that focused on the need for a physical presence within a taxing state. [FN271]

First, the OECD member States agreed that physical aspects of the network (for example, a computer server or any other computer equipment that performs core business functions) could now lead to a taxable presence within foreign countries in some circumstances, significantly diluting the traditional permanent establishment principle for e-commerce activities. [FN272] As discussed, the main problem with this approach is that a computer server need not have any geographic connection to income-producing activities--unlike a traditional permanent establishment, such as a retail store. Hence, a permanent establishment is now elective (at least for medium to large firms with sufficient resources for tax planning) because a company can choose to lease a server in any country they wish and ensure that software functions within the server perform integral aspects of the cross-border transaction. [FN273] As the previous discussion concerning tax planning and sales tax-free affiliates suggests, firms will manipulate their operations in order to secure tax advantages as long as incentives to do so continue to exist. Second, the OECD has tentatively proposed rules to govern the amount of profits that should be allocated to a server for tax purposes. [FN274] The focus under this approach scrutinizes the activities of the server/permanent establishment to determine what substantive economic activities are being conducted by the server/permanent establishment. Questions that need to be answered include: What types of sales are being generated by the server? How did the server acquire rights to intangible assets? What functions does the server perform? What risks does the server assume?

The impact of these two developments may lead to a fundamental shift in the approach used by taxpayers and tax authorities in their efforts to allocate profits among activities in different countries. First, the main result is a conceptual change for e-commerce transactions where taxpayers and tax authorities will no longer ask what sort of a taxable presence exists within each country (i.e., what is it?). Rather, the question that will be asked is what type of economic activity is occurring within each country [p. 392] where a server/permanent establishment is located (i.e., what does it do?). The former approach emphasized the need for a physical presence and slotted different potential candidates into categories such as stores, depots or branches. The latter approach scrutinizes the substantive economic activities taking place within the server/permanent establishment. In other words, the physical presence test has been replaced by an economic presence test that looks to the activities taking place at the location where an e-commerce good or service is ostensibly being produced for sale. [FN275]

The approach may lead to some adverse outcomes for tax authorities. First, the OECD E-commerce Profit Attribution Report appears to assume that taxpayers will be prevented from attributing profits to a server because, after taking into consideration the operations of a hypothetical server/permanent establishment, the server performs negligible profit-making activities. [FN276] But, in order to determine that a server constitutes a permanent establishment, an earlier finding is required that determines that the server performs integral aspects of a cross-border business transaction. [FN277] This finding seems contrary to the later finding by the OECD E- [p. 393] commerce Profit Attribution Report that a server does not perform any real value-adding activities. [FN278]

Aggressive taxpayers and tax authorities from e-commerce importing nations may take a different perspective. [FN279] Creative taxpayer arguments will likely be used to justify the allocation of profits to the jurisdiction where the server is owned or leased. For example, a taxpayer with a server leased within a tax haven may argue that the server/permanent establishment acts as the global sales, procurement and distribution center [FN280] for the organization and assumes significant risks in order to bring the products to the market place. The taxpayer could argue that the server was placed in the tax haven as a result of the sophisticated network security maintained by the particular hosting facility where the server resides. One outside hacker attack could take out the server, knocking out world-wide sales for an indefinite period. The server/permanent establishment hence assumes great risk and should be appropriately compensated for that risk by allocating a significant part of all sales profits to the server/permanent establishment. [FN281]

Second, as discussed, the ownership and location of intangible assets has traditionally been a sore point for international tax principles. [FN282] As a result of the difficulty in identifying what part of a legal entity owns the intangible rights, traditional international income tax rules allocate the [p. 394] costs of creating the intangible asset among the various parts (for example, permanent establishments) of the global operations of a single legal entity. [FN283] Accordingly, a taxpayer could argue that its server/permanent establishment owns part of a particular intangible (for example, a Web site) that was developed by the head office and should be compensated for the use of the intangible rights to generate sales for the entire organization. [FN284]

Third, the OECD E-commerce Profit Attribution Report offers the tantalizing suggestion that intangible assets created by the server/permanent establishment, including "e-commerce marketing intangibles" will belong to the server/permanent establishment. [FN285] Software within the server can be designed to data mine Web site visitors, compile marketing information, and "sell" this information to the head office, generating profits for the permanent establishments (and creating an offsetting deduction for payments by the head office to lower its profits in a high tax jurisdiction). Or perhaps the software will customize the Web page of site visitors (by maintaining records on these visitors through "cookies") in order to enhance sales through targeted marketing, raising an additional argument that the server/permanent establishment should participate in the profits of Web site sales. Finally, the software within the server could contract with a third-party Web advertiser so that targeted banner ads appear on the Web site (again, the direct marketing efforts will rely on previous data collected by the server), suggesting that the server/permanent establishment should be entitled to advertising revenues from the third party advertiser. These are but a few of the options available to taxpayers to bolster their arguments that revenues and profits should be allocated to the server/permanent establishment. [FN286]

In summary, the combination of the two reform efforts may lead to adverse [p. 395] consequences for tax authorities throughout the world as profits are diverted away from the countries that have a meaningful connection to the profit-making activities (i.e., the country where an e-commerce business is based, the country where the intangible assets were developed or the country where the e-commerce good or service is purchased). Accordingly, the new rules will not effectively share tax revenues between e-commerce exporting nations and e-commerce importing nations. The increasing complexity surrounding taxpayer compliance strategies and tax administration (for auditing purposes, tax authorities will somehow have to scrutinize thousands of lines of computer code to determine what functions the server is performing) might additionally undermine the international income tax system. By clinging to traditional principles, United States tax authorities and other OECD member State tax authorities have inhibited the ability of their tax systems to protect real world norms.

b. Focusing on Location of Consumption is the Preferred Alternative

A more sensible solution would involve ensuring that servers do not constitute permanent establishments under any circumstances and then creating rules to ensure that e-commerce importing nations can tax profits associated with the import of significant amounts of e-commerce goods and services. Instead of focusing on the location of production, the reform efforts should focus on the location of consumption, as advocated by a number of commentators. [FN287] The most contentious issue would surround the potential use of an economic presence test based on sales in the jurisdiction of consumption (for example, sales above one million dollars per year) [FN288] because traditional international income tax principles have only [p. 396] allocated taxing jurisdiction to importing countries if a permanent establishment was located within the borders of the importing country. But the OECD is apparently prepared to dilute the physical presence requirement in favor of an economic presence test based on the location of production, which appears contrary to these principles as well. [FN289] The use of the location of consumption to allocate tax revenues to importing countries can be justified under a number of theories, including the fact that e-commerce importing countries created the market opportunities that enabled the profits to be made through the cross-border

transaction (for example, by subsidizing the physical network infrastructure within their country that permitted the transaction to go forward). [FN290] Ultimately, allocating taxable profits to the location of consumption can be seen as a practical political measure that will satisfy both net e-commerce exporting nations and net e-commerce importing nations. A similar political agreement was reached by United States in the 1960s when states and the business community agreed to move from a two-factor apportionment formula involving only payroll and property to a three-factor formula that added a sales factor for the place of consumption. [FN291] Finally, allocating revenues according to the location of consumption will go a long way toward combating the income shifting and harmful tax competition that is encouraged by the recent server/permanent establishment proposals. The act of consumption requires a real human being who must necessarily be situated somewhere in geographic space, [FN292] whereas the act of production of intangible assets can be diverted to a location that does not have any meaningful connection to any real value-adding economic activity.

[p. 397]

B. DEVELOPING INTERNET-BASED TECHNOLOGICAL SOLUTIONS: FIGHTING FIRE WITH FIRE

Many of the tax challenges posed by the nature of the network can be addressed through technological solutions that take advantage of Internet-based software and hardware technologies. In a previous work, I outlined a two-stage process for tax authorities seeking to address these challenges through technological measures. [FN293] First, tax authorities should identify the critical values they wish to see preserved, such as the desire to maintain their ability to collect taxes to pay for public goods. [FN294] Second, the regulators should look to see whether Internet technological solutions can help to preserve these values. [FN295] The SSTP represents the most comprehensive attempt yet to employ Internet technologies in the tax collection process. The SSTP Uniform Agreement sets out a number of measures that would encourage technological solutions to the daunting compliance issues surrounding remote online sales to consumers. [FN296] At this point, the adoption of Internet technologies by Internet companies is voluntary as a result of Commerce Clause concerns. [FN297] A pilot project is being conducted by four states (Kansas, Michigan, North Carolina and Wisconsin) that have agreed to implement and test the technological solutions. [FN298]

The SSTP suggests that online vendors (or any remote vendors) should be able to register online once with a central registration system (remote vendors must currently register with each state through a paper registration system). [FN299] Vendors can adopt automated Internet tax collection systems under three options: (a) sellers can contract with a Certified Service Provider (i.e., an unrelated online company that acts as a tax intermediary) that [p. 398] can fulfill the sellers' collection obligations; (b) sellers can adopt an approved software tax collection program to automatically charge and collect sales taxes; or (c) large sellers (i.e., generally sellers with over $500 million in annual sales) are permitted to use their own customized tax collection software program. [FN300]

The states will maintain an online database with all relevant tax rates (assigned to zip codes) that can be accessed by the online intermediaries or the software programs employed by the remote vendors. [FN301] In order to ease the compliance burden, online vendors will be permitted to be

compensated by keeping a specified portion of the taxes collected. [FN302] The following example discusses how the automated sales tax collection process would work: [FN303] Joe Customer, residing in Utah, accesses the Web page for an online company called "BooksForYou.com," located in California, to purchase a digitized copy of The Great Gatsby. Joe decides to order the digital book, and is prompted for his home address (although a zip code will suffice if Joe is concerned about privacy). BooksForYou.com has previously contracted with an online tax collection intermediary called "WeLuvTaxes.com" (a Certified Service Provider under the SSTP proposal) that automatically accesses a state government sponsored online registration service to determine the appropriate Utah and local tax rate based on Joe's zip code. Working with the BooksForYou.com Web site, the intermediary instantly shows Joe the retail price of a digitized Gatsby, the applicable sales tax and the final total. If Joe purchases the product, then the intermediary will "unbundle" the sales tax payment and remit it to the online government clearinghouse that has been set up for tax purposes. From the perspective of the consumer and online retailer, all of this will function automatically, instantaneously and seamlessly.

In addition to domestic sales tax systems, consumption and income tax reform efforts in the international arena could benefit from similar technological solutions. As I have discussed in detail elsewhere, [FN304] a possible approach for the international arena could involve the use of a secure extranet to exchange cross-border taxpayer information, the promotion of identification technologies to identify the geographic location of consumption and an online international tax clearinghouse to automate the tax collection process. It is recognized, however, that tax authorities are unlikely [p. 399] to implement a comprehensive technological solution unless, and until, it is demonstrated empirically that significant revenues are being lost. [FN305] Recent reform efforts that emphasize the need for a greater exchange of information may call for superior technological mechanisms to exchange taxpayer information. There is a growing awareness among governments that a number of problems that plague the international arena, including tax evasion on cross-border portfolio income, money laundering and harmful international tax competition, can be curtailed through a greater sharing of information among national tax authorities. An extranet (i.e., a part of the Internet used by participating tax authorities that has been secured from outside access) could be used to securely exchange taxpayer information among participating national tax authorities.

Automated tax collection in the international sphere has also been given a boost by a report released in February, 2001 by the Technology Technical Advisory Group ("TAG") to the OECD that discusses technological solutions for consumption taxes (i.e., VATs) on cross-border e-commerce transactions. [FN306] The report considers a number of Internet-based technological options available to tax authorities and concludes that the best option would likely involve the imposition of tax collection obligations on an online intermediary along with a clearinghouse system. [FN307] Other OECD groups involved in e-commerce consumption tax reform contemplate similar Internet technologies to facilitate the tax collection process. [FN308] All of these approaches, however, will need to take into consideration the nature of cyberspace and its evolving values. Even efficient technological solutions will be unacceptable to the extent they intrude on cyberspace values that need to be preserved. The SSTP suggests steps to protect online consumer privacy. [FN309] For example, the automated tax collection system must be designed so that "the fundamental precept of anonymity is respected, and that personally

identifiable information is only used when [p. 400] necessary" for the administration of the collection system. [FN310] Further, the Certified Service Providers must "provide such technical, physical and administrative safeguards so as to protect personally identifiable information from unauthorized access and disclosure." [FN311]

C. MISCELLANEOUS TOOLS: THE ROAD TO INCOHERENT TAX POLICY

Tax authorities may begin to resort to other "tools" to the extent they feel they cannot effectively tax certain e-commerce transactions. For example, a state government that is suffering revenue losses as a result of its inability to apply its sales tax to out-of-state sales could increase sales tax rates on the purchase of in-state goods (perhaps inadvertently driving more businesses to incorporate tax free online affiliates). Alternatively, the state could impose a special excise tax on the personal use of networking equipment (for example, personal computers or an MP3 player) that permit consumers to order and access online products. Or state governments may implement or increase taxes on fees paid to access the Internet. [FN312]

Further, governments could resort to a greater use of income taxes to capture the value added at the production stage to the extent that consumption taxes (for example, value-added taxes and sales taxes) are thought to be deficient. Alternatively, governments may resort to a greater use of consumption taxes if income taxes cannot effectively tax highly mobile e-commerce profits. This development may create an overall more regressive tax system to the extent that governments are incapable of applying progressive income taxes on profits derived from Internet commerce. [FN313]

As a result of the dynamic nature of the digital biosphere, it is difficult to predict how these developments will play out. It does not appear possible at this point to develop a "unified theory" for e-commerce taxation.

D. SUMMMARY

Tax authorities have begun tentative reform efforts to address the challenges presented by the Internet. The dynamic interactive process involving [p. 401] laws, norms, cyberspace and the network has led in many circumstances to a fundamental re-examination of traditional tax laws and principles. The two reform efforts emphasized within this Article provide insight into the appropriate role of tax law within the digital biosphere. The efforts by the Streamlined Sales Tax Project represent an example of how tax law can potentially co-exist in a dynamic equilibrium with norms, cyberspace and the network. The Project's efforts recognize that traditional tax principles (for example, the substantial nexus or physical presence test) must give way to effectively protect other real world norms, such as the desired neutral tax treatment between online and traditional sales and the desire to effectively collect tax revenues to pay for public goods. The SSTP's efforts are also aligned with the nature of the network because an automated online collection process is proposed that takes advantage of Internet technologies to help enforce the law.

Two major road-blocks may still frustrate the ultimate implementation of the SSTP's solution. First, state legislators may reduce the simplification and harmonization aspects of the proposal to

the point where Commerce Clause concerns surrounding compliance costs will frustrate the ability to develop and maintain the economic presence test. Second, the technological solution may come to be perceived by cyberspace participants as an unwarranted intrusion into their space, bringing resistance to the change if the reform efforts are perceived to harm emerging cyberspace values (for example, concerns surrounding anonymity and data privacy). The OECD's reform efforts with international income tax offer an example of the poor fit that tax law can have with norms, the network and cyberspace within the digital biosphere. By creating a virtual analog (i.e., a computer server/permanent establishment) for a tax rule that sought control over physical space, the OECD proposal is not aligned with the nature of the network. Worse, the proposal will encourage taxpayer strategies that could constrain the ability of tax authorities to effectively tax cross-border e-commerce profits. The OECD has additionally come up with profit attribution rules that emphasize an economic presence test based on the location of production, which is in direct opposition to traditional tax principles. The proposed approach does not protect real world norms because it encourages abusive tax planning efforts and does not effectively share revenues with countries that import significant e-commerce goods and services.

From an overall tax policy perspective, it is difficult to predict how these developments will play out due in part to the dynamic nature of change taking place within the digital biosphere. A theoretically coherent tax policy approach may not be possible until the Internet reaches a more stable equilibrium. Perhaps the most remarkable lesson for tax policy is that technology--and not tax policy--will drive tax laws in many circumstances [p. 402] as a result of the emergence of the Internet. [FN314]

What are the broader implications of the digital biosphere for policy makers? The digital biosphere calls for a flexible law-making process that is both proactive and reactive. The law must be proactive in the sense that it should strive to protect norms by signaling [FN315] what type of behavior is desired despite the difficulties in forecasting developments within the network/technosphere or the cyberspace/noösphere. The law must also be reactive in the sense that traditional legal rules in many circumstances will need to be modified or replaced to take into account the nature of the network/technosphere and the cyberspace/noösphere. Mandated technological solutions will likely play an increasing role within legal reform efforts to ensure that laws can be enforced. Further, legal responses will likely have to take on an unprecedented coordination of different jurisdictions to obtain the desired result. Accordingly, a consensus will need to be developed concerning the norms and values that call for protection, an obviously difficult task in a world with disparate convictions concerning local values, along with desires to preserve sovereign control over legal systems. Fear of federal preemption of state taxing powers is likely one of the main factors that is driving the SSTP process. In the international tax context, a workable solution may require the development of centralized political institutions that have the power to bind participating tax jurisdictions, a development that appears currently unrealistic in an era where governments jealously guard tax sovereignty. Environmental policy makers have been struggling with these political/institutional problems for decades, and their consensus-building efforts and resulting legal policy approaches may prove helpful. [FN316] In any event, more research is required to develop new theories to assist in understanding the appropriate role for law within the digital biosphere.

[p. 403]

V. CONCLUSION

The Internet is significantly changing aspects of United States domestic and international tax policy, despite early efforts to preserve traditional tax laws and principles. The nature of the Internet--which for analytical purposes is separated into two components, the network (the physical infrastructure of the Internet along with software protocols) and cyberspace (socially constructed Internet forums for human interaction)--has required a re-evaluation of fundamental tax principles. This Article discussed the process that is driving this radical change by comparing the Internet to a digital biosphere, a place where law, norms, the network and cyberspace interact in a complex non-linear dynamic equilibrium that resembles, to a certain extent, the workings of Earth's biosphere.

The digital biosphere also presents a useful model to assist in evaluating potential or existing reform efforts. On the one hand, United States state tax authorities are throwing out many traditional taxing principles in a pragmatic attempt to enable the effective taxation of many e-commerce transactions. These reform efforts show how tax law can effectively coexist with the other elements of the digital biosphere by aligning legal rules with the nature of the network and protecting real world norms without unduly interfering with emerging cyberspace values. On the other hand, tax authorities have struggled to preserve traditional international income tax principles, but have rendered a traditional physical presence test meaningless in favor of an economic test that focuses on activities taking place at the location of production. This reform effort fails to properly protect norms because law is not properly aligned with the nature of the network.

If tax authorities fail to develop tax rules that can effectively tax e-commerce transactions, they may resort to alternative strategies in order to protect their revenue bases. This development could have the unfortunate consequence of moving tax systems toward greater incoherence from a tax policy perspective, inhibiting the ability of governments to effectively tax certain transactions and leading to greater revenue losses. It is difficult to predict how these developments will play out as a result of the dynamic change taking place throughout the Internet. A "unified theory" of e-commerce taxation may not be possible until more stability is achieved within the digital biosphere.

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[FN1]. See OFF. OF TAX POL'Y, U.S. DEP'T OF THE TREASURY, SELECTED TAX POLICY IMPLICATIONS OF GLOBAL ELECTRONIC COMMERCE § 1, at 3 (Nov. 1996) [hereinafter TREASURY REPORT], available at http://www.ustreas.gov/taxpolicy/library/internet.pdf (on file with the Connecticut Law Review). See also AUSTRALIAN TAX OFF., TAX AND THE INTERNET: DISCUSSION REPORT OF THE ATO ELECTRONIC COMMERCE PROJECT, at vi (Aug. 1997) [hereinafter AUSTRALIAN REPORT], available at http://downloads.ato.gov.au/content/business/downloads/ECOM_P1.rtf (on file with the Connecticut Law Review); ORG. FOR ECON. CO-OPERATION & DEV. COMM'N ON FISCAL AFFAIRS, ELECTRONIC COMMERCE: TAXATION FRAMEWORK CONDITIONS 3 (Oct. 1998) [hereinafter OECD TAXATION FRAMEWORK CONDITIONS], available at http://www.oecd.org/pdf/M000015000/m00015517.pdf (on file with the Connecticut Law Review); A EUROPEAN INITIATIVE IN ELECTRONIC COMMERCE, COM(97)157 § 56, at 19 (1997) [hereinafter EUROPEAN REPORT], available at http://europa.eu.int/ISPO/ecommerce/legal/documents/com97-157/ecomcom.pdf (on file with the Connecticut Law Review); MINISTER'S ADVISORY COMM'N ON ELEC. COMMERCE, CAN. CUSTOMS & REVENUE AGENCY, ELECTRONIC COMMERCE AND CANADA'S TAX ADMINISTRATION: A REPORT TO THE MINISTER OF NATIONAL REVENUE FROM THE MINISTER'S ADVISORY COMMITTEE ON ELECTRONIC COMMERCE § 2.4.3.3 (Apr. 1998) [hereinafter CANADIAN REPORT], available at http://www.ccraadrc.gc.ca/tax/business/ecomm/ecom2e.html (on file with the Connecticut Law Review); THE WHITE HOUSE, A FRAMEWORK FOR GLOBAL ELECTRONIC COMMERCE pt. 1.1 (July 1997) [hereinafter WHITE HOUSE REPORT], available at http://www.ecommerce.gov/framewrk.htm#1.%20CUSTOMS%C20AND%20TAXATION (on file with the Connecticut Law Review); Press Release, Inland Revenue & HM Customs & Excise, Electronic Commerce UK Policy on Taxation Issues (Oct. 1998), available at http://www.inlandrevenue.gov.uk/e-commerce/release128_98.htm (on file with the Connecticut Law Review).

[FN2]. See discussion infra Part IV.A.1. Thirty-two of the forty-five states that impose sales taxes are participating in the SSTP and have agreed to adopt the same rules for their sales tax systems. Streamlined Sales Tax Project, List of Participating States, at http://www.geocities.com/streamlined2000/participatingstates.
html (last visited Oct. 31, 2001) (on file with the Connecticut Law Review).

[FN3]. Consider the example of an individual who resides in State A and who buys a novel at a local bookstore. The retail price for the novel is $10. The bookstore is legally obligated to assess a local and state sales tax at a rate of, say, 6% or $0.60, for a total retail price, plus sales taxes, of $10.60. The individual pays this amount to the bookstore, and bookstore must remit the $0.60 to

the relevant tax authority.

[FN4]. Quill Corp. v. North Dakota, 504 U.S. 298, 315 (1992) (mandating a bright line physical presence test in the context of mail order sales). See Internet Tax Freedom Act of 1998, Pub. L. No. 105277, § 1101, 112 Stat. 2681-719 (West. Supp. 2001) (prohibiting the passage of new or discriminatory sales tax laws by state and local governments). See also discussion infra Part III.A.1.

[FN5]. For example, consider the same individual who resides in State A and accesses the Web site of an online bookstore based in State B. The individual purchases the book which is shipped by mail into State A. State A is prohibited from forcing the online bookstore to charge and collect the sales taxes on the sale of the novel. Quill, 504 U.S. at 315. State A hence loses out on the $0.60 in tax revenues.

[FN6]. See discussion infra Parts III.B & IV.A.2. E-commerce has been defined as "any transaction conducted over the Internet or through Internet access, comprising the sale, lease, license, offer, or delivery of property, goods, services, or information, whether or not for consideration and includes the provision of Internet Access." Internet Tax Freedom Act § 1104(3).

[FN7]. Consider the example of a music retailer based in the United States. If the music retailer wanted to expand its sales to, say, Canada, the retailer would traditionally set up a retail outlet in Canada. This retail outlet would fulfill the physical presence requirement under the tax treaty negotiated between the United States and Canada. Convention on Double Taxation, Sept. 26, 1980, U.S.-Can., T.I.A.S. No. 11,087, at 7. Accordingly, the Canadian tax authorities would be permitted to tax the profits derived from the sale of all products associated with the Canadian music retail outlet. See id.

[FN8]. For example, consider an online music retailer based in the United States that sells digital music (for example, MP3 files) to customers in Canada. If the Canadian customer downloads the music from a computer server based in Canada (that is owned or leased by the United States company), then the Canadian tax authorities may be able to tax the profits associated with this server because it qualifies as a "permanent establishment" (i.e., the server is deemed to meet the requisite physical presence test) under a revised United States-Canada tax treaty.

[FN9]. The main problem with the proposal is that the location of a computer server need not necessarily have any connection with its income-producing activities. A server is computer hardware that is part of the physical infrastructure of the Internet, which is essentially a borderless medium.

[FN10]. It is argued that national tax authorities have rendered the physical presence test meaningless because companies easily manipulate the ostensible income producing activities of a computer server by placing their Web sites on servers located in low or nil tax jurisdictions or by changing the functions performed by the software within the server.

[FN11]. See VLADIMIR I. VERNADSKY, THE BIOSPHERE 19 (Copernicus Books 1998) (1926). A full English translation of this remarkable book was apparently not available until 1998. Id.

[FN12]. See discussion infra Part III.A.3.

[FN13]. See discussion infra Part III.B.2.

[FN14]. See discussion infra Part IV.B.

[FN15]. ACLU v. Reno, 929 F. Supp. 824, 830 (E.D. Pa. 1996) ("The Internet is not a physical or tangible entity, but rather a giant network which interconnects innumerable smaller groups of linked computer networks. It is thus a network of networks."), aff'd, 521 U.S. 844 (1997). More technically, the "Internet is an interconnection of packet-switched networks based on the TCP/IP protocol suite." Michael J. Riezenman, Beneath the Internet: Explosive Growth Drives Improvements to the Infrastructure, IEEE SPECTRUM, Jan. 2001, at 54.

[FN16]. Other sources have comprehensively discussed these challenges, and the analysis will be directed at areas that have not been previously explored within the literature that discusses the taxation of e-commerce. The goal of this Section is to provide insight into the relevant attributes of the network in order to permit subsequent analysis to move forward. See, e.g., KARL FRIEDEN, CYBERTAXATION: THE TAXATION OF E-COMMERCE (2000) (examining global e-commerce taxation, sales and use taxation, state income taxation, applicability of physical presence and nexus tests, value added taxes and e-commerce and federal and international income taxation on e-commerce); Charles E. McLure, Jr., Taxation of Electronic Commerce: Economic Objectives, Technological Constraints, and Tax Laws, 52 TAX L. REV. 269 (1997) (examining the proper objectives of tax policy, how technological realities affect the achievement of those objectives, how existing laws and treaties affect what may be possible and how e-commerce development may require a rethinking of current law). See also Arthur J. Cockfield, Balancing National Interests in the Taxation of Electronic Commerce Business Profits, 74 TUL. L. REV. 133, 140-66 (1999) [hereinafter Cockfield, Balancing National Interests] (discussing the existing rules relevant to the income taxation of international e-commerce transactions, challenges to these traditional rules posed by the emergence of e-commerce and the principles that should guide the resolution of these conflicts); Arthur J. Cockfield, Transforming the Internet into a Taxable Forum: A Case Study in E-Commerce Taxation, 85 MINN. L. REV. 1171, 1221-56 (2001) [hereinafter Cockfield, Transforming the Internet] (discussing how internet technologies can assist tax authorities in taxing international e-commerce transactions). This Article builds on the research and analysis conducted in these previous two articles.

[FN17]. TREASURY REPORT, supra note 1, § 7.2.3.1, at 25.

[FN18]. For a discussion on remote sales activities, see FRIEDEN, supra note 16, at 35-46.

[FN19]. For discussion, see ORG. FOR. ECON. CO-OPERATION & DEV., THE ECONOMIC AND SOCIAL IMPACT OF ELECTRONIC COMMERCE: PRELIMINARY FINDINGS AND RESEARCH AGENDA 64-66 (1999) [hereinafter OECD ELECTRONIC COMMERCE

REPORT].

[FN20]. For a discussion of tax compliance issues, see AUSTRALIAN REPORT, supra note 1, §§ 8.1.1.-8.7.7; CANADIAN REPORT, supra note 1, § 4.2.

[FN21]. See discussion infra Part III.A.

[FN22]. See ORG. FOR ECON. CO-OPERATION & DEV., UNDERSTANDING THE DIGITAL DIVIDE (2001), available at http://www.oecd.org/pdf/M00002000/M00002444.pdf (on file with the Connecticut Law Review) [hereinafter DIGITAL DIVIDE].

[FN23]. One important indicator of the international digital divide is the number of access lines to the Internet per 100 inhabitants of a country. The OECD membership includes thirty countries that generally constitute the wealthiest nations in the world. Org. for Econ. Co-operation & Dev., OECD Member Countries, at http://www.oecd.org/oecd/pages/home/displaygeneral/0,3380, EN-countrylist-0-nodirectorate-no-no-159-0,FF.html (last visited Oct. 31, 2001) (on file with the Connecticut Law Review). In 1998, OECD countries on average had 72.1 access lines per 100 inhabitants. DIGITAL DIVIDE, supra note 22, at 7. Non-OECD countries had an average of 7.8 access lines per 100 inhabitants. Id. The number drops to 1.6 lines per 100 inhabitants for countries with the lowest Gross Domestic Product per capita. Id.

[FN24]. Id. at 18-23 (discussing how gender, household income, age and ethnicity play a role in determining access to the Internet).

[FN25]. A bifurcated tax policy approach already exists to a certain extent. OECD countries--generally made up of wealthier nations--employ the OECD Model Tax Treaty as the starting point in their tax treaty negotiations. See COMM'N ON FISCAL AFFAIRS, ORG. FOR ECON. CO-OPERATION & DEV., MODEL TAX CONVENTION ON INCOME AND ON CAPITAL (1997) [hereinafter OECD MODEL TAX TREATY]. The United Nations has its own model tax treaty that contains provisions that are generally more favorable to capital importing nations, which tend to be lesser developed countries ("LDCs") or countries with economies in transition. See generally U.N. DEP'T OF INT'L ECON. & SOC. AFFAIRS, U.N. MODEL DOUBLE TAXATION CONVENTION BETWEEN DEVELOPED AND DEVELOPING COUNTRIES, U.N. Doc. ST/ESA/PAD/SER.E/21, U.N. Sales No. E.01.XVI.2 (2001). Countries such as the United States agree at times to insert provisions based on the United Nations model when they negotiate tax treaties with countries with transitional economies. For example, the United States-Mexico tax treaty contains a restricted force of attraction principle in the business profits provision, which permits Mexico to expand its taxing jurisdiction in some circumstances. See Convention for Avoidance of Double Taxation and the Prevention of Fiscal Evasion with Respect to Income Taxes, Sept. 18, 1992, U.S.-Mex., art. 7, § 1, S. TREATY DOC. NO. 103-7 (1993), available at http:// ftp.fedworld.gov/pub/irstrty/mexico.pdf (on file with the Connecticut Law Review).

[FN26]. See generally Arthur J. Cockfield, Electronic Commerce, Developing Countries and Declining Tax Revenues, in UNESCO ENCYCLOPEDIA OF LIFE SUPPORT SYSTEMS (forthcoming 2002) (manuscript § 6.31.3.6, on file with the Connecticut Law Review).

[FN27]. OECD ELECTRONIC COMMERCE REPORT, supra note 19, at 29 (citing a study that indicates the United States accounts for roughly eighty percent of the global total of e-commerce).

[FN28]. David R. Tillinghast, The Impact of the Internet on the Taxation of International Transactions, 50 BULL. FOR INT'L FISCAL DOCUMENTATION 524, 525 (1996). See TREASURY REPORT, supra note 1, § 7.1.5, at 23 (arguing that taxation based on the location of residence of a business may be appropriate for e-commerce purposes).

[FN29]. The pre-eminent example of this regional clustering phenomenon would be Silicon Valley, located between San Jose and San Francisco in the Bay Area of California. There are a number of additional cluster examples within the United States (for example, the Boston, Austin or New Jersey-New York clusters) and elsewhere (for example, the Ottawa region in Canada or the so-called Silicon Valley East region in India). For a discussion of the clustering phenomenon, see DANIEL PIAZOLO, THE NEW ECONOMY AND THE INTERNATIONAL REGULATORY FRAMEWORK 15 (2001), available at http:// papers.ssrn.com/so13/delivery.cfm/ssrn_id263002_code010326510.pdf? abstract'd=263002 (on file with the Connecticut Law Review).

[FN30]. For example, start-up companies tend to be located geographically close to their financiers (for example, venture capitalists) so that the financiers can monitor the activities of the company to ensure that management meets stipulated targets. A venture capitalist may tie additional rounds of financing to the performance of the financed company. For a discussion of relationships between venture capitalists and the companies that they fund, see William A. Sahlman, The Structure and Governance of Venture Capital Organizations, 27 J. FIN. ECON. 473 (1990).

[FN31]. States and provinces that allocate taxable income pursuant to an apportionment formula (such as sales, payroll and property in a particular jurisdiction) may have to change the weighting factors in the apportionment formula in order to match historical revenue-sharing practices. For a discussion of state corporate tax issues in the context of e-commerce, see Charles E. McLure, Jr., Implementing State Corporate Income Taxes in the Digital Age, 53 NAT'L TAX J. 1287 (2000).

[FN32]. This media was traditionally collected and transmitted via separate routes such as telecommunications networks or cable networks. All of these different forms of information can now be stored within computer servers (essentially, computers that have been networked to the Internet) and exchanged among different networks through a common communications protocol (TCP/IP). See Riezenman, supra note 15, at 54.

[FN33]. Consider as an example a tax auditor who wishes to access transactional records to determine a company's net income. A company with Internet transactions may maintain all of these records in digital form. An outside auditor could be confronted with a database filled with computer code. Even if the auditor gains access to the digital records, she may not be able to differentiate the transactional records from other stored digital data (which, in any event, may be encrypted) unless the company cooperates and organizes all of this data for the auditor. United States tax rules permit the destruction of hard copy records and the deletion of original

computerized records after the taxpayer has complied with certain requirements to store these records in an electronic storage system. Rev. Proc. 97-22, 1997-13 I.R.B. 9, § 7. For further discussion, see Arthur Cockfield, Tax Compliance Issues for U.S. Companies with International Electronic Commerce Transactions, 20 TAX NOTES INT'L 223, 227 (Jan. 10, 2000).

[FN34]. Packet switching technology permits packets to travel via distinct paths by placing a header with instructions on the location of the final destination (i.e., the Internet Protocol ("IP") address) on the Internet. The packets are transmitted through "routers" or computers that contain information on all the IP addresses on the network.

[FN35]. But see GLOBAL CYBERSPACE JURISDICTION PROJECT, AM. BAR ASS'N, ACHIEVING LEGAL AND BUSINESS ORDER IN CYBERSPACE: A REPORT ON GLOBAL JURISDICTION ISSUES CREATED BY THE INTERNET, LONDON MEETING DRAFT 159 (2000) [hereinafter ABA LONDON DRAFT] (discussing the potential use of "choke points" to regulate online securities offerings), available at http://www.abanet.org/buslaw/cyber/initiatives/draft.rtf (on file with the Connecticut Law Review).

[FN36]. See discussion infra Part IV.B.

[FN37]. An information good can be defined as any good or service that has been digitized. CARL SHAPIRO & HAL R. VARIAN, INFORMATION RULES: A STRATEGIC GUIDE TO THE NETWORK ECONOMY 3 (1999) (noting that anything digital can be considered an information good, including books, databases, magazines, movies, music, stock quotes and Web pages).

[FN38]. Id. See also Mark Lemley & David McGowan, Legal Implications of Network Economic Effects, 86 CAL. L. REV. 479, 488-500 (1998).

[FN39]. See discussion infra Part III.B.3.

[FN40]. The economics of information goods does not appear to have been applied in the tax field, but has attracted significant attention concerning intellectual property issues and the Internet. See, e.g., Eric Schlachter, The Intellectual Property Renaissance in Cyberspace: Why Copyright Law Could Be Unimportant on the Internet, 12 BERKELEY TECH. L.J. 15, 21-24 (1997) (reviewing economic theory surrounding the creation and distribution of digital works and concluding that, as a result of cross-subsidization of related artistic works, intellectual property may receive a market price of zero while still permitting the creator to be rewarded indirectly through the cross-subsidization of related works).

[FN41]. For a discussion of trading in copyrighted works and the implications for certain public interests, such as fair use, see Ruth Okediji, Givers, Takers and Other Kinds of Users: A Fair Use Doctrine for Cyberspace, 53 FLA. L. REV. 107, 146-53 (2001).

[FN42]. According to one forecast, "[t]he number of MP3 and other audio-player shipments worldwide will increase from 3.3 million in 2000 to [twenty-six] million in 2005." Must Read, WIRED, July 2001, at 61-62.

[FN43]. See, e.g., Christopher Jones, MP3: RIAA 'Waged a Campaign', WIREDNEWS, Feb. 8, 2000 (discussing how the RIAA tried to stop the release of a portable MP3 player), available at http:// www.wired.com/news/politics/0,1283,34209,00.html (on file with the Connecticut Law Review).

[FN44]. 17 U.S.C. § 1004(a) (West Supp. 2001). There are specified minimums and maximums. Id. § 1004(a)(3). The sale of a "digital audio recording medium" attracts a royalty of three percent. Id. § 1004(b).

[FN45]. Id. § 1005.

[FN46]. Id. §§ 1006 & 1007.

[FN47]. For example, a two percent royalty on an MP3 player that sells for $100 effectively raises the price by as much as two percent. However, consumers at the margin may decide to switch to a product that does not bear the royalty/tax, such as an analog recording device (for example, a cassette recorder). If consumers make such switches, then the manufacturer of the device may have to absorb part or all of the royalty/tax. The extent by which an individual or business bears a tax burden is called tax incidence. For a discussion of incidence, see RICHARD A. MUSGRAVE, THE THEORY OF PUBLIC FINANCE: A STUDY IN PUBLIC ECONOMY 227-30 (1959).

[FN48]. See discussion infra Part IV.C.

[FN49]. For a discussion on how the network enables anonymous communications, see A. Michael Froomkin, Flood Control on the Information Ocean: Living with Anonymity, Digital Cash, and Distributed Databases, 15 J.L. & COM. 395, 414-49(1996).

[FN50]. Cockfield, Balancing National Interests, supra note 16, at 180- 83. For example, tax laws sometimes mandate that businesses track the geographic location of their customers for, say, sales tax purposes. But an e-commerce vendor may be unable to locate the true identity or geographic location of its customer (assuming a customer refuses to divulge this information or provides incorrect information). Id. at 180. A vendor's server may at best be able to identify the Internet Protocol address of the ISP used by a consumer, although even the ISP may have no relationship to the consumer's home country. Id. at 180 n.209. Further, end users can employ encryption technology to protect their data from unauthorized disclosure or viewing. Id. at 180-81. "The situation is further complicated as the end consumers [are beginning to] use 'unaccounted' electronic payment systems where there they will not be identified as a party to the transaction and no independent records will be kept. Some of the new electronic payment systems, including e-cash and stored value cards, are designed to operate as unaccounted systems." Id. (internal citations omitted). Finally, the use of anonymizing technologies will inhibit the ability of vendors or tax authorities to identify the location of consumers.

[FN51]. eBay, Inc., Company Overview, at http:// pages.ebay.com/community/aboutebay/overview/index.html (last visited Oct. 16, 2001) (on file with the Connecticut Law Review).

[FN52]. Id.

[FN53]. EBAY, INC., ANNUAL REPORT 1 (2000), available at http://www.shareholder.com/ebay/annual.cfm (on file with the Connecticut Law Review).

[FN54]. I.R.C. § 61(a) (1994 & Supp. V 2000) ("[G]ross income means all income from whatever source derived, including ... gains derived from dealings in property.").

[FN55]. Tax systems often rely on a taxpayer's honest self-assessment of all of her sources of income. The system is protected to a certain extent from dishonesty by focusing tax rules on physical intermediaries, such as laws that force employers to withhold a portion of each paycheck and remit these amounts to the government. This built-in protection is reduced to the extent that the Internet encourages economic activity that disintermediates these traditional intermediaries.

[FN56]. eBay, like most commercial Web sites, will likely cooperate with an IRS audit if requested to do so, but an eBay user can likely hide her identity by providing false identifying information to eBay or through the use of an anonymizing service, such as anonymizer.com. Anonymizer.com can prevent tracking of a user's movements throughout the Internet by Web sites and hackers, shields a user's IP address, and provide general privacy assurance to an Internet user. Anonymizer.com Web site, at http://www.anonymizer.com (last visited Nov. 2, 2001) (on file with the Connecticut Law Review).

[FN57]. See AUSTRALIAN REPORT, supra note 1, § 7.3.2, at 52.

[FN58]. Id.

[FN59]. Id.

[FN60]. Id. § 8.2.6, at 72. The Australian Report reviews two options to ensure greater accountability for commercial use of IP numbers. The first option would involve "the maintenance of a public register to record the issue or transfer of IP numbers to be used commercially, with details such [as] name [and] business address." Id. The second option would involve "the licensing of commercial websites [sic] and of organi[z]ations that operate or host [these] websites [sic]." Id. See also CANADIAN REPORT, supra note 1, § 4.2.1.1 (recommending programs to identify businesses conducting e-commerce).

[FN61]. See Associated Press & Scripps Howard News Serv., IRS Not Battling Tax Scams, Senators Told, SAN DIEGO UNION-TRIB., Apr. 6, 2001, at A-17, LEXIS, News Library, Sdvt File (noting the proliferation of Web sites offering information on how to evade taxes).

[FN62]. The IRS sought and received a court order that would force credit card companies based in tax havens to divulge credit card records to determine whether United States residents are funneling funds into secret offshore bank accounts and then accessing these funds through the use of credit cards affiliated with offshore banks. SmartPros Editorial Staff, Judge Grants IRS Access to Tax Haven Credit Records, SMARTPROS (Nov. 1, 2000), at http://

accounting.smartpros.com/x26028.xml (on file with the Connecticut Law Review). See also Money Laundering: Through the Wringer, ECONOMIST, Apr. 14, 2001, at 64-65 (discussing how technologies such as anonymous electronic cash are facilitating money laundering, which is estimated by the International Monetary Fund to amount to between $500 billion and $1.5 trillion a year in laundered cash).

[FN63]. Associated Press & Scripps Howard News Serv., supra note 61 (reporting an estimate by IRS Commissioner Charles Rossotti).

[FN64]. See MINORITY STAFF OF THE PERMANENT SUBCOMMITEE ON INVESTIGATIONS OF THE COMMITEE OF GOVERNMENTAL AFFAIRS, U.S. SENATE, REPORT ON CORRESPONDENT BANKING: A GATEWAY FOR MONEY LAUNDERING 23-26 (2001) (discussing Internet gambling scams); Associated Press, supra note 61 (noting the proliferation of Web sites offering information on how to evade taxes).

[FN65]. David L. Lupi-Sher, The U.S. IRS's Fight Against Abusive Offshore Trusts, 21 TAX NOTES INT'L 176, 177 (2000).

[FN66]. See, e.g., Associated Press & Scripps Howard News Serv., supra note 61 (noting that, while tax scams have been around for years, the Internet facilitates global marketing of the scams and people concerned about tax evasion scams say there are now hundreds of Internet sites devoted to tax evasion).

[FN67]. See id.

[FN68]. The Supreme Court has recognized the power of Congress to tax all forms of income derived from any source. Comm'r v. Glenshaw Glass, 348 U.S. 426, 430 (1955) (noting that "the Court has given a liberal construction to this broad phraseology in recognition of the intention of Congress to tax all gains except those specifically exempted"). See also I.R.C. § 61 (1994 & Supp. V 2000) (defining gross income as "all income from whatever source derived").

[FN69]. Associated Press & Scripps Howard News Serv., supra note 61 (discussing an IRS raid on dozens of tax evasion promoters and 117 criminal convictions to illustrate that they are "making inroads").

[FN70]. "Day in Court" May be Costly for Frivolous Tax Case Filers, I.R.S. News Release IR-2001-59 (June 27, 2001), 2001 IRB LEXIS 239.

[FN71]. By undesirable, it is meant that the network could develop in such a way as to make it even more difficult for tax authorities to assert legal control over Internet users and their corresponding economic activity.

[FN72]. Internet Corp. for Assigned Names & Numbers, About ICANN, at http://www.icann.org/general/abouticann.htm (last visited Oct. 16, 2001) (on file with the Connecticut Law Review). "The Internet Corporation for Assigned Names and Numbers ("ICANN") is the non-profit corporation that was formed to assume responsibility for the IP address space

allocation, protocol parameter assignment, domain name system management, and root server system management functions previously performed under U.S. Government contract by IANA and other entities." Id.

[FN73]. Internet Corp. for Assigned Names & Numbers, New TLD Program, at http://www.icann.org/tlds (last visited Nov. 30, 2001) (on file with the Connecticut Law Review).

[FN74]. New.net Web site, at http://www.new.net (last visited Oct. 18, 2001) (on file with the Connecticut Law Review).

[FN75]. New.net claims that roughly seventy million users can access the new domain names. New.net, Press Room, at http://www.new.net/english_press.tp (last visited Oct. 18, 2001) (on file with the Connecticut Law Review).

[FN76]. See infra notes 82-86 and accompanying text.

[FN77]. WILLIAM GIBSON, NEUROMANCER (1984) [hereinafter NEUROMANCER]. While the term cyberspace is almost invariably attributed to Gibson's Neuromancer, in fact, he used the term in an earlier short story for Omni magazine. William Gibson, Burning Chrome, 4 OMNI 72 (1982), reprinted in WILLIAM GIBSON, BURNING CHROME 168 (1986) (providing a collection of Gibson's short stories). According to Encyclopedia Britannica: "Gibson's creation of 'cyberspace,' a computer-simulated reality that shows the nature of information, foreshadowed virtual reality technology and is considered the author's major contribution to the genre." William Gibson, ENCYCLOPEDIA BRITANNICA, at http:// www.britannica.com/eb/article?eu=106537&hook=661425#661425.hook (last visited July 2001) (on file with the Connecticut Law Review).

[FN78]. NEUROMANCER, supra note 77, at 51.

[FN79]. For discussions of Gibson's works and the term cyberspace, see generally CYBERSPACE: FIRST STEPS (Michael Benedikt ed., 1991) (exploring the concept of cyberspace through a collection of original essays); Michael E. Doherty, Jr., Marshall McLuhan Meets William Gibson in "Cyberspace", COMPUTER-MEDIATED COMM. MAG.. 4, Sept. 1, 1995 (discussing the different viewpoints of McLuhan and Gibson), at http://www.december.com/cmc/mag/1995/sep/doherty.html (on file with the Connecticut Law Review).

[FN80]. Gibson founded what is now referred to as the "cyberpunk" movement in science fiction. See Po-Mo SF: William Gibson's Neuromancer and Post-Modern Science Fiction, at http:// www.georgetown.edu/irvinemj/technoculture/pomosf.html (last visited Jan. 12, 2002) (on file with the Connecticut Law Review). Traditional science fiction tended to emphasize maverick central characters like the Heroic Male who could be counted on to bravely confront evil. Gibson's novels, on the other hand, tend to focus on antihero characters with bad attitudes, a significant departure from traditional science fiction character archetypes. Further, the line between good and evil ceases to exist in many Gibson novels, as protagonists struggle against

unclear forces often comprised of multinational corporations. A wag might say that Gibson introduced very little to the science fiction genre as other authors such as Philip K. Dick had already developed similar characters and themes. These wags would be partly correct. Fredric Jameson suggests that cyberpunk fiction represents "the supreme literary expression if not of postmodernism, then of late capitalism itself." FREDRIC JAMESON, POSTMODERNISM: THE CULTURAL LOGIC OF LATE CAPITALISM 419 n.1 (1991).

[FN81]. John Perry Barlow, A Declaration of the Independence of Cyberspace, at http://www.eff.org/~barlow/Declaration-Final.html (Feb. 1996) (on file with the Connecticut Law Review).

[FN82]. "The electronic medium of computer networks, in which online communication takes place." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 452 (4th ed. 2000).

[FN83]. For a review of different conceptions of cyberspace, see MADELEINE SCHACHTER, THE LAW OF INTERNET SPEECH 7-8 (2001). See also Trotter Hardy, Property (and Copyright) in Cyberspace, 1996 U. CHI. LEGAL F. 217, 217 (1996) ("I use [cyberspace] as a shorthand way of referring to computer communications generally. Today, much of that communication takes place over the Internet ...."); Okediji, supra note 41, at 108 n.2 ("In this Article, I use the terms Internet and Cyberspace interchangeably.").

[FN84]. One court has offered the following view of cyberspace: "The resulting whole is a decentralized, global medium of communications--or 'cyberspace'--that links people, institutions, corporations, and governments around the world .... This communications medium allows any of the literally tens of millions of people with access to the Internet to exchange information." ACLU v. Reno, 929 F. Supp. 824, 831 (E.D. Pa. 1996). See also Llewellyn Joseph Gibbons, No Regulation, Government Regulation, or Self-Regulation: Social Enforcement or Social Contracting for Governance in Cyberspace, 6 CORNELL J.L. & PUB. POL'Y 475, 484 (1997) ("The term cyberspace is used to refer to communications via computer networks.").

[FN85]. M. Ethan Katsh, Dispute Resolution in Cyberspace, 28 CONN. L. REV. 953, 961 (1996).

[FN86]. See, e.g., LAWRENCE LESSIG, CODE AND OTHER LAWS OF CYBERSPACE 64 (1999) (noting that places within cyberspace express "values through the practices or lives they enable or disable."); David R. Johnson & David G. Post, The Rise of Law on the Global Network, in BORDERS IN CYBERSPACE: INFORMATION POLICY AND THE GLOBAL INFORMATION INFRASTRUCTURE 3, 13 (Brian Kahin & Charles Nesson eds., 1997) (suggesting that cyberspace consists of "various online locations" each of which "probably will develop its own set of rules").

[FN87]. Machine-to-machine information exchanges (for example, EDI technologies) hence do not take place in cyberspace, but merely form part of the software and hardware technologies that enable the Internet.

[FN88]. This point has been explained by Sir Geoffrey Vickers as follows:
The simplest discrimination--"This is a that"--(whether "that" be a cow, a contract, or a sin) is no mere finding of fact but a judgment which carves something out of the field of attention and assimilates it to a category which has been generated by previous acts of the same kind. The simplest valuation--"This should be thus"--is equally a judgment arrived at by comparing some object or event or course of events (real or imagined) with some standard which has become accepted as the appropriate norm. The simplest decision on action--"In these circumstances this should be done"-- is the selection of a response from a repertory by rules which determine what is suitable to what occasion. The categories by which we discriminate, the standards by which we value, the repertory of responses from which we select, and our rules for selection are all mental artifacts, evolved, learned, and taught by the cultural process and more or less peculiar to the culture which produces them. This process is a circular process, in which all these settings of the appreciative system are constantly being modified by their own exercise.
PHILIP H. RHINELANDER, IS MAN INCOMPREHENSIBLE TO MAN? 77-78 (W. H. Freeman and Co. 1974) (1973) (citing GEOFFREY VICKERS, VALUE SYSTEMS AND SOCIAL PROCESS 178-79 (Penguin Books 1970) (1968)). For further information on social construction and how one's perceptions are shaped by societal influence, see generally PETER L. BERGER & THOMAS LUCKMANN, THE SOCIAL CONSTRUCTION OF REALITY: A TREATISE IN THE SOCIOLOGY OF KNOWLEDGE (1966).

[FN89]. TREASURY REPORT, supra note 1, § 6.2, at 19. See also CANADIAN REPORT, supra note 1, § 2.3 ("Electronic and non-electronic transactions that are functionally equivalent should be taxed the same regardless of their form.").

[FN90]. WHITE HOUSE REPORT, supra note 1, Part 1.1.

[FN91]. Id. ("The system should be simple and transparent. It should be capable of capturing the over-whelming majority of appropriate revenues, be easy to implement, and minimize burdensome record keeping and costs for all parties.").

[FN92]. See supra note 1 and accompanying text.

[FN93]. EUROPEAN REPORT, supra note 1, ¶ 56 ("To allow electronic commerce to develop, it is vital for tax systems to provide legal certainty (so that tax obligations are clear, transparent and predictable), and tax neutrality (so there is no extra burden on these new activities as compared to more traditional commerce).").

[FN94]. OECD TAXATION FRAMEWORK CONDITIONS, supra note 1, at 3.

[FN95]. For discussion, see Arthur J. Cockfield, Tax Integration under NAFTA: Resolving the Conflict Between Economic and Sovereignty Interests, 34 STAN. J. INT'L L. 39, 57-58 (1998).

[FN96]. Certain Republican lawmakers oppose any Internet taxation as espoused in a recent "e-Contract 2000" that "pledges to 'continue legislative and oversight efforts to remove the barriers to future innovation, competition, and growth.'" Heidi Glenn, GOP Outlines Antitaxation E-Commerce Agenda, 87 TAX NOTES 875 (May 15, 2000).

[FN97]. The push for a tax-free Internet was driven, in part, by a general anti-tax sentiment from certain political circles, as exemplified by the passage, in the House of Representatives, of the Tax Code Termination Act, which strived to eliminate the Internal Revenue Code by December 31, 2002 and called for a new tax system that is "simple and fair." See Tax Code Termination Act of 1998, H.R. 3097, 105th Cong. (1998), available at http:// frwebgate.access.gpo.gov (last visited Oct. 19, 2001) (on file with the Connecticut Law Review).

[FN98]. Lawrence Friedman notes that a century's worth of research on the impact of law on society has yet to yield widely accepted answers. Lawrence M. Friedman, The Law and Society Movement, 38 STAN. L. REV. 763, 764, 770 (1986).

[FN99]. See discussion supra Part II.A.

[FN100]. See discussion infra Part IV.B.

[FN101]. LESSIG, supra note 86, at 6 (arguing that Internet hardware and software regulate behavior in cyberspace, hence "[c]ode is law") (emphasis omitted).

[FN102]. Id. at 86-95. Under the proposed digital biosphere model, the role of the market falls within the "norms" category.

[FN103]. A body of literature considers the impact of technology on culture and personhood, and a discussion of this matter is outside the scope of this Article. Marshall McLuhan studied the impact of technologies, especially communication technologies, on individuals and society. See MARSHAL MCLUHAN, UNDERSTANDING MEDIA: THE EXTENSIONS OF MAN 45 (1964). He wrote: "[a]ny invention or technology is an extension or self-amputation of our physical bodies, and such extension also demands new ratios or new equilibriums among the other organs and extensions of the body." Id. at 45. McLuhan theorized that advances in communication technologies were driving a new "global village":

After three thousand years of explosion, by means of fragmentary and mechanical technologies, the Western world is imploding. During the mechanical ages we had extended our bodies in space. Today, after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both space and time as far as our planet is concerned. Rapidly, we approach the final phase of the extensions of man--the technological simulation of consciousness, when the creative process of knowing will be collectively and corporately extended to the whole of human society, much as we have already extended our senses and our nerves by the various media.

Id. at 3-4. See also SHERRY TURKLE, LIFE ON THE SCREEN: IDENTITY IN THE AGE OF THE INTERNET 22 (First Touchstone 1997) (1995) ("Along with the movement from a culture of calculation toward a culture of simulation have come changes in what computers do for us and in what they do to us--to our relationships and our ways of thinking about ourselves."); David Lyon, Beyond Cyberspace: Digital Dreams and Social Bodies, 1 INFO. TECH. EDUC. & SOC'Y 7 (2000) (proposing a sociology of cyberspace that is historical, material and ethical). Science fiction writers, like William Gibson, often literally fuse technology with biology as a metaphor for the growing influence of technologies on our lives. In Gibson's Neuromancer, the characters "jack" directly into cyberspace through implants, and wear eye and weapon implants.

NEUROMANCER, supra note 77, at 181- 84. Gibson continues his analysis in the next two volumes of the so-called "Cyberspace Trilogy." Cyberspace itself evolves and takes on human characteristics through the use of "biochips," to the point where it becomes indistinguishable from the rest of the world. WILLIAM GIBSON, COUNT ZERO 10, 116-17 (1987). Cyberspace ultimately evolves into its own separate sentient existence. WILLIAM GIBSON, MONA LISA OVERDRIVE 259 (1988).

[FN104]. See discussion infra Part III.A.

[FN105]. EverQuest is currently the most popular multiplayer role-playing game on the Internet. EverQuest Web site, at http:// www.everquest.station.sony.com (last visited Oct. 19, 2001) (on file with the Connecticut Law Review). Over 375,000 subscribers pay a monthly fee to participate in these activities that involve creating a character and guiding this character through a virtual fantasy world, while interacting with other characters. Sony Online Entertainment Announces EverQuest: Trilogy-PC, at http://www.dagameboyz.com/g/article_730_pl.html (May 7, 2001) (on file with the Connecticut Law Review). During peak periods, more than 90,000 gamers play at the same time. Id.

[FN106]. See discussion supra Part II.D.2 (discussing European Union value-added taxes).

[FN107]. The respondents were presented with two statements: (1) "[o]nline commerce should be exempt from sales tax, in order to stimulate the growth of the Internet;" and (2) "[o]nline commerce should be subject to the same sales taxes as other commerce, so that Internet businesses do not have an artificial advantage over other businesses." MARKLE FOUND., INTERNET SURVEY: FREQUENCY QUESTIONNAIRE 10 (Nov. 2000), available at http:// www.markle.org/news/OnlineSurveyData.pdf (on file with the Connecticut Law Review). Thirty-seven percent of the adult respondents agreed with the first statement, while fifty-eight percent agreed with the second statement. Id.

[FN108]. See, e.g., Steve Bickerstaff, Shackles on the Giant: How the Federal Government Created Microsoft, Personal Computers, and the Internet, 78 TEX. L. REV. 1, 45-55 (1999).

[FN109]. Friedman, supra note 98, at 771-72 ("[T]he output of the legal system--laws, decisions, orders, and administrative behavior--leads in turn to more social change, which affects the legal culture, influences demands on the system, and starts the cycle over again."). See also A. JAVIER TREVINO, THE SOCIOLOGY OF LAW: CLASSICAL AND CONTEMPORARY PERSPECTIVES 439-45 (1996) (discussing how laws follow social changes and the ways that laws can instigate social change).

[FN110]. See, e.g., A & M Records, Inc. v. Napster, Inc., No. C 99-05183, 2000 WL 573136, at [p. 10 (N.D. Cal. May 12, 2000) (finding a genuine issue of material fact regarding application of the safe harbor exception to copyright infringement); UMG Recordings, Inc. v. MP3.Com, Inc., 92 F. Supp. 2d 349, 353 (S.D.N.Y. 2000) (finding copyright infringement by Internet music service).

[FN111]. VERNADSKY, supra note 11, at 47 (indicating that "[t]he biosphere may be regarded as a region of transformers that convert cosmic radiations into active energy in electrical, chemical, mechanical, thermal, and other forms"). The term "biosphere" was coined by a Viennese geologist named Eduard Seuss. Id. at 15. Further, the term biosphere is generally meant to refer to a Vernadskian biosphere although scientific consensus on the exact meaning of the term is lacking. Id. at 22.

[FN112]. Id. at 91.

[FN113]. Id. at 20 (noting that Vernadsky's concept of the biosphere is generally accepted today). Building on the work of Vernadsky, scientists generally accept that the Earth's life systems operate in such away as to encourage the preservation of life. See, e.g., J.E. LOVELOCK, GAIA: A NEW LOOK AT LIFE ON EARTH, at viii (1988).

[FN114]. W.I. Vernadsky, The Biosphere and the Noösphere, 33 AM. SCIENTIST 1, 9 (1945).

[FN115]. Id. at 8 ("At the same, owing to the [mighty] techniques and successes of scientific thought, radio and television, man is able to speak instantly to anyone he wishes at any point on our planet."). The concept of the noösphere was developed by Vernadsky, Edouard Le Roy and Pierre Teilhard de Chardin. Id. at 9. The word "noösphere" is composed from the Greek work noös (for mind) and sphere (to signify the envelope of the Earth). Id. at 11 n.7. See also Jennifer Cobb Kreisberg, A Globe, Clothing Itself with a Brain, WIRED, June 1995, at 3.06 (comparing Teilhard de Chardin's views concerning the noösphere to the Internet), available at http://www.wired.com/wired/archive/3.06/teilhard_pr.html (on file with the Connecticut Law Review).

[FN116]. JOHN ALLEN, BIOSPHERE 2: THE HUMAN EXPERIMENT 6 (1991).

[FN117]. See Vernadsky, supra note 114, at 9 ("Chemically, the face of our planet, the biosphere, is being sharply changed by man, consciously, and even more so, unconsciously.").

[FN118]. See, e.g., WORKING GROUP I OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS 10 (2001) (concluding that human-made carbon emissions are responsible for most global warming over the last fifty years), available at www.meto.gov.uk/sec5/CR_div/ipcc/wgl/WGI-SPM.pdf (on file with the Connecticut Law Review). But see Jeffrey Kluger, A Climate of Despair, TIME, Apr. 9, 2001, at 30 (discussing how the Bush administration has rejected the 1997 Kyoto Protocol to cut carbon dioxide emissions partly as a result of doubts concerning the science behind global warming).

[FN119]. Vernadsky's somewhat optimistic outlook was written mid-way through the Second World War when he hoped that, once the Russians and their allies were victorious over the Germans, shared democratic ideals would direct the future evolution of the biosphere. Vernadsky, supra note 114, at 10.

[FN120]. The relationship among law, real world norms, the network and cyberspace is woven out of a complex inter-relationship that defies linear thought and resembles the complex relationship that exists in the natural environment. As a result, an appropriate metaphor for the

interaction of these elements may lie in the environmental sciences.

[FN121]. See David R. Johnson & David Post, Law and Borders-The Rise of Law in Cyberspace, 48 STAN. L. REV. 1367, 1370 (1996) (noting that cyberspace requires laws distinct from those that regulate geographically defined territories); David R. Johnson & David G. Post, The New "Civic Virtue" of the Internet, in INST. FOR INFO. STUD., THE EMERGING INTERNET 23, 25 (1998) (discussing the difficulties in controlling "wrongful" conduct in cyberspace).

[FN122]. Mark Stefik has written persuasively on the importance of preserving cyberspace as a forum for experimentation. He believes that cyberspace acts as an important forum to explore the diversities and similarities of the human race and concludes:
When we see the many different faces of each other, may we recognize them as the faces of our selves. In this way the Net as a change amplifier and the Net as a portal into cyberspace and the Net as a knowledge medium can also be an agent that moves us further into the mystery of life and deeper into an understanding of who we are.
MARK STEFIK, THE INTERNET EDGE: SOCIAL, LEGAL AND TECHNOLOGICAL CHALLENGES FOR A NETWORKED WORLD 290 (1999).

[FN123]. I have elsewhere discussed the regulatory options available to governments with respect to Internet reform efforts in contexts outside of tax, where free-rider problems make the self-regulation approach unworkable. Cockfield, Transforming the Internet, supra note 16, at 1200-17.

[FN124]. Id. at 1206-17.

[FN125]. Sales taxes are taxes imposed at the point of purchase of a product and are paid for by the end consumer. For discussion, see NAT'L TAX ASS'N, COMMUNICATIONS AND ELECTRONIC COMMERCE TAX PROJECT: FINAL REPORT (1999) [hereinafter NAT'L TAX ASS'N REPORT], available at http:// www.ntanet.org/ecommerce/final_report_cover.htm (on file with the Connecticut Law Review). A VAT is similar, although it is generally imposed on the purchase of most goods and services. Further, VATs are charged all along the value-added chain from supply to ultimate consumption. Each VAT payor (other then the end consumer), however, is permitted to receive a refund on VATs paid if the payor can establish that it charged the VAT to the next stage of the production chain. See, e.g., FRIEDEN, supra note 16, at 371-72. In other words, a carpenter pays VAT on her purchase of nails and gets (partly) reimbursed for these payments when she charges VAT on the provisions of her services to a homeowner. The homeowner never gets a refund and pays the full amount of the VAT (like a consumer with a sales tax) because he is the end consumer.

[FN126]. See discussion supra Part II.A.

[FN127]. See, e.g., Peter Jenkins & Tim D. Wilkie, U.K. Weekly VAT Update (January 17): The Application of VAT to E-Commerce in the EU, 22 TAX NOTES INT'L 427, 427 (Jan. 22, 2001) (noting that while the United States continues to debate the appropriateness of taxing the Internet, "in the EU, the debate is purely about how to do so").

[FN128]. Id. at 428-29.

[FN129]. See, e.g., FRIEDEN, supra note 16, at 363-72.

[FN130]. Id. at 372.

[FN131]. At the time of this writing, the European Union's Council of Economic and Finance Ministers ("ECOFIN Council") was discussing ways to enforce VAT compliance rules for non-European Union companies. Background: Ecofin Council [hereinafter ECOFIN Council], at http:// www.eu2001.se/eu2001/news/news_read.asp?ilnformationID=155160/15/01 (last visited Oct. 15, 2001) (on file with the Connecticut Law Review). The ECOFIN Council had rejected an earlier proposal, which permitted non-European Union businesses to register and collect VAT at the rate of one European Union country. Commission of the European Communities, Proposal for a Council Directive Amending Directive 77/388/EEC as Regards the Value Added Tax Arrangements Applicable to Certain Services Supplied by Electronic Mean, COM (2000) 349 final (June 7, 2000) (proposing to require non-European Union companies to collect VAT on sales to European Union consumers of digital products), available at http://europa.eu.int/comm/taxation_ customs/proposals/taxation/com349_2000/com2000_349en.pdf (on file with the Connecticut Law Review).

[FN132]. Gary Burnes, Businesses and Governments Express Concern About European Commission's Proposed E-Commerce VAT Directive, 20 TAX NOTES INT'L 2750, 2751-52 (2000).

[FN133]. Id. at 2752. The United States position will likely have to be modified to accept the eventual imposition of VATs on e-commerce imports, potentially to avoid European Union trade sanctions. In the long run, two factors will place economic and political pressure on trade partners with the European Union to accept VAT taxation. First, revenue losses will likely become significant at some point and the European Union nations could demand that non-European Union companies charge and collect VATs to pay for their public goods. Second, there will likely be increasing pressure from European Union-based companies to tax these imports. Otherwise the sale of their own goods and services within the European Union will be at a significant price disadvantage (because European Union companies will be forced to charge and collect VATs while non-European Union companies do not currently have similar collection obligations).

[FN134]. See, e.g., Twentieth Century Fox Film Corp. v. iCraveTV, No. 00- 121, 2000 U.S. Dist. LEXIS 1013, at [p. 1 (W.D. Pa. Jan. 28, 2000) (granting an injunction against a Canadian company to prevent rebroadcasting of copyrighted material despite fact that such rebroadcasts were arguably legal under Canadian law.); People v. Somm, Amtsgericht Munich [Local Court], File No.: 8340 Ds 465 Js 173158/95 (F.R.G.) (May 1998) (convicting Felix Bruno Somm, a German employee of the German affiliate of CompuServe USA, of permitting the transmission of illegal pornography into Germany), available at http:// www.cyber-rights.org/isps/somm-dec.htm (on file with the Connecticut Law Review). This case was subsequently reversed by a German Appellate Court. Associated Press, Update: CompuServe Ex-Officials Porn-Case

Conviction Reversed (Nov. 17, 1999), available at http://www.cyber-rights.org/isps/somm-dec.htm (on file with the Connecticut Law Review). See also Ligue Contre le Racisme et l'Antisemitisme v. Yahoo! Inc., T.G.I. Paris, Aug. 11, 2000, note J. Gomez (granting an injunction against Yahoo! U.S. for permitting the trading of Nazi items by residents of France), available at http:// www.gyoza.com/lapres/html/yahen8.html (on file with the Connecticut Law Review).

[FN135]. The United Kingdom appears to be the last European Union member State to oppose efforts to tax non-European Union companies on the following grounds:
The United Kingdom opposed the Presidency proposal arguing that this approach would give rise to inequality of treatment for non-European Union suppliers compared to European Union suppliers, imposing additional compliance burdens on the former; be difficult for non-European Union operators to comply with and near impossible for Member States to enforce, entail a complex distribution system, expensive to implement and difficult to monitor; and, not explicitly be an interim measure.
ECOFIN Council, supra note 131.

[FN136]. See, e.g., 6 RHOADES & LANGER U.S. INTERNATIONAL TAXATION AND TAX TREATIES, MOD-3 §§ 1.01 & 1.02, art. 2(1) (LEXIS 2001) (indicating the agreement only applies to income taxes and certain excise taxes on insurance premiums).

[FN137]. See discussion infra Part III.B.

[FN138]. See VERNADSKY, supra note 11, at 91 (discussing how the mechanical systems of Earth have reached a stable, dynamic equilibrium).

[FN139]. Internet Tax Freedom Act of 1998, Pub. L. No. 105-277, §1101, 112 Stat. 2681 (1998) (creating a moratorium on new taxes for the Internet that will expire October 21, 2001). The Internet Tax Nondiscrimination Act amends the Internet Tax Freedom Act to extend the moratorium on multiple or discriminatory state or local taxes on electronic commerce through November 1, 2003. Internet Nondiscrimination Act of 2000, H.R. 3709, 106th Cong. (2000) (enacted).

[FN140]. For discussion, see generally NAT'L TAX ASS'N REPORT, supra note 125.

[FN141]. U.S. Const. art. 1, §8, cl. 2 (The Commerce Clause gives Congress the power "to regulate commerce with foreign nations, and among the several states ..."). Id.

[FN142]. In this Article, I sometimes use the term "sales taxes" to include both sales and use taxes. Technically, state legislation generally imposes a use tax on out-of-state purchases at the same rate as the sales tax applied on purchases within the state. See generally NAT'L TAX ASS'N REPORT, supra note 125. Under the legislation of most states, a consumer is liable to pay a use tax on the purchase of an out-of-state product and must self-assess the amount of tax owed and remit the appropriate use tax to the state government when the consumer files her state income tax return. Id. In practice, consumers rarely follow this legal rule and state governments collect negligible amounts of use tax from consumer sales. Id. The long-arm statutes of some

states try to force a remote seller to collect the use tax owed by the consumer. Id. As subsequently discussed, these long-arm statutes are often found to be unconstitutional as applied to a particular taxpayer located outside of a taxing state's geographic boundary.

[FN143]. Id. at i-ii (noting that 7600 taxing jurisdictions impose significant tax burdens on multistate vendors, especially smaller online companies participating in e-commerce).

[FN144]. ADVISORY COMM'N ON ELEC. COMMERCE, REPORT TO CONGRESS 18-20 (Apr. 2000) [hereinafter ADVISORY COMM'N REPORT], available at http://www.ecommercecommission.org/report.htm (on file with the Connecticut Law Review). As explained in the report:

While the exact impact of e-commerce on sales tax revenues may be uncertain, clearly the need for substantial sales tax simplification is necessary in this emerging digital economy .... Most, if not all, of the Commissioners expressed the view that fundamental uniformity and simplification of the existing system are essential. The need for nationwide consistency and certainty for sellers as well as the need to alleviate the financial and logistical tax collection burdens and liability of sellers were common themes throughout discussions.

Id. at 18-19. The Commission recommended that a new advisory commission be established to review, after states have taken steps to unify their tax systems, whether sales taxes should be imposed for Internet transactions. Id. at 20.

[FN145]. In order to see whether a particular tax is unduly interfering with the Commerce Clause, the United States Supreme Court developed a four-part test as follows: (1) the tax can only be applied to an activity with a substantial nexus with the taxing state; (2) the tax must be fairly apportioned; (3) the tax does not discriminate against interstate commerce; and (4) the tax is fairly related to the service provided by the state. Complete Auto Transit v. Brady, 430 U.S. 274, 277-78 (1977).

[FN146]. Nat'l Bellas Hess, Inc. v. Dep't of Revenue, 386 U.S. 753, 758 (1967).

[FN147]. The tax treatment for this mail order transaction raises nearly identical issues with respect to online transactions. It is generally thought that the absence of taxation on cross-border mail order sales is not overly worrisome because mail order sales consist of a relatively small part of overall retail sales. Cockfield, Balancing National Interests, supra note 16, at 167-68. Further, the shipping costs on tangible goods, such as John's computer, discourage consumers in many circumstances from using mail order services. But see Quill Corp. v. North Dakota, 504 U.S. 298, 316 (1992) (noting "it is not unlikely that the mail-order industry's dramatic growth over the last quarter century is due in part to the bright-line exemption from state taxation created in Bellas Hess"). Note, however, that the shipping costs for intangible online goods are zero and that many online companies can lower the retail price of their tangible goods in comparison to traditional retailers because the online retailer does not have as many overhead costs (for example, maintenance of a physical store or marketing costs). Further, Internet commerce is expected to greatly exceed mail order commerce. See McLure, supra note 16.

[FN148]. Quill, 504 U.S. at 315. Quill Corporation was a mail order company that sold office equipment throughout the United States via catalogs, flyers, advertisements or a toll free number. Id. at 302. Quill Corporation did not maintain any sales office or sales force in North Dakota, although the company managed to generate approximately one million dollars in sales to three thousand customers in North Dakota. Id. North Dakota imposed a use tax on property purchased for consumption within the state. Id. Pursuant to its sales and use tax legislation, North Dakota required every "retailer maintaining a place of business in" the state to collect the use tax from the consumer and remit it to the state. Id. The term "retailer" was defined to include "every person who engages in regular or systematic solicitation of a consumer market in the state." Id. at 302-03 (quoting N.D. Cent. Code § 57-40.2-01(6) (2000)). Hence, North Dakota argued that Quill Corporation should be subject to the tax despite the fact that the company did not maintain any property or personnel in the state. Id. at 303. The Court held that North Dakota's legislation created an unconstitutional burden on interstate commerce. Id. at 319.

[FN149]. Id. at 318. The Court agreed that Due Process limitations are no longer important in the context of taxation because the Court has downplayed the threshold requirements to satisfy Due Process constraints. Id. at 305- 07. This holding was critical for future efforts to tax e-commerce because Congress is constitutionally prohibited from overturning Due Process constraints but is empowered to deal with the Commerce Clause. Id.

[FN150]. Sales taxes provide roughly twenty-five percent of tax revenues to states and local governments. ADVISORY COMM'N REPORT, supra note 144, at 18.

[FN151]. GEN. ACCT. OFF., SALES TAXES: ELECTRONIC COMMERCE GROWTH PRESENTS CHALLENGES; REVENUE LOSSES ARE UNCERTAIN 20-21 (June 2000), available at http://www.unclefed.com/GAOReports/gao00-165.html (on file with the Connecticut Law Review). At the time of this writing, the most recently available estimate suggested that e-commerce will cause a total state and local government revenue loss of $13.3 billion for 2001. DONALD BRUCE & WILLIAM F. FOX, STATE AND LOCAL SALES TAX REVENUE LOSSES FROM E-COMMERCE: UPDATED ESTIMATES 1 (Sept. 2001), available at http://cber.bus.utk.edu/ecomm/ecom0901.pdf (on file with the Connecticut Law Review).

[FN152]. As mentioned above, the respondents were presented with two statements: (1) "[o]nline commerce should be exempt from sales tax, in order to stimulate growth of the Internet"; and (2) "[o]nline commerce should be subject to the same sales taxes as other commerce, so that Internet businesses do not have an artificial advantage over other businesses." MARKLE FOUND., supra note 107. Thirty-seven percent of the adult respondents agreed with the first statement while fifty-eight percent agreed with the second statement. Id.

[FN153]. WAL-MART STORES, INC., ANNUAL REPORT (2001) [hereinafter WAL-MART ANNUAL REPORT], available at http://eol.finsys.com/edgar_conv_ html/2001/04/10/0001021408-01-500118.html (on file with the Connecticut Law Review). Wal-Mart employs more than 885,000 employees in the United States and 255,000 employees internationally. Id. at 7. In the fiscal quarter ending April 30, 2001, Wal-Mart Stores, Inc. and its subsidiaries had net sales of approximately forty-eight billion dollars. WAL-MART STORES, INC., FORM 10-Q FOR QUARTERLY PERIOD ENDED APRIL 30, 2001 3 (2001), available

at http:// eol.finsys.com/edgar_conv_html/2001/06/05/0000104169-01-500009.html (on file with the Connecticut Law Review).
[FN154]. Press Release, Accel, Wal-Mart, Accel Partners to Launch Walmart.com, a New Independent Company Based in Silicon Valley (Jan. 6, 2000) [hereinafter Wal-Mart, Accel Partners to Launch], available at http:// www.accel.com/news/pressrelease3.html (on file with the Connecticut Law Review).

[FN155]. Id. The Web site additionally states: "Wal-Mart Stores, Inc. and Accel Partners, a leading venture capital firm in California's Silicon Valley, have announced they are joining to form Walmart.com, Inc., an independent company ...." Id.

[FN156]. Id.

[FN157]. Id.

[FN158]. The author's full e-mail message read: "I have a question about sales taxes. If I buy a product from Walmart.com, do I have to pay sales taxes? Does it matter where I live? Thanks, Art Cockfield." E-mail from Arthur J. Cockfield, Assistant Professor, Queen's University Faculty of Law, to Walmart.com, Inc. (June 5, 2001, 14:34 EST) (on file with the Connecticut Law Review). Walmart.com sent a (presumably) automated reply to the message on the same date at 2:49 p.m., which read in relevant part:
We are writing in response to your question about sales tax. Current law requires online stores such as Walmart.com to charge sales tax only in the state or states where the online company maintains a physical presence. We currently charge sales tax in Arkansas, California, Ohio and Utah. All other states are exempt from this tax.
E-mail from Walmart.com, Inc. to Arthur J. Cockfield, Assistant Professor, Queen's University Faculty of Law (June 5, 2001, 14:49 EST) (on file with the Connecticut Law Review).

[FN159]. See generally Michael J. McIntyre, Commentary: Taxing Electronic Commerce Fairly and Efficiently, 52 TAX L. REV. 625, 627 (1997) (arguing in favor of state's efforts to combat entity isolation).

[FN160]. See, e.g., SFA Folio Collections Inc. v. Tracy, 652 N.E.2d 693 (Ohio 1995) (holding that presence of sister corporation in state did not establish substantial nexus). For a review of the law in this area, see generally McIntyre, supra note 159.

[FN161]. Id. at 627.

[FN162]. WAL-MART ANNUAL REPORT, supra note 153, ex.21. The name of the corporate subsidiary is Walmart.com, Inc. and it operates under the business name Walmart.com. Id.

[FN163]. Press Release, Walmart.com, New Wal-Mart Fulfillment Distribution Center to Provide Service to Walmart.com (Aug. 2, 2000) [hereinafter New Wal-Mart Fulfillment Distribution Center], available at http:// www.walmart.com/cservice/aw_pr_080200_01.gsp?navmode=9 (on file with the Connecticut

Law Review).

[FN164]. By maintaining a majority of the members on the board of directors, Wal-Mart Stores, Inc. is permitted to manage the affairs of its subsidiary: directors are given the authority to manage the affairs of the corporation. Del. Code Ann. tit. 8, § 141 (1991).

[FN165]. See, e.g., Current, Inc. v. State Bd. of Equalization, 29 Cal. Rptr. 2d 407 (Ct. App. 1994) (holding that a state could not force a mail order company to collect sales tax because the company was not an agent or alter ego for its parent corporation based in Minnesota); Bloomingdale's By Mail Ltd. v. Commonwealth, 591 A.2d 1047 (Pa. 1991) (holding that a state cannot force a mail order company, Bloomingdale's by Mail, to collect use taxes because the parent company, Bloomingdale's, did not act as an agent for the mail order company).

[FN166]. It is important to note that while the Supreme Court has yet to weigh in on the entity isolation issue, the Court has rejected formalism in the past in the context of state sales taxation. Scripto, Inc. v. Carson, 362 U.S. 207, 211 (1960) (asserting that it is constitutionally insignificant whether a remote seller characterizes its workers as employees or independent contractors, otherwise tax avoidance will result). Further, the Court ignored formalism in a case where National Geographic Society maintained a mail order company out of the District of Columbia and sales offices for its magazine in California. Nat'l Geographic Soc'y v. Cal. Bd. of Equalization, 430 U.S. 551, 551 (1977). The presence of the magazine sales office was found to be sufficient nexus for the imposition of the California sales tax because, for use tax purposes, substantial nexus is created between the taxing state and the business entity it seeks to tax. Id. at 554-56.

[FN167]. Wal-Mart, Accel Partners to Launch, supra note 154.

[FN168]. SFA Folio Collections, Inc. v. Bannon, 217 Conn. 220, 229-30, 585 A.2d 666, 672 (1991). The court focused on the fact that Folio, a corporation operating a mail order company, and Saks-Stamford, a corporation operating a retail store, were "distinct corporate entities" (linked by a common corporate parent, Saks & Company) despite the fact that Folio catalogues were used at Saks-Stamford stores and Folio customers could use Saks-Stamford tailoring services. Id. at 672. The court additionally rejected the argument that "unitary nexus" was created by the shared corporate name, logo or other intellectual property. Id. The court refused to hold Folio responsible for use tax collection absent a showing that the corporate affiliates have ignored the formalities of corporate existence such as intermingling funds. Id. at 673-74.

[FN169]. Consider a California case where companies were held to be operationally independent. See Current, Inc., 24 Cal. Rptr. 2d at 407. The court held that the separate corporate identity should be respected for sales tax purposes because neither company was held out to customers or potential customers as being the same as, or an affiliate of, the other. Id. Neither company exploited each other's marketing practices, customer lists, trade name or goodwill. Id.

[FN170]. New Wal-Mart Fulfillment Distribution Center, supra note 163. The Web site additionally states: "Walmart.com was established ... by Wal-Mart Stores, Inc. and Accel Partners, a leading venture capital firm in California's Silicon Valley to accelerate the

development of Wal-Mart's Internet and e-commerce programs .... Wal-Mart Stores, Inc. maintains a majority interest in Walmart.com and majority representation on the board." Id.
[FN171]. Id. (quoting Jeanne Jackson, CEO of Walmart.com, Inc.).

[FN172]. Wal-Mart Stores, Inc., Walmart.com Background Information, at http://www.walmart.com/cservice/aw_coinfo.gsp (last visited Nov. 12, 2001) (on file with the Connecticut Law Review). The passage on the Web site bears repeating in its entirety:
With the support of Bentonville [the location in Arkansas where Wal-Mart Stores, Inc. maintains its head office], we're able to tap into many of the things that have made Wal-Mart a universally known brand--things like excellent supplier relationships, highly efficient back-office systems, an unswerving commitment to Sam Walton's "Always Low Prices" philosophy and an unrivaled group of experienced retailers who strive each day to make the customer number one.
In short, at Walmart.com, we're passionate about combining the best of two great worlds, technology and world-class retailing, to give our customers easy access to more things Wal-Mart: a wide assortment of their favorite products, Every Day Low Prices, guaranteed satisfaction, friendly service, convenient hours (24 hours, 7 days a week) and a great online shopping experience.
Id.

[FN173]. Id.

[FN174]. Wal-Mart Stores, Inc., Wal-Mart Stores, at http://www.walmartstores.com/wmstore/wmstores/HomePage.jsp (last visited Nov. 15, 2001) (on file with the Connecticut Law Review).

[FN175]. WAL-MART ANNUAL REPORT, supra note 153.

[FN176]. Id. at 3. The term "Company" had been previously defined as Wal-Mart Stores, Inc. together with its subsidiaries. Id.

[FN177]. Id.

[FN178]. Wal-Mart Stores, Inc., Store Finder, at http://www.walmart.com/cservice/ca_storefinder.gsp (last visited Nov. 15, 2001) (on file with the Connecticut Law Review).

[FN179]. Wal-Mart Stores, Inc., Security and Privacy, at http://www.walmart.com/cservice/ca_securityprivacy.gsp (last visited Nov. 15, 2001) (on file with the Connecticut Law Review). The privacy statement specifically states:
Walmart.com, Inc., and Wal-Mart Stores, Inc., ("we") do not and will not sell or rent your personal information to anyone. You have the right to control your personal information as you see fit. We collect only the personal information you allow us to collect, and then it is used only to help us serve you better.
Id.

[FN180]. Id.

[FN181]. Wal-Mart Stores, Inc., The Wal-Mart Credit Card, at http://www.walmartcreditcard.com/index1.html (last visited Nov. 15, 2001) (on file with the Connecticut Law Review).

[FN182]. Wal-Mart Stores, Inc., Quick Answers, at http://www.walmart.com/cservice/ca_quickanswers.gsp (last visited Oct. 17, 2001) (on file with the Connecticut Law Review).

[FN183]. The ultimate result would be determined by a court's interpretation of the long-arm statute employed by a particular state to try to force Walmart.com to collect sales taxes. See discussion supra note 142. Accordingly, different state legislation may produce different judicial opinions concerning the viability of Walmart.com's entity isolation strategy.

[FN184]. McIntyre, supra note 159, at 651.

[FN185]. Id. at 652.

[FN186]. Id. at 651. In order for this alternative approach to be successful, courts would have to narrowly construe the holding in Quill Corp. v. North Dakota, 504 U.S. 298 (1992), to impose the bright-line physical presence test on use taxes on remote sellers who use a common carrier or the United States Post Office to make sales into other states. McIntyre, supra note 159, at 651. See also W. Ray Williams, The Role of Caesar in the Next Millennium? Taxation of E-commerce: An Overview and Analysis, 27 WM. MITCHELL L. REV. 1703, 1720 (2001) (arguing that Quill weakened the physical presence requirement by indicating that Congress could, if it wished, pass legislation to override the Court's Commerce Clause concerns). The Court appeared to suggest that the bright-line test applied generally to sales and use taxes, suggesting a more expansive interpretation. See Quill Corp., 504 U.S. at 314, 316 (stating "[m]oreover, a bright-line rule in the area of sales and use taxes also encourages settled expectations and in doing so fosters investment by business and individuals"). Still, the Court denied certiorari in a case that supports the proposition that economic presence is sufficient to create nexus. Geoffrey, Inc. v. Tax Comm'n, 437 S.E.2d 13, 16 (S.C. 1993), cert. denied, 510 U.S. 992 (1993). The South Carolina Supreme Court held that the presence within a state of intangible assets, such as licensing agreements or accounts receivable, could fulfill the nexus requirements for income tax purposes and would not unduly burden interstate commerce. Id.

[FN187]. Earlier this year, the California legislature introduced legislation that would force any Internet vendor to collect sales taxes if the corporation maintained an affiliate company with a physical presence within California. Cal. Assembly Bill 81 (Apr. 17, 2001), available at http://www.leginfo.ca.gov/bilinfo.html (on file with the Connecticut Law Review). However, an amendment to the bill deleted all references to Internet taxation. Cal. Assembly Bill 81 (May 30, 2001), available at http:// www.leginfo.ca.gov/bilinfo.html (on file with the Connecticut Law Review).

[FN188]. See, e.g., Kim Peterson, E-Commerce Two-Step, SAN DIEGO UNION-TRIB.., May 13, 2001, at H1, LEXIS, News Library, Sdut File (discussing how Gateway Computers, based in San Diego, California, created a separate company based in Massachusetts for its online retail operations, so that it would only have to charge online sales tax to residents of Massachusetts).

[FN189]. See discussion infra Part IV.A.1.

[FN190]. For a discussion of case law in this area, as well as its applicability to the e-commerce arena, see Walter Hellerstein, State Taxation of Electronic Commerce, 52 TAX L. REV. 425, 440-41 (1997) (indicating that application of the United States Supreme Court's doctrine in the context of e-commerce is unclear).

[FN191]. Although not directly on point, the Supreme Court previously held that the ownership of computer floppy disks (that enabled customers to place orders for out-of-state sales) within a taxing state would not fulfill the substantial nexus requirements that would permit a state to impose use tax collection duties on out-of-state mail order companies. Quill, 504 U.S. at 299. Quill Corporation held legal title to the floppy disks that, in turn, were licensed to customers in the taxing jurisdiction. Id. at 315 n.8.

[FN192]. For an excerpt from the unpublished case America Online, Inc. v. Johnson, see MICHAEL GEIST, INTERNET LAW IN CANADA 703-05 (2d ed. 2001). If the Internet's infrastructure is likened to a distribution system for products, states may look to prior caselaw concerning truck deliveries. See, e.g., In re Intercard, Inc., 14 P.3d 1111, 1122 (Kan. 2000) (holding that that the delivery and installation of electronic data card readers were insufficient to establish substantial nexus to Kansas). But see Brown's Furniture, Inc. v. Wagner, 665 N.E.2d 795, 803 (Ill. 1996) (holding that 942 truck deliveries in a ten-month period constituted substantial nexus).

[FN193]. GEIST, supra note 192, at 705.

[FN194]. Virginia Department of Taxation, Revenue Ruling (P.D. 01-29) (Mar. 29, 2001) [hereinafter Virginia Revenue Ruling]. The Virginia Department of Taxation relied on a sales tax exemption for services that provide access to the Internet for end consumers. Id. See also Va. Code Ann. §58.1-609.5 (LEXIS 2000) (listing service exemptions). The tax department noted, however, that if the network equipment was used by the taxpayer to design or produce content, then the tax exemption would be unavailable because the equipment is no longer used to provide Internet access services. Virginia Revenue Ruling, supra.

[FN195]. See, e.g., Hellerstein, supra note 190, at 487 (noting that if a server's presence is relevant for tax purposes then "Oregon (a state with no sales tax) will soon become the server capital of the world"). But see Paul Mines, Conversing with Professor Hellerstein: Electronic Commerce and Nexus Propel Sales and Use Tax Reform, 52 TAX L. REV. 581, 608 (1997) (arguing that networking equipment should fulfill nexus requirements).

[FN196]. See discussion infra Part III.B.2.

[FN197]. TREASURY REPORT, supra note 1, at 1.

[FN198]. Id. at 4 ("In most cases, this will require that existing principles be adapted and reinterpreted in the context of developments of technology. In extreme cases, it may be necessary to develop new concepts."). See also WHITE HOUSE REPORT, supra note 1, pt. 1.1 ("The taxation of commerce conducted over the Internet should be consistent with the established principles of international taxation .... The system should be able to accommodate tax systems used by the United States and our international partners today.").

[FN199]. See supra note 1 and accompanying text.

[FN200]. But see FRIEDAN, supra note 16, at 54-55 (noting the irony that the United States government called for the imposition of preexisting rules for the taxation of e-commerce, but has done very little to clarify how these traditional rules will apply to the Internet economy).

[FN201]. See OECD TAXATION FRAMEWORK CONDITIONS, supra note 1, at 4 (citing tax principles such as neutrality, efficiency, certainty and simplicity, effectiveness and fairness and flexibility). See also GOV'T/BUS. DIALOGUE ON TAXATION & ELEC. COMMERCE, ORG. FOR ECON. CO-OPERATION & DEV., JOINT DECLARATION OF BUSINESS AND GOVERNMENT REPRESENTATIVES (Oct. 7, 1998) ("The taxation framework for electronic commerce should be guided by the same taxation principles that guide governments in relation to conventional commerce."), available at http://www.oecd.org/pdf/M0000-15000/M00015991.pdf (on file with the Connecticut Law Review).

[FN202]. For a general review of international tax treaties, see Cockfield, Balancing National Interests, supra note 16, at 143-150.

[FN203]. See, e.g., U. S. DEP'T OF THE TREASURY, MODEL INCOME TAX CONVENTION, art. 5 (Sept. 20, 1996), reprinted in 1 TAX TREATIES 1426-A, 1426- CC (Warren, Gorham & Lamont 1996) [hereinafter U.S. MODEL TREATY]. Countries are generally permitted only to tax income that is attributable to these permanent establishments. Id. art. 7(1), at 1426-E.

[FN204]. Id. As I explained in a previous article:
The traditional permanent establishment principle arguably served national and international interests by protecting important real world norms. First, the permanent establishment concept was reasonably easy for tax authorities to administrate because multinational firms were provided with a set of relatively straight-forward rules to determine when their profits would be subject to the foreign income taxes. A permanent establishment represented evidence that a foreign company conducted significant business within the source country, and hence the foreign company would not have to comply with a country's tax laws for relatively low sales levels. The rule therefore represented a reasonable compromise between the needs of tax authorities and the needs of firms with cross-border business activities.
Second, the permanent establishment principle arguably represented a balanced rule from an international equity perspective because the principle permitted countries to share in tax revenues from the profits created by commercial opportunities presented by their markets. The rule

provided a reasonable compromise between the interests of Internet exporting nations and Internet importing nations because the exporting nations derived revenues from taxing value added at the production stage, while the importing nations derived revenues from taxing the income generated by sales activities. The emergence of e-commerce, however, upsets this balance because physical locations are no longer required in foreign markets in order to engage in significant commercial activities.
Cockfield, Transforming the Internet, supra note 16, at 1179-81. For a recent discussion of international tax principles, see generally Nancy H. Kaufman, Fairness and the Taxation of International Income, 29 LAW & POL'Y INT'L BUS. 145 (1998).

[FN205]. See WORKING PARTY NO. 1 ON TAX CONVENTIONS & RELATED QUESTIONS, ORG. FOR ECON. CO-OPERATION & DEV., CLARIFICATION ON THE APPLICATION OF THE PERMANENT ESTABLISHMENT DEFINITION IN E-COMMERCE: CHANGES TO THE COMMENTARY ON ARTICLE 5 (Dec. 22, 2000) [hereinafter OECD CLARIFICATION].

[FN206]. The conclusions of the Working Party have been adopted into the OECD's Commentary to the OECD Model Tax Treaty. See id. at 1. This commentary, in turn, is used by courts, including United States courts, to help to interpret the meaning of the term "permanent establishment." See, e.g., United States v. A.L. Burbank & Co., 525 F.2d 9, 15-16 (2d Cir. 1975) (discussing and comparing Canadian and United States interpretation of the Model Tax Treaty); N.W. Life Assurance Co. of Can. v. Comm'r, 107 T.C. 363, 392 (1996) (relying on Commentaries to the OECD Model Tax Treaty when interpreting tax treaty between the United States and Canada).

[FN207]. See Cockfield, Transforming the Internet, supra note 16, at 1177-200 (offering a case study for international taxation of e-commerce). See also Cockfield, Balancing National Interests, supra note 16, at 186-91; Arthur J. Cockfield, Should We Really Tax Profits From Computer Servers? A Case Study in E-Commerce Taxation, 21 TAX NOTES INT'L 2407, 2409-11 (2000).

[FN208]. Joann M. Weiner, European Parliament Committee Holds Hearing on EU Tax Coordination, 21 TAX NOTES INT'L 1389 (Sept. 25, 2000) (noting a commentator's view that Ireland's low general corporate income tax rate of 12.5% may lead to more tax competition).

[FN209]. OECD CLARIFICATION, supra note 205, ¶ 42.2, at 2.

[FN210]. For a discussion of income shifting strategies that could be employed by software firms, see generally David R. Tillinghast, Taxation of Electronic Commerce: Federal Income Tax Issues in the Establishment of a Software Operation In a Tax Haven, 4 FLA. TAX REV. 339 (1999).

[FN211]. For example, it may cost $500 a month to lease and maintain a computer server in a tax haven. All else being equal, an incentive exists to shift income to this computer server as long as the resulting income tax savings exceed $500 a month. In the real world, taxpayers additionally have to consider the risk of audit, public relations and other costs associated with aggressive tax

planning.

[FN212]. See discussion supra Part II.A.2.

[FN213]. A recent book explores the possible use of offshore tax havens for e-commerce operations. See generally MICHAEL H. GROSH, CHOOSING AN OFFSHORE: CYBERTAX IN THE NEW MILLENNIUM 189-93 (2000) (ranking tax havens, in part, according to communications facilities that support e-commerce operations).

[FN214]. Michael Allen, As Dot-Coms Go Bust in U.S., Bermuda Hosts an Odd Little Boomlet, WALL ST. J., Jan. 8, 2001, at A1, A8 (discussing how tax havens are running fiber-optic cables over the sea-bed in order to gain better access to the United States and other markets).

[FN215]. For a description of efforts on behalf of United States ex-patriots to set up e-commerce operations in tax havens, see Mark Schone, EPZ Money, WIRED, Nov. 2000, at 124, 130.

[FN216]. Barbados: An Island with Digital Signature, ECONOMIST, June 2, 2001, at 40, 42 ("Developing Barbados as an e-commerce jurisdiction is a priority at [the bank].").

[FN217]. Costa Rica is home to the world's largest online gambling company, World Sports International. The company maintains that it "does not report [gambling winnings] to the IRS because it is a Costa Rican owned company." World Sports International Web site, at http://www.betwsi.com/defmnomembers.html (last visited Dec. 1, 2001) (on file with the Connecticut Law Review).

[FN218]. See Charles M. Tiebout, A Pure Theory of Local Expenditures, 64 J. POL. ECON. 416, 416-18 (1956) (discussing public choice theory and suggesting that a system that forces the voter to reveal his preferences, is able to satisfy those preferences in the same sense that a private market does, and taxes the voter accordingly provides a better solution for the level of local expenditures for public goods).

[FN219]. Take the example of State X competing with State Y by lowering State X's personal income tax rates. Individual A moves from State Y to State X in order to enjoy reduced tax rates, while accepting the fact that State X can offer fewer public goods (for example, less well maintained roads) in comparison to State Y because State X now best reflects Individual A's preferences for taxes and public services. Tax competition has further served to discipline State Y's potential plans to increase taxes in order to fund inefficient public services because State Y now fears that additional residents will move to State X if State Y goes ahead with an increase in its personal income tax rate. Nevertheless, State Y can maintain its relatively higher rates because the majority of its citizens would prefer to pay the higher taxes in order to receive more government benefits. Overall, an efficient result has occurred.

[FN220]. See Peggy B. Musgrave & Richard A. Musgrave, Fiscal Coordination and Competition in an International Setting, in INFLUENCE OF TAX DIFFERENTIALS ON INTERNATIONAL COMPETITIVENESS: PROCEEDINGS OF THE VIIITH MUNICH SYMPOSIUM ON INTERNATIONAL TAXATION 61, 70 (1990) (arguing that the forces of

competition cannot secure an efficient or equitable allocation of finances in the international arena). It has been noted that state tax competition differs from global tax competition since the former involves: totally free trade without obstacles; comprehensive access to information; a federal tax system that establishes guidelines for individual and corporate income tax and imposes the lion's share of income taxes; and low rate retail sales taxes in contrast to high rate Value Added Taxes. See VITO TANZI, TAXATION IN AN INTEGRATING WORLD 29-31 (1995).

[FN221]. See ORG. FOR ECON. CO-OPERATION & DEV., HARMFUL TAX COMPETITION: AN EMERGING GLOBAL ISSUE 7 (1998) (discussing the potential for the erosion of national tax bases due to harmful tax competition) [hereinafter OECD HARMFUL TAX COMPETITION REPORT].

[FN222]. The member states of the European Union have agreed, through a non-binding political commitment, to eliminate tax measures that promote harmful tax competition by January 1, 2003. Coraline Kok, Conclusions of the ECOFIN Council Meeting on 1 December 1997 Concerning Taxation Policy, reprinted in EC Update, 38 EUROPEAN TAXATION EC-5 (1998) (the non-binding agreement indicates that a special group is to be formed to identify the harmful tax measures and oversee dismantling of the measures by January 1, 2003). OECD member States have similarly agreed to reduce harmful preferential tax regimes in the context of mobile financial and other services by April 2003. See FISCAL AFFAIRS COMM., ORG. FOR ECON. CO-OPERATION & DEV., TOWARDS GLOBAL CO-OPERATION: PROGRESS IN IDENTIFYING AND ELIMINATING HARMFUL TAX PRACTICES 9 (June 2000); OECD HARMFUL TAX COMPETITION REPORT, supra note 221, at 56, 70.

[FN223]. See, e.g., I.R.C. § 174 (1994 & Supp. V 2000) (permitting a current deduction for research expenses); Id. § 263A(c)(2) (exempting research expenses from the capitalization rules for manufacturers and certain large retailers and wholesalers). Software development expenses can generally be deducted currently at the option of the taxpayer (pursuant to I.R.C. § 162 (1994 & Supp. V 2000)) or may be capitalized (pursuant to I.R.C. § 263 (1994 & Supp. V 2000)). For discussion, see David Hardesty, IRS Tries to Clarify R&E Costs, available at http://www.ecommercetax.com/doc/112501.htm (last visited Dec. 12, 2001) (on file with the Connecticut Law Review).

[FN224]. This is the approach used for many intangible assets, such as purchased trademarks or copyright. I.R.C. § 197 (1994 & Supp. V 2000) (providing for the amortization of goodwill and other intangible assets).

[FN225]. See, e.g., Tom Neubig & Satya Poddar, Blurred Tax Boundaries: The New Economy's Implications for Tax Policy, 11 TAX NOTES INT'L 1203, 1206- 07 (2000) (discussing the increased importance of intangible assets and the difficulties associated with taxing these highly mobile assets).

[FN226]. Current rules try to stop this shifting through a number of devices. The main constraint to this type of strategy under United States laws is the so-called "super-royalty" imposed on cross-border transfers of intangible assets. In other words, the transferee company must pay a

royalty to the transferor company as if the transferor company had merely licensed the technology to the transferee company. I.R.C. § 367(d) (1994 & Supp. V 2000). For a discussion of cost sharing and offshore licensing strategies, see ARTHUR J. COCKFIELD & MARK KLITGAARD, 2000 ANNUAL MEETING OF THE CALIFORNIA TAX BARS: INTERNATIONAL TAX PLANNING AND GLOBAL E-COMMERCE OPERATIONS (2000) (on file with the Connecticut Law Review).

[FN227]. See, e.g., U.S. MODEL TREATY, supra note 203, art. 7(2), at 1426-E.

[FN228]. Technical Advisory Group on Monitoring the Application of Existing Treaty Norms for the Taxation of Bus. Profits, Org. for Econ. Co-operation & Dev., Attribution of Profit to a Permanent Establishment Involved in Electronic Commerce Transactions (2001) [hereinafter OECD E-Commerce Profit Attribution Report]. It was indicated that the principles developed within the paper could "equally apply to other forms of e-commerce but would need to be adapted to the particular factual situation." Id. ¶ 15, at 6.

[FN229]. OECD MODEL TAX TREATY, supra note 25, art. 7(2), at M-18. The concept of permanent establishment plays an additional important role in determining how the corporate income tax base is allocated among nations. Corporations with related parties in more than one country transfer goods, services or capital to these related parties. Transfer prices are the prices set by these taxpayers on the resources exchanged among the related parties. The transfer price received or charged for goods, services or financing will be included in the income of the supplier and the corresponding cost or payment will be deducted from the profits of the related party.

[FN230]. The OECD E-Commerce Profit Attribution Report is based on another OECD draft that discusses, in a broader sense, the applicability of the profit attribution rules to all economic activity. See generally ORG. FOR ECON. CO-OPERATION & DEV., DISCUSSION DRAFT ON THE ATTRIBUTION OF PROFITS TO PERMANENT ESTABLISHMENTT (2001).

[FN231]. See OECD E-COMMERCE PROFIT ATTRIBUTION REPORT, supra note 228, ¶¶ 28-31, at 8-9.

[FN232]. Id. ¶ 28, at 8.

[FN233]. Id. ¶¶ 62-63, at 16-17.

[FN234]. The application of so-called intelligent agent software that can negotiate, for example, the price of inputs with the automated software of a supplier. The draft report notes that more sophisticated software may call for a greater allocation of market risk to the server/permanent establishment. See id. ¶ 61 n.5, at 16.

[FN235]. See id. ¶¶ 64, 67, at 17. Under the "contract service provider" model, the head office is considered to retain economic control over all the property (tangible and intangible) transferred to the permanent establishment thus the risks associated with the use of the assets are considered to remain with the head office. Id.

[FN236]. See id. ¶¶ 72-73, at 18-19.

[FN237]. See id. ¶ 78, at 20.
[FN238]. The report concludes that the functional analysis:
would, in all likelihood, leave the permanent establishment with a quantum of profit that is insignificant relative to either the value of transactions processed through the permanent establishment or the arm's length cost of securing the use of the hardware and software required to ensure the continuous operation of the server without human intervention.
Id. ¶ 105, at 26.

[FN239]. See discussion supra Part III.C.

[FN240]. The United States and other tax authorities employ within their tax laws anti-deferral rules (often referred to as Controlled Foreign Corporation rules) that strive to prevent companies based within their jurisdictions from "inappropriately" diverting income streams to foreign jurisdictions. The main thrust of the rules is to try to stop active income from being diverted to another jurisdiction where the jurisdiction of destination bears little to no economic relationship to the economic activity that produced the income. See, e.g., I.R.C. § 954 (1994 & Supp. V 2000) (discussing "foreign base company income"). In addition to the geographic rules that source income from one taxing jurisdiction or another, there exist a series of rules that allocate taxing jurisdiction depending on the character of the income produced by a cross-border transaction. See generally UNITED STATES MODEL TREATY, supra note 203. In fact, a determination of the character of income is the first step toward analyzing the appropriate tax treatment for a cross-border transaction. Characterization rules are important in the context of tax treaties, as well as domestic laws for situations where tax treaties do not exist. Tax treaties impose different tax treatments on different types of income. For example, normal business profits are sourced (in the absence of a permanent establishment within foreign markets) to the country where the income-producing business is based. Id. A United States-based online company that generates business profits abroad will be exclusively taxed by United States tax laws. The tax will be applied on the net income generated by the economic activity. Id. Royalty income, on the other hand, is generally sourced to the country where the intellectual property was used (for example, the country where the consumer of the intellectual property lives). Id. Further, international tax rules stipulate that a gross withholding tax (not a net income tax) will be imposed on the royalty. Id. Accordingly, if the United States-based online company's sales are deemed to create royalty income, then the consumer must withhold a percentage of her payment and remit the withheld amount to the foreign tax authority. See. e.g., U.S. MODEL TREATY, supra note 203, art. 7, at 1426-E; OECD MODEL TAX TREATY, supra note 23, art. 7.

[FN241]. See generally TECHNICAL ADVISORY GROUP ON TREATY CHARACTERIZATION OF ELEC. COMMERCE PAYMENTS, ORG. FOR ECON. CO-OPERATION & DEV., TAX TREATY CHARACTERIZATION ISSUES ARISING FROM E-COMMERCE (2001), available at http:// www.oecd.org/pdf/M000015000/M00015536.pdf (on file with the Connecticut Law Review); U.S. DEP'T OF THE TREASURY, THE DEFERRAL OF INCOME EARNED THROUGH U.S. CONTROLLED FOREIGN CORPORATIONS: A POLICY STUDY (Dec. 2000), available at http://www.ustreas.gov/taxpolicy/library/subpartf.pdf

(on file with the Connecticut Law Review).

[FN242]. See discussion supra Part III.A.

[FN243]. See discussion supra Part I.

[FN244]. Hellerstein, supra note 190, at 487.

[FN245]. Charles E. McLure, Jr., Rethinking State and Local Reliance on the Retail Sales Tax: Should We Fix the Sales Tax or Discard It?, 2000 BYU L. REV. 77, 115 (2000). Appendix B sets out the name of 170 tax scholars who supported this reform effort. Id. app.B, at 116-23.

[FN246]. See id. at 89, 90.

[FN247]. Hellerstein, supra note 190, at 487-88.

[FN248]. For example, a "throwback" rule is suggested when a billing address cannot be determined whereby the remote vendor will collect the sales tax at the tax rate imposed by the state where the vendor is located. Id. at 488. Alternatively, a "throwaround" rule is discussed whereby the vendor would impose an average tax rate reflecting previous e-commerce sales patterns and the resulting revenues would eventually be divided among the states in proportion to this historical sales pattern. Id. at 489-90.

[FN249]. See, e.g., TECHNICAL ADVISORY GROUP ON CONSUMPTION TAXES, ORG. FOR ECON. CO-OPERATION & DEV., REPORT BY THE CONSUMPTION TAX TECHNICAL ADVISORY GROUP ¶ 5, at 4 (Dec. 2000) [hereinafter TAG CONSUMPTION TAX REPORT] (focusing on the location of customer's usual place of residence); WORKING PARTY NO. 9 ON CONSUMPTION TAXES, ORG. FOR ECON. CO-OPERATION & DEV., CONSUMPTION TAX ASPECTS OF ELECTRONIC COMMERCE ¶ 22, at 10, ¶ 35, at 13 (Feb. 2001) [hereinafter WORKING PARTY 9 CONSUMPTION TAX REPORT] (discussing how to ascertain the location of consumption by looking to the consumer's permanent address or usual place of residence).

[FN250]. Streamlined Sales Tax Project, supra note 2.

[FN251]. Status of State Efforts on Streamlined Sales Tax Project, at http://www.208.237.129.206/sline/statestatus.pdf (last visited October 19, 2001) (on file with the Connecticut Law Review).

[FN252]. The Uniform Sales and Use Tax Administration Act, once passed by a participating state, authorizes states to enter into the Streamlined Sales and Use Tax Agreement. Uniform Sales and Use Tax Administration Act § 4 (amended Jan. 24, 2001), available at http://www.geocities.com/streamlined 2000/fnlact1222.html#act1222 (on file with the Connecticut Law Review). The agreement provides for the details to harmonize and simplify sales tax bases. STREAMLINED SALES TAX PROJECT, STREAMLINED SALES AND USE TAX AGREEMENT (amended Jan. 24, 2001) [hereinafter SSTP UNIFORM AGREEMENT].

[FN253]. SSTP UNIFORM AGREEMENT, supra note 252, § 310, at 8.

[FN254]. Id. Alternatively, the sale will be sourced to the purchaser's address (which may be the delivery destination). Id. § 310(c), at 8. If the delivery point or customer address cannot be determined, then the sale will be sourced to the location where the product was delivered. Id. § 310(d), at 8.

[FN255]. This "throwback" rule is meant to avoid situations where the online vendor uses networking equipment based in zero-sales tax jurisdictions to transmit the digital good or service. See id. § 310(e), at 8 (indicating that any location that merely provided for the transmission of the digital product should be disregarded).

[FN256]. See id. § 320(a), at 18.

[FN257]. Id. § 304(a), at 4.

[FN258]. See id. §306, at 4.

[FN259]. See id.

[FN260]. See discussion supra Part III.A.

[FN261]. See NAT'L CONFERENCE OF STATE LEGISLATURES, AMENDMENTS BY THE NCSL TASK FORCE ON STATE AND LOCAL TAXATION OF TELECOMMUNICATIONS AND ELECTRONIC COMMERCE TO THE UNIFORM SALES AND USE TAX ADMINISTRATION ACT AND THE STREAMLINED SALES AND USE TAX AGREEMENT (Jan. 27 2001) [hereinafter NCSL UNIFORM AGREEMENT], available at http:// www.ncsl.org/programs/press/2001/amendments.htm (on file with the Connecticut Law Review). For an account of these developments, see Dolores Whiskeyman, State and Federal Officials, International Bodies Face Major Tax Issues, 6 ELEC. COM. & L. REP. 195 (Feb. 21, 2001).

[FN262]. See NCSL UNIFORM AGREEMENT, supra note 261, §§ 304 & 308.

[FN263]. See id. § 312; SSTP UNIFORM AGREEMENT, supra note 252, § 312.

[FN264]. NCSL UNIFORM AGREEMENT, supra note 261, § 714.

[FN265]. See Whiskeyman, supra note 261, at 196.

[FN266]. For background on the NCSL and SSTP political process, see Doug Sheppard, Rise of the Streamlined Project: Fall of the Advisory Commission, 90 TAX NOTES 40, 45 (Jan. 1, 2001) (discussing the urgency felt by the NCSL to act on sales tax unification and simplification as quickly as possible to stop federal efforts to preempt state tax authority).

[FN267]. See generally Eugene F. Corrigan, How Congress Can Help Remote Sellers and States, 91 TAX NOTES 671, 671 (Apr. 23, 2001). Eugene Corrigan, the former executive director of the Multistate Tax Commission, agrees that states should be able to impose their sales tax on out-of-state vendors despite the absence of a physical presence within the taxing state. Id. at 672. In his view, Congress should pass legislation to address Commerce Clause concerns so that the forty-five states can extend their tax jurisdiction over remote sales. Id. at 672.

[FN268]. Corrigan also notes that the real compliance complexity lies with the different local government sales and use taxes. Id. at 672. Accordingly, he argues that Congress should immunize all remote sellers from having to collect and remit any local use tax on any sale of goods shipped from outside the state. Id. at 672 (discussing the problems associated with enforcing local use taxes on remote sellers, including the inability of local taxing personnel to offer guidance to out-of-state sellers). In addition to the thousands of existing local taxing jurisdictions, Corrigan also notes that there are approximately 30,000 additional local taxing jurisdictions that may choose to impose a sales and use tax. Id. at 672. He also notes that "few if any" local governments currently collect significant sales or use tax revenues from sales to out-of-state consumers. Id. In any event, he notes that the ability of states to tax remote sellers would generate more tax revenues and these revenues could be shared with local governments. Id. at 673.

[FN269]. For a discussion of the background behind federal and state reform efforts, see FRIEDEN, supra note 16, at 189-206.

[FN270]. See, e.g., Letter from Elizabeth Harchenko, Chair, Mutistate Tax Commission, to Senator John McCain and Senator Ernest Hollings 2 (Mar. 6, 2001) (on file with the Connecticut Law Review).

[FN271]. Prior to the existence of e-commerce, commentators have noted that the permanent establishment principle had evolved and broadened in many contexts. See, e.g., ARVID A. SKAAR, PERMANENT ESTABLISHMENT: EROSION OF A TAX TREATY PRINCIPLE (1991).

[FN272]. See SSTP UNIFORM AGREEMENT, supra note 252, § 310, at 8-9.

[FN273]. There may be reasons that motivate a multinational corporation to maintain a server in a high tax country (such as the need to ensure faster download times in large consumer markets). But the firm can elect to ensure its server does not constitute a permanent establishment (and hence will not attract taxation) through strategies such as hosting the firm's Web site on a server owned by an unrelated third party or ensuring that the software functions within the server perform mere auxiliary or preparatory activities, such as transmitting the digital product.

[FN274]. See discussion supra Part III.B.

[FN275]. To back-up this point, consider the international tax treatment of a traditional franchisee-retail outlet. The franchisor, a well-branded book chain, is located in Country A and enters into a franchise agreement with a retail bookstore located in Country B. The franchisor

(somewhat unrealistically) makes all-important managerial decisions with respect to the operations of the franchisee located in Country B, including decisions surrounding hiring, marketing and inventory. Under traditional treatment, Country B would be entitled to tax all of the profits attributable to book sales from the franchisee's store. These profits would be reduced by franchise payments from the franchisee to the franchisor (which in turn would presumably increase revenues and profits that could be taxed by Country A). Now consider an Internet book retailer located in Country A. The Internet retailer owns a server located in Country B that constitutes a permanent establishment: digital books are purchased and transmitted via the server to consumer located in Country B. Under the new approach, tax authorities are asked to scrutinize the activities taking place within the server. The server/permanent establishment, at least according to the OECD E-commerce Profit Attribution Report, should be analogized with a service provider and Country B should not be entitled to tax profits attributable to the digital book sales to consumers located in Country B. But Country B might argue that the server/permanent establishment should attract the same tax treatment as the franchisee-permanent establishment.

[FN276]. OECD E-COMMERCE PROFIT ATTRIBUTION REPORT, supra note 228, ¶ 105. In the context of an online retailer: the permanent establishment is only performing low-level automated functions that make up only a small proportion of the functions necessary to act as a full function retail outlet/distributor or as a full function service provider. The level of profit earned is likely to be commensurately low and be very significantly less than that earned by full function retail outlet/distributors or full function service providers.
Id.

[FN277]. The earlier OECD Working Party Report with respect to the server/permanent establishment principle concluded that a permanent establishment, under traditional tax principles, provides core business functions. See OECD CLARIFICATION, supra note 205, ¶ 42.8 ("Where [the server] functions form in themselves an essential and significant part of the business activity of the enterprise as a whole, or where other core functions of the enterprise are carried on through the computer equipment ... there would be a permanent establishment."). The Working Party considered a typical online retailing operation and concluded that the comprehensive automated functions of the server, such as order taking, processing of payments and the delivery of products, and found these comprehensive functions would give rise to a permanent establishment. Id. ¶ 42.9.

[FN278]. See OECD E-COMMERCE PROFIT ATTRIBUTION REPORT, supra note 228, at ¶ 8 ("[T]he functional and factual analysis is likely to show that the permanent establishment is performing only routine functions and is reliant on other parts of the enterprise to provide the intangible assests necessary for it to perform most, if not all, of those functions.").

[FN279]. For example, Indian tax authorities have, in the context of a cross-border e-commerce operation, resorted to the law of physics to assert that a company maintains a virtual presence within India and all activities associated with this virtual presence are hence taxable. Daksha Baxi & Bijal Shah, Electronic Commerce Taxation Evolves in India, 21 TAX NOTES INT'L 1923, 1932 (Oct. 23, 2000).
Laws of physics are applied to interpret the conduct of this transaction. CRSs [Computer

Reservation Systems] use electromagnetic waves for communication. This requires very high velocity of transmission. In such a situation, space collapses and time stops while the transaction is conducted. As a result, the CRS host located in another country becomes one with the travel agent's computer. Hence, the host attains virtual presence in India, resulting in a [permanent establishment].
Id.

[FN280]. These developments could accelerate a trend where multinational companies set up central headquarters in low or nil tax jurisdictions and then conduct strategies such as paying expenses to this center in order to deduct these expenses to lower profits in high tax countries. For a discussion, see, for example, Alex Easson, The Tax Competition Controversy, 18 TAX NOTES INT'L 371, 378 (Jan. 25, 1999) (discussing how multinational firms often form a service center "variously styled as a coordination center, distribution center, financial center, licensing center, or operational or regional headquarters" for tax planning purposes).

[FN281]. In fact, the TAG report noted that some technological risk could be assigned to the permanent establishment. See OECD E-COMMERCE PROFIT ATTRIBUTION REPORT, supra note 228, ¶ 60, at 16. However, if the server is characterized as a service provider then the provider may not be expected to fully compensate the purchaser for lost transactions. Id. ¶ 65, at 17.

[FN282]. See discussion supra Part II.A.2.

[FN283]. ORG. FOR ECON. CO-OPERATION & DEV., MODEL TAX CONVENTION: ATTRIBUTION OF INCOME TO PERMANENT ESTABLISHMENTS 17-29 (1994). For a discussion of these rules in the context of e-commerce, see Cockfield, Balancing National Interests, supra note 16, at 195-97. The TAG notes the problems associated with these rules in the context of the e-tailing hypothetical. See OECD E-COMMERCE PROFIT ATTRIBUTION REPORT, supra note 228, ¶¶ 83-88, at 21-22. The main problem is that different rules exist to allocate intangible rights among related legal entities (for example, corporations) that produce different results when permanent establishments are used. Id.

[FN284]. The TAG advocates a change in tax policy whereby only the head office would maintain ownership over the intangible asset and hence only the head office should be compensated for its use. See id.

[FN285]. See id. ¶ 50, at 14 & ¶ 103, at 25.

[FN286]. To the extent that the server/permanent establishment enters into a more interactive relationship with its customers, it would seem to support arguments for greater profit attribution to the server/permanent establishment. Many United States courts have developed a similar interactive Web site test to see whether the exercise of jurisdiction by a United States court over a foreign company will meet constitutional requirements surrounding due process. See, e.g., Zippo Mfg. Co. v. Zippo Dot Com, Inc., 952 F. Supp. 1119, 1124 (W.D. Pa. 1997) (adopting a sliding scale test whereby the greater the commercial activity conducted via the Internet, the

greater the chance that personal jurisdiction will be found).

[FN287]. For views supporting the need to preserve the ability of importing countries to tax e-commerce profits, see Charles E. McLure, Jr., Taxation of Electronic Commerce: Economic Objectives, Technological Constraints, and Tax Laws, 52 TAX L. REV. 269, 361-62 (1997) (suggesting that residence-based taxation would result in a radical shift in the international distribution of tax revenue); David R. Tillinghast, The Impact of the Internet on the Taxation of International Transactions, 50 BULL. FOR INT'L FISCAL DOCUMENTATION 524, 525 (1996) (discussing how income flows between countries could shift as a result of the internet and the associated ability of a company to do business in a location without having a physical presence in that location). Commentators have proposed rules that could expand source state tax jurisdiction for e-commerce to the location of consumption. See, e.g., Reuven S. Avi-Yonah, International Taxation of Electronic Commerce, 52 TAX L. REV. 507, 510 (1997) (proposing a destination-based system to tax e-commerce profits); Cockfield, Balancing National Interests, supra note 16, at 205- 209 (discussing a withholding tax for e-commerce purposes along with a greater use of the restricted force of attraction principle); Richard L. Doernberg, Electronic Commerce and International Tax Sharing, 16 TAX NOTES INT'L 1013, 1017-18 (1998) (suggesting an e-commerce business-to-business withholding tax may be appropriate); Charles E. McLure Jr., Source-Based Taxation and Alternatives to the Concept of Permanent Establishment, CANADIAN TAX F. 6:1 (2000) (discussing why taxation at the location of consumption for income tax purposes may be the most suitable approach in the digital world). But see TREASURY REPORT, supra note 1, § 7.1, at 21-23 (discussing how residence-based taxation may be preferable).

[FN288]. Some type of sales threshold is necessary in order to lower compliance costs on small e-commerce firms who may have only de minimis sales into a particular country otherwise the firm might have to comply with the income tax laws of every country where it sells goods, inhibiting cross-border trade.

[FN289]. See also Alvin C. Warren, Jr., Income Tax Discrimination Against International Commerce, 54 TAX L. REV. 131, 169 (2001) (discussing how developments apart from e-commerce call for a fundamental reexamination of the international income tax system).

[FN290]. Moving to a regime that supported taxation of income at the location of consumption could also be justified under a historical entitlement principle; importing states often enjoyed tax revenues derived from traditional commerce because significant trade within the importing country often required the setting up of a physical establishment, such as a sales office, that would constitute a permanent establishment under traditional principles. The development of new technologies that permit significant trade without a traditional presence should not be used to upset this traditional sharing of tax revenues.

[FN291]. For a discussion of the movement toward a three-factor formula, see THOMAS C. OMER & MARJORIE K. SHELLEY, STRATEGIC, POLITICAL, AND ECONOMIC FACTORS INFLUENCING STATE TAX POLICY CHANGES (forthcoming 2001) (manuscript at 4-5, on file with the Connecticut Law Review). For a discussion of the political problems associated with moving toward formulary apportionment in the e-commerce arena, see

Cockfield, Balancing National Interests, supra note 16, at 172-75.

[FN292]. Consumers can obviously move from place to place, so the tax rule should focus on the habitual residence of the consumer (for example, her home address) rather than the location where actual consumption of a good or service takes place.

[FN293]. See generally Cockfield, Transforming the Internet, supra note 16, at 1221.

[FN294]. Id. at 1222.

[FN295]. Id. at 1235-37.

[FN296]. SSTP UNIFORM AGREEMENT, supra note 252, §§ 300-18z, 400-06.

[FN297]. Effective technologies may only likely be developed by an industry once a clear incentive exists to come up with the necessary technological developments to lower compliance costs. For example, the United States government could signal through legislation that, beginning on a certain date, remote Internet sellers will have to collect and remit sales taxes. Acting upon this signal, the industry would direct capital toward the development of the necessary technologies to facilitate the collection process under the hope that these investments will generate an acceptable return. Companies have been trying to develop online sales tax collection systems with an eye toward selling these systems to prospective customers. Nevertheless, a clear signal from the government that mandatory collection mechanisms are inevitable would presumably call for more development efforts in this area. See Patrick Thibodeau, Simpler Tax Model Nears, COMPUTERWORLD, Dec. 11, 2000, at 6 (discussing the testing efforts by several companies who plan on developing the automated collection system).

[FN298]. STREAMLINED SALES TAX PROJECT, PILOT STATUS REPORT (May 2001), available at http://www.geocities.com/streamlined2000/pilotstatus5_2001.html (on file with the Connecticut Law Review).

[FN299]. SSTP UNIFORM AGREEMENT, supra note 252, §§ 306 & 400.

[FN300]. Id. §§ 404 & 500.

[FN301]. Id. § 308(b)(5).

[FN302]. See id. § 600.

[FN303]. This example was modified from an earlier example by the author that reviewed potential automated collection mechanisms and state sales taxes. See Arthur Cockfield & Michael Folz-Wexler, Taxing Internet Sales, SAN DIEGO LAW., Sept.-Oct. 2000, at 19-20.

[FN304]. Cockfield, Transforming the Internet, supra note 16, at 1237-40, 1248, 1256.

[FN305]. Id. at 1263 (discussing additional concerns surrounding fiscal sovereignty).

[FN306]. See TECHNICAL ADVISORY GROUP, ORG. FOR ECON. CO-OPERATION & DEV., REPORT BY THE TECH. TECHNICAL ADVISORY GROUP (Dec. 2000) (release date Feb. 2001), available at http://www.oecd.org/pdf/M000015000/M00015516.pdf (on file with the Connecticut Law Review). But see TAG CONSUMPTION TAX REPORT, supra note 249, ¶ 8(c), at 5 (asserting that comprehensive technological solutions would require an unrealistic level of international cooperation and would be difficult to achieve in the long term).

[FN307]. Id. ¶¶ 22-26, at 8-9. The report gives a less favorable impression of consumer self-assessment (for example, voluntary compliance) and registration system for foreign online companies. Id. ¶¶ 17-21, at 7-8.

[FN308]. TAG CONSUMPTION TAX REPORT, supra note 249, ¶ 8, at 5 & ¶ 10, at 6 (discussing an online registration system); WORKING PARTY 9 CONSUMPTION TAX REPORT, supra note 249, ¶ 12, at 8 (reviewing the potential, in the medium term, for digital certificates to identify the location of consumption).

[FN309]. SSTP UNIFORM AGREEMENT, supra note 252, § 318.

[FN310]. Id. § 318(c)(1).

[FN311]. Id. § 318(c)(4). When personally identifiable information is retained, individuals should be provided notice of such retention and the access to their own data and a right to correct inaccurately recorded data. Id. § 318(c)(2) & (6).

[FN312]. This is becoming a particularly hot issue as vendors bundle Internet access services with other services, such as telephone and cable services. State governments fear that a permanent ban on taxes on Internet access will require them to find new revenue sources to recover the losses associated with not being able to tax telephone and/or cable services. See Letter from United States Sen. Jim Costa, to President George W. Bush (Apr. 23, 2001) (discussing the Administration's position on a permanent extension of the moratorium on Internet access taxes) (on file with the Connecticut Law Review).

[FN313]. Consumption taxes are generally considered to be more regressive then progressive income taxes. See John K. McNulty, Flat Tax, Consumption Tax, Consumption-Type Income Tax Proposals in the United States: A Tax Policy Discussion of Fundamental Tax Reform, 88 CAL. L. REV. 2095, 2147 (2000). For a recent treatment of consumption tax versus income tax issues, see generally id.

[FN314]. Howard E. Abrams & Richard L. Doernberg, How Electronic Commerce Works, 14 TAX NOTES INT'L 1573, 1589 (1997) ("Perhaps the most significant implication of the growth of electronic commerce for tax policy may be that technology rather than policy will determine the tax rules of the [twenty-first] century.").

[FN315]. From a game theory perspective, "signaling describes the transmission of information from one party to another in conditions where various players in a competitive game must operate in conditions of less than full knowledge." William Mock, On the Centrality of Information Law: A Rational Choice Discussion of Information Law and Transparency, 17 J. MARSHALL J. COMPUTER & INFO. L. 1069, 1088 (1999). Typical examples of signaling include bidding in bridge or bluffing in poker. Id. But of course laws similarly convey information to market participants.

[FN316]. See, e.g., ABRAM CHAYES & ANTONIA HANDLER CHAYES, THE NEW SOVEREIGNTY: COMPLIANCE WITH INTERNATIONAL REGULATORY AGREEMENTS (1995) (arguing for a "management" model approach to environmental regulation where governments seek to ensure compliance through a cooperative managerial approach emphasizing an interactive process of justification, discourse and persuasion); Daniel A. Farber, Environmental Federalism in a Global Economy, 83 VA. L. REV. 1283, 1300-15 (1997) (discussing different types of multijurisdictional environmental regulation); Jonathan Baert Wiener, Global Environmental Regulation: Instrument Choice in Legal Context, 108 YALE L.J. 677 (1999) (comparing different regulatory choices under alternative legal frameworks).