PREFACE

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Even a cursory glance at the assembled articles in this volume should convince readers that the Internet has become a gravitational magnet for an enormous thicket of policy issues ranging from protecting children to protecting intellectual property and a host of other concerns. Parents, businesses, governments, educators, researchers and consumers have all seemingly discovered what they like and what they don't like about the Internet. The resulting amalgam has produced an environment rife with legal questions and few answers.

One of the reasons that Internet policy is so difficult is simply that the network is global in its scope and is not divided into components that are neatly bound by national jurisdictions. Many of the larger backbone networks that make up the Internet have elements that are linked through many countries. There are hundreds of thousands of networks that are interlinked to form the global Internet. Although the technology has evolved from its origins in the early 1970s, it still adheres to the principle that the address space of the Internet (represented by 32 bit numbers that are hierarchically structured) is not organized around countries but simply around networks. This differs from the telephone system that does use numeric country codes at the "top level" of its numbering structure. For example, "1" is the country code for North America (and some Caribbean countries) and "44" is the country code for the United Kingdom. Instead, the Internet's architecture revolves around the way in which the many networks, that together make up the network of networks that we call the Internet, are topologically interconnected.

There is sometimes confusion about this point because there is a system of naming in the Internet called the Domain Name System ("DNS"). This system also is hierarchical and it *does* include country codes at the top level. For example, one might find a domain name of the form "cnri.reston.va.us" or "www.yahoo.fr." The former is the domain name of a company in Reston, Virginia and the latter is the name of a website in France. There also are a set of top-level domain names that are *not* country codes. These include .com, .org, .net, .edu, .gov, .mil and .int. In addition, the Internet Corporation for Assigned Names and Numbers ("ICANN") recently authorized seven noncountry-code, top-level domain names: .info, .pro, .name, .aero, .coop, .biz and .museum.

The design of the Internet allows *arbitrary* association of any domain name with any Internet address. In fact, the DNS is used to look up the addresses of domain names in much the same way personal names are looked up in the telephone directory to find the associated telephone number. What this means is that a computer with a French domain name, for instance, may be physically located anywhere on Earth. The web servers of the www.yahoo.fr system are located in Sweden, for example.

The inherent flexibility of this *layered* design contributes to the difficulties posed by conven-

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tional legal frameworks that have, as their basis, local, state, or provincial and national laws, together with international treaties. Internet operation is in large degree insensitive to such boundaries. It is not clear in what jurisdiction an Internet transaction has occurred. With a website in Sweden that is labeled as if it is in France and a user in California in the United States who posts an object for auction that is subsequently acquired by a buyer in Paris, it is not clear whether the transaction has taken place in the United States, France or Sweden, or all three or perhaps none of them (i.e., in *cyberspace*).

It is clear that the users are *somewhere* in our real world; so are the networks, the routers and the hosts that make up the global Internet. But the logical pieces of the Internet do not fall easily into neat geo-political boundaries and therein lies some of the challenge. Creating a rational and practical legal framework in which to think about and to deal with disputes or illegal acts is difficult because existing laws may require new interpretation. Or, perhaps new laws and treaties are needed to cope with the virtual environment of the Internet.

In many cases, existing practices seem to apply. Protection of copyright material is just as important in the Internet world as it has been in the material world. But the ease with which digital information can be replicated and distributed on the Internet has led to serious debate about whether and how protections can be assured. In a recent decision, the transmission of digital versions of music under copyright protection on Internet radio stations (i.e., companies that offer digitized files that can be downloaded or *streamed* over the Internet) is subject to royalty payments in the United States. What is not entirely clear is whether such a station is liable only if it has physical presence in the United States or uses Internet servers that are physically in the United States, or perhaps is liable if anyone in the United States accesses the digital music file.

What if someone in the United States causes a computer in Germany to download a copy of a music file from a server in South Africa? What if a search program operating on a computer in Belgium e-mails a copy of a digital music file it found in Turkey to someone residing in Estonia but who uses a Hotmail mailbox? Hotmail is a free e-mail service of Microsoft, which is headquartered in the United States, but the Hotmail server might actually be located in Japan. There is no dearth of complex interactions one can invent, given the enormous flexibility of the Internet. One can even create virtual networks (sometimes called Virtual Private Networks or VPNs) by tunneling through real networks, so that there is the potential for a device anywhere in the world to appear as if it is part of a corporate network based somewhere else.

If transactions executed through the Internet are to be taxed, similar conundrums will apply. Where did the transaction take place? Where were the parties involved? In what jurisdiction will the taxes apply? Who will collect them? Who will account for them? Who is liable and in what jurisdiction for failing to pay taxes? It seems fair to speculate that if answers are not easily obtained by some kind of basic analysis of each case, then we may need to eliminate ambiguity by making up arbitrary but unambiguous ways of making a determination. For example, one might take the view that the billing address of a credit card determines in which jurisdiction a transaction paid for by that card has taken place regardless of the location of the parties or the delivery address of the object of the transaction. This might be a bad idea but it is at least unambiguous.

The transnational nature of the Internet produces other stresses and strains in the real world. Trademarks, for example, tend to be awarded on a national basis. But the generic top-level domain names of the Internet (e.g., .com) are non-national in scope. Worse, in most jurisdictions, the same trademark may be awarded to more than one party as long as the parties are able to show that their use of the same trademark does not lead to confusion for consumers. The XYZ ski manufacturing company and the XYZ television station can coexist because they are in very distinct lines of business. However, the Internet's Domain Name System is less flexible. There can be only one XYZ.COM. How are rights to this domain name to be determined? While a *first-come-first-served* policy is easiest to implement, it may lead to undesirable behavior, such as cybersquatting (i.e., registering of domain names for purposes of selling them to their *rightful* users at a high price).

Cultural differences around the world come into collision in the Internet because anyone can,

in theory, post material on a World Wide Web site that anyone else on the Internet can access. What is considered appropriate for children in one culture may not be in another. Indeed, the very definition of a child may vary from one culture to the next.

These are just some of the many challenges facing legislators as they work to create legal environments in which electronic commerce and the other promises of the Internet can be realized. Readers will find the contents of this volume thought-provoking at the least, profound in many instances and bewildering in others. Welcome to the 21st Century!