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Access to the National Information Infrastructure

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ACCESS TO THE NATIONAL INFORMATION INFRASTRUCTURE

Henry H. Perritt, Jr.*

How the law addresses the issue of access rights to the National Information Infrastructure is bound to be critical in the radical landscape of cyberspace, where users play interchangeable roles and every consumer may also be a producer. Professor Perritt provides a detailed overview of existing legal doctrines which may provide guidance in structuring access rights, including common carrier, contract, antitrust, and constitutional law precepts. He concludes that given the novel nature of the Information Superhighway, such traditional sources of law provide only limited guidance. Legally mandated access duties may be required in certain areas, but that mandate should be narrowly tailored and restricted to interoperability and compatibility concerns. Externally imposed legal access duties may be unnecessary where competitive market forces act as a natural guarantor of access rights.

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INTRODUCTION

The National Information Infrastructure (NII)—consisting today of distinct components including the telephone system, broadcast and cable television networks, libraries, bookstores, remotely accessible databases, and the Internet—will soon converge. New broadband-switched networks¹ with digital connections will bring the NII into homes and public facilities. Increasingly, this revolutionary medium will have the potential to provide an electronic market for information, and an electronic town hall.

For this vision to be realized, however, a truly uniform infrastructure must exist, not merely a multiplicity of electronic boutiques, none of which is connected to the others. It is not yet clear how legal standards and governmental policies best can be structured to encourage the development of such a uniform infrastructure. One possibility, abstractly speaking, would be to impose legal obligations on parts of the whole to provide access to other parts of the whole. Conversely, it is conceivable that market forces will provide the best stimuli to the development of a uniform NII, considering that new technologies and consumer preferences are difficult to predict and therefore regulation may fail. Determining the appropriate boundary between legal and market forces is the central challenge of NII policy. This article addresses how that boundary should be defined with respect to the specific issue of access rights.

Law emerges from human cultures, and the NII represents a convergence of five different cultures: Telephone systems, broadcast media, tex-

1. See generally Note, *The Message in the Medium: The First Amendment on the Information Superhighway*, 107 HARV. L. REV. 1062 (1994) [hereinafter Note].

The information superhighway will consist of a fiber-optic network . . . that will carry virtually limitless television channels, home shopping and banking, interactive entertainment and video games, computer data bases, and commercial transactions. Technically termed a broadband communications network . . . the superhighway will carry all information, from voice to video, in the form of digital bits.

Id. at 1067.

tual media, personal computing, and the Internet. Broadcasters, entertainment producers, and cable carriers are most familiar with high-bandwidth, largely analog, and mostly one-way networks.² Telephone companies, working within the confines of a detailed regulatory scheme, have recently begun to escape from an environment dominated by analog signals,³ and have achieved nearly perfect interoperability and universal service at affordable prices. Text publishers, librarians, and government information enterprises know a context in which networks are multipoint and mostly digital. Personal computer (PC) hardware and software producers and users have known a world in which distributed computing, free markets, and autonomous individuals or small groups are the norm, as free-market entrepreneurs have wrought a revolution in computing and have brought high levels of technology to millions of small businesses and ordinary people, with little guidance from the government. Internet users are accustomed to being able to engage in information transfer and significant interoperability through a wide-area network linking dissimilar computing systems;⁴ for them, governmental guidance was a great success, taking inter-networking standards from the lab to the marketplace.

Within these five cultures, three conceptual models for information transfer have maintained distinct characteristics in the past but now are merging: broadcast, messaging, and database models. The broadcast model historically was one-way, analog, and entertainment-dominated. But currently, the broadcast model is being deflected toward the messaging model by digital video and more demanding switching requirements for larger numbers of channels.

The messaging model historically was dominated by text. Today, however, advances in desktop computers have facilitated the integration of graphical images and digital audio clips into textual objects and the easy communication of such integrated objects through messaging networks. Such integration puts pressure on bandwidth because graphical objects and digitized audio require much more bandwidth than text. Integration also puts pressure on standard setting because there are many different ways to represent graphical images and audio signals, and to integrate them with text.

Like the messaging model, the database model historically was dominated by text. In the past it was the least open, or the most proprietary, of the three models. But because no single database provider has been able to control all of the information that its customers might want, re-

2. "Broadcasting delivers video and audio programming over the airwaves to television and radios within range of its signal. . . . Cable television sends video programming as analog signals—measurable impulses of voltage—over coaxial cables. Like broadcasting, cable allows for primarily one-way transmission."

Note, *supra* note 1, at 1064-65.

3. *Id.* at 1065.

4. "Accessing computer networks requires a computer, a modem, and a phone line. The user dials the "host" computer of the network or service. Once connected, the user can communicate over the network through the modem, which translates digital data from the sending computer into analog signals appropriate for phone lines." *Id.* at 1066.

cently there has been pressure to open up these architectures, primarily through information gateways, to other holders of information. Client-server architectures and disaggregation of information value⁵ may produce substantial efficiency gains in this model.

The Internet, albeit in a primitive way, is a hybrid which illustrates combinations of models. Usenet⁶ newsgroups combine the database and messaging models. Listservs⁷ combine the messaging and broadcast models. World Wide Web,⁸ gophers,⁹ and anonymous FTP servers¹⁰ combine the database and broadcast models in the sense that one can "broadcast" or publish by posting an information object in a place known to be frequently and widely consulted.

Ideally, no single one of these models or cultures should dominate the NII. Each of the three models and five cultures has valuable attributes to offer. The interoperability and universal service features of the telephone system are worth perpetuating. So too are the connectivity, interoperability, and open architecture features of the Internet. The enormous market which has been tapped by broadcast media may stimulate innovative technology investment and lower prices. The worthwhile traditions of artistic creativity, political discourse, and packaging of information which have historically been associated with textual media should be continued. The PC revolution has demonstrated the superiority of the free market and entrepreneurial effort in facilitating the development of good, affordable software for ordinary people. The challenge for policy

5. Separating raw content from indexes, pointers and other finding aids is an example of disaggregating information value. See Henry H. Perritt, Jr., *Unbundling Value in Electronic Information Products: Intellectual Property Protection for Machine Readable Interfaces*, 20 RUTGERS COMPUTER & TECH. L.J. 415 (1994) (describing different types of value that may be bundled into information products) [hereinafter Perritt, *Unbundling Value*].

6. Usenet is a sophisticated, specialized implementation of electronic publishing through networks. See Henry H. Perritt, Jr., *Tort Liability, the First Amendment, and Equal Access to Electronic Network*, 5 HARV. J.L. & TECH. 65, 137 (1992) [hereinafter Perritt, *Tort Liability*]. In the Usenet approach, authors post materials on local conferences. An application makes copies of the new postings from the local conference and transmits them to the next Usenet node. The next node sends the new postings to the next node, and so on, throughout the entire Usenet network. See *id.*

7. Listservs are automatic mailing lists. See Henry H. Perritt, Jr., *The Congress, the Courts, and Computer Based Communications Networks: Answering Questions About Access and Content Control*, 38 VILL. L. REV. 319, 327 n.7 (1993) [hereinafter Perritt, *The Congress*]. While technically a form of electronic mail, listservs are functional hybrids of e-mail, electronic conferencing, and electronic publishing. See *id.*

8. The World Wide Web, originally developed in Switzerland, is an Internet interface which organizes information as a set of hypertext documents. See HARLEY HAHN & RICK STOUT, *THE INTERNET COMPLETE REFERENCE* 495-512 (1994).

9. Gophers are primary Internet access tools which allow easy menu-driven use of Internet resources. HAHN & STOUT, *supra* note 8, at 429-57.

10. "FTP" means File Transfer Protocol, the basic specifications supporting Internet file transfer. FTP services allow Internet files to be copied, through using a client program on a computer to connect to a server program on a remote computer, or host. Anonymous FTP allows connection to the remote computer without registration as a user of that computer. It constitutes the principal software distribution method on the Internet. HARLEY & STOUT, *supra* note 8, at 297-329.

and law is to retain the best aspects of the different cultures as they converge into one.

This article draws the conclusion that traditional legal doctrines provide only limited guidance in defining the contours of access rights for the NII. Statutory common carriage is too detailed and rigid a doctrine. There is, however, some potential for common law concepts to aid in the development of a unified law of NII access rights. Common carriage doctrine could be developed to address certain potential access disputes. Collective negotiation of standard service terms could be governed effectively by a contract regime. Further, antitrust essential facilities doctrine may provide a useful way to ensure access to governmental information. Beyond such common law controls, legal intervention in the form of limited statutory action may be required. Statutory action should be unnecessary to ensure access to most parts of the NII because competitive market forces are likely to prove sufficient. With respect to certain aspects of the NII, however, legally mandated access is appropriate. Such a mandate should be narrowly tailored and limited to interoperability and compatibility concerns.¹¹

I. FOCUS: ACCESS BY SUPPLIERS OR BY ULTIMATE CONSUMERS?

Access rights and universal service issues are more difficult to distinguish in the NII context than in the context of prior commercial technologies. The NII in many ways resembles the Internet, in which every consumer of information is also a potential supplier.¹² Universal service, which has traditionally been considered in the context of telephone systems, now has implications for producer access to channels of distribution because the end users are also potential producers. Historically, producer

11. This article overlaps with, but is distinct from, other recent analyses of NII legal issues. Like the author's 1992 article in the *Harvard Journal of Law and Technology*, this piece analyzes the possibility of imposing statutory and common law common carrier obligations to provide access to the NII. See Perritt, *Tort Liability*, *supra* note 6. Unlike the Harvard article, however, this writing also explores antitrust and implied contract theories and is more concrete about the kinds of business arrangements that might invite assertions of access rights. Again, like the author's 1993 Villanova Symposium contributions, this article considers how a supplier of network services might have an implied contract obligation to provide access. See Perritt, *The Congress*, *supra* note 7; Henry H. Perritt, Jr., *Dispute Resolution in Electronic Network Communities*, 38 VILL. L. REV. 349 (1993) [hereinafter Perritt, *Dispute Resolution*]. But unlike the Villanova article, this article does not address governance structures within a contractual framework. The author's former student, John Stevens, thoroughly explored antitrust essential facilities doctrine as a means of guaranteeing access to information infrastructure in another contribution to the Villanova Symposium. This article defers to his detailed analysis of the essential facilities doctrine, but explores in somewhat greater depth other antitrust theories as well as common carrier and implied contract theories. See John M. Stevens, *Antitrust Law and Open Access to the NREN*, 38 VILL. L. REV. 571 (1993).

12. In the NII, "[i]ndividuals will no longer simply be "viewers" or "receivers" of the electronic media; they will become "users" of it, capable not only of creating their own video, voice, and text messages, but also of communicating them to a large number of others." Note, *supra* note 1, at 1083.

access to channels of distribution was primarily considered in the context of broadcast and cable television, which was predominantly a one-way medium. In the distributed, Internet-like NII architecture of the future, even large producers almost certainly will use the same infrastructure both to acquire their raw material and to deliver their product. Thus, they will be both consumers and producers through the same network connections. One may be skeptical that significant markets will exist for the types of casual content produced by small consumer/producers. In that specific context, the quality and finding-and-retrieval problems may be too great. But even if real markets distinguish to some degree between end user/consumers and somewhat larger producers, it will be difficult for the law to distinguish, as a threshold matter, between producers and consumers, since the two categories are blended together in the NII context.¹³

The convergence of consumer and producer roles has significant implications for the nature of legal regulation. Access to the NII in order to put something in becomes as important as access in order to take something out. As a general proposition, compelling a provider to allow someone to put something in potentially involves much greater impact on product design and facility control than compelling the provider to let someone take something out. For example, forcing a supermarket to allow anyone to shop there represents a certain amount of interference. But that is far less interference than forcing the supermarket to provide shelf space for a particular product. Similarly, the law interferes far less with the entrepreneurial prerogatives of an information services provider by forcing it to allow someone to extract information from a preexisting system than by forcing the same provider to accommodate a new type of information content as something supplied or put in. The second type of access may force system redesign, while the first type is unlikely to force such changes. At most, ensuring the first type of access, information extraction, would merely require an increase in capacity.

The way out of this dilemma may lie in specifying supplier-oriented types of access controls that are less intrusive than the alternative of requiring providers to accept many types of content. Requiring one supplier to be compatible with another—that is, requiring interoperability—does not impose as much on the obligated entity, as requiring providers to accommodate incompatible suppliers. Further, if compatibility is not designed into a supplier's facility from the outset, translators always can be written and used at the cost of some type of performance penalty.

II. SURVEYING THE INTERESTS INVOLVED

Access rights involve the interests of three types of network service users, in addition to the interests of the providers who may owe access duties. End users may assert a right to have initial connections made, as

13. "The convergence of technologies will engender a convergence of roles between system owners, programmers, and users." Note, *supra* note 1, at 1083.

well as a right not to have existing service terminated. Suppliers of content or value-added services may assert rights to have their content or other value-added services carried. Other intermediaries, more or less in competition with the provider potentially owing the duty, may assert rights to interconnections. The end user's access rights can be compared to those of a telephone subscriber. The supplier's access rights can be compared to those of a shipper by rail, truck, air, or sea seeking access to a transportation carrier, and to those of an originator of video programming seeking a distribution channel. The access rights of an intermediary seeking interconnections can be compared to those of a local bypass telephone carrier, to a non-wire line cellular telephone carrier seeking interconnections from a former Bell Company, or to a competing interexchange carrier like MCI seeking connections from AT&T.

The question of access rights implicates legitimate interests belonging both to the entity desiring access and to the entity refusing access. End users may seek access to receive content. Suppliers of content or value-added services may need access to reach particular markets in an economical fashion. For such entities, denial of access may be tantamount to exclusion from the market. Competing carriers have similar concerns. These concerns implicate public policy interests in competitive markets, as expressed by the antitrust laws, as well as the economic interests of the entity denied market access. For some entities, including content and value-added suppliers, end users, and competing carriers, denial of access may frustrate expectations based on representations made by suppliers of network services. Such frustration implicates the interests traditionally justifying contract enforcement.

Entities refusing access and opposing imposition of access duties may assert property rights in their systems and the privilege of free expression under the First Amendment. A core right in the bundle of rights that makes up property is the right to exclude. Free expression includes the privilege not to be forced to express disfavored ideas as well as the privilege to express favored ones. On this point, entities refusing access may conclude that access by a particular customer is inconsistent with the definition of that entity's product. For example, A may deny access to B because B wants to put content relating to the politics of health care reform onto A's discussion group limited to particular legal issues relating to the delivery of health care. Or, A may deny access to B because A fears that granting access to B will anger its other customers, resulting in a boycott. Alternatively, A may deny access in order to protect itself from potential liability for trafficking in certain kinds of pornography, for infringing on intellectual property rights,¹⁴ or for invasion of privacy.¹⁵

14. See *Sega Enters. Ltd. v. MAPHIA*, 857 F. Supp. 679 (N.D. Cal. 1994) (issuing preliminary injunction against Internet node operator indicted for making available computer programs that allegedly infringed copyrights); *Playboy Enters., Inc. v. Frena*, 839 F. Supp. 1552, 1555-56 (M.D. Fla. 1993) (finding bulletin board operator liable for allowing trademark-infringing and copyright-infringing images to be posted on its bulletin board).

15. In several of these examples, there is a tradeoff between content-related liability

Viewed this way, the interests of suppliers seeking to limit access duties may be protected by the First Amendment and by the freedom of contract doctrine.¹⁶ The privilege of using private property as the owner wishes, unless the government can justify interference under the takings doctrine, may also be implicated.

There is an additional public interest which may be involved, beyond the public interest in efficient markets and in the fulfillment of promise-based expectations. That is the public interest in quality infrastructure, exemplified by public support for roads and the post office, and by the strategic goal of universal service which underlies telephone regulation. The public needs an infrastructure—a system in which all the pieces work together—rather than merely a patchwork collection of largely independent proprietary communication services. Such a necessity justifies governmental intervention with respect to communications and information infrastructure because of the existence of network externalities. A consumer who connects to a communication service that is not connected to other communication services enjoys less utility than if interconnection exists. The increase in utility with the larger scope of interconnected networks is a network externality.¹⁷ In certain circumstances, the presence of network externalities may serve as a sufficient economic incentive for private-sector decisionmakers to make the interconnections on their own. But the economic literature suggests that there is an important range of circumstances in which private decisionmaking will not lead to compatibility and interconnection, thus depriving consumers of the benefits of network externalities.¹⁸ In other words, interconnected network effects

on the part of the provider and its privilege to deny access to the supplier of the content. See Perritt, *Tort Liability*, *supra* note 6, at 95-130 (discussing tort liability and First Amendment principles as they relate to electronic networks).

16. The First Amendment provides in pertinent part that "Congress shall make no law . . . abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the government for a redress of grievances." U.S. CONST. amend. I. See generally Note, *supra* note 1, at 1063 ("A reexamination of the role of technology in First Amendment treatment of the media is particularly important today because a technological revolution unprecedented in the history of telecommunications is at hand.").

17. The same level of network externalities can arise from a single network with the same scope as multiple interconnected networks. In other words, in terms of network externalities, consumers may enjoy as much utility from a single monopoly as from interconnected but independent providers. The point is that consumer utility suffers if the market structure consists of disconnected multiple providers.

18. Nicholas Economides, *Desirability of Compatibility in the Absence of Network Externalities*, 79 AM. ECON. REV. 1165, 1180 (1989) (comparing the extremes of full compatibility and full incompatibility and concluding that the former produces higher prices and profits); Joseph Farrell & Carl Shapiro, *Dynamic Competition with Switching Costs*, 19 RAND J. ECON. 123, 134 (1988) (asserting that when switching costs exist, established firms keep their prices high enough to allow new entrants to serve new customers because of inability of established firms to discriminate between new customers and existing customers; switching costs thus induce more than efficient levels of new entry, unless high economies of scale or network externalities exist, in which case the incumbent tends to serve all buyers); Michael L. Katz & Carl Shapiro, *Product Introduction with Network Externalities*, 40 J. INDUS. ECON. 55 (1992) (noting that in general, firms introducing new technologies are biased

sometimes may be viewed as a public good¹⁹ that suppliers have difficulty internalizing into their preference functions.

Figure 1

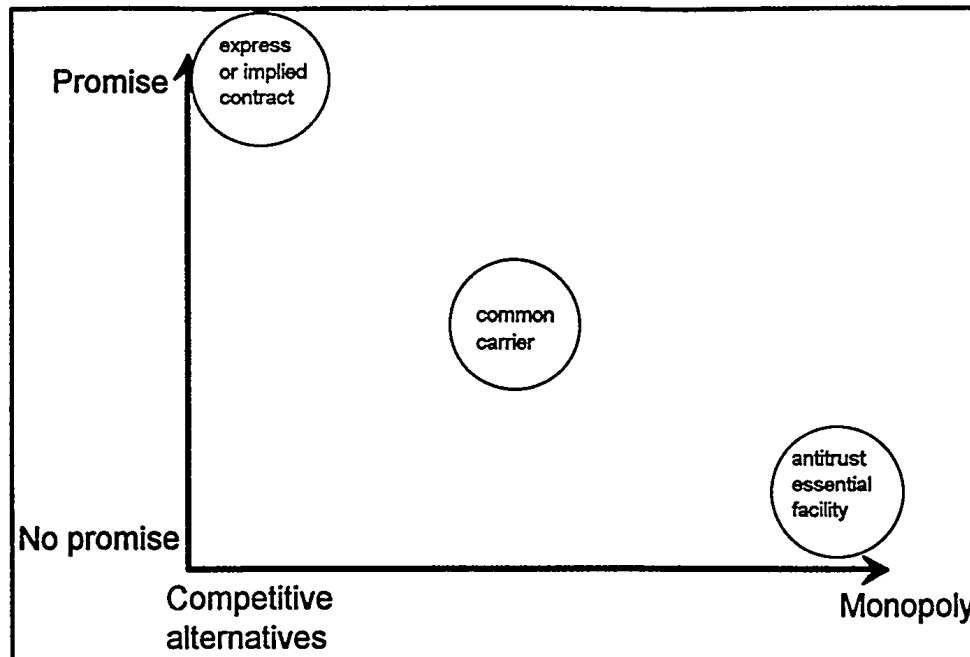


Figure 1 illustrates how the market, expectation-based, and public

against compatibility; but, if compatibility is a practical prerequisite to entry, existing firms prefer incompatibility, and new entrants prefer compatibility; preference of new firms against compatibility arises from extra design cost to achieve compatibility and may produce a bandwagon effect in favor of the new technology; sophisticated licensing results in compatibility and raises total surplus); Michael L. Katz & Carl Shapiro, *Network Adoption in the Presence of Network Externalities*, 94 J. POL. ECON. 822 (1986) (asserting that markets are biased toward nonstandardization because consumers ignore effects on other consumers when making consumption decisions; when standardization does occur, the wrong standard may be chosen). See also Michael L. Katz & Carl Shapiro, *Network Externalities, Competition, and Compatibility*, 75 AM. ECON. REV. 424, 425 (1985). In that article, the authors assert that consumption externalities give rise to demand-side economies of scale. Multiple fulfilled expectations equilibrium may exist for a given set of cost and utility functions. If consumers expect a seller to be dominant, then consumers may be willing to pay for the firm's product and the firm will be dominant. Firms' joint incentives for product compatibility are lower than social incentives. Further, firms with good reputations and large existing networks will oppose compatibility even though welfare might be increased by a move to compatibility, while firms with small networks or weak reputations will favor compatibility even if social costs of compatibility outweigh benefits. See *id.* See also Carmen Matutes & Pierre Regibeau, "Mix and Match": *Product Compatibility without Network Externalities*, 19 RAND J. ECON. 221, 221 (1988) (finding that product compatibility increases range of consumer choices resulting in generally higher consumer and social surplus when full compatibility prevails).

19. See Robert C. Ellickson, *Property in Land*, 102 YALE L.J. 1315, 1384 (1993) (explaining justification for government-owned roadways in a regime of private property).

interest dimensions have justified legal imposition of access duties. The X axis reflects holding out, the Y axis reflects monopoly power, and the Z axis reflects public interest. Common law and statutory common carriage doctrine has historically been justified both by the concepts of monopoly power and holding out.²⁰ Contract obligations, by comparison, have been justified predominantly by holding out alone. Finally, universal access and interconnection obligations have been justified largely by the public interest. The public interest dimension of Figure 1 would justify legal intervention aimed at ensuring interoperability even where the monopoly power and expectations dimensions would not justify such intervention.

III. THREE KINDS OF PROBLEMS

The positions, interests, and legal treatment of different entities in the infrastructure also can be thought of in terms of the relationships of such entities to each other and to the markets. Both vertical and horizontal relationships are important. In the vertical relationship, A supplies communications services and B supplies value-added features, such as finding and retrieval aids. A and B make a contract, giving B the exclusive right to supply a particular market. Competitors of B are excluded. In the horizontal configuration, A, B, and C compete in providing, for example, Internet connection services. A and B jointly operate a router and deny C access to the router, thus disadvantaging C in serving the market. Unilateral action also is conceivable. For instance, A may refuse to handle traffic from B because of political pressure from those opposed to B's point of view.

In order to make the analysis more concrete, this article assumes an NII architecture much like today's Internet, in which multiple backbones exist (such as NSFnet, CIX, or ANS CORE).²¹ Under this architecture, multiple Internet access providers compete with each other to provide basic backbone connection services and also to offer certain value-added services (Cerfnet, Nearnnet, Barnet, NetCom, and JVNCnet). A large number of Internet nodes²² offer finding and retrieval aids like Gopher and World Wide Web. Other Internet nodes offer content through anonymous FTP or through integration with Web or Gopher servers.²³ Faced with increasing competition from competitive access providers in local markets, competing interexchange carriers in the interexchange market,

20. See Perritt, *Tort Liability*, *supra* note 6, at 77-79 (analyzing use of monopoly power and holding out concepts in applying common carrier doctrine); National Ass'n of Regulatory Util. Comm'rs v. FCC, 533 F.2d 601, 608 (D.C. Cir. 1976) (determining common carrier status on basis of holding out principle).

21. The Internet evolved from a network called the Arpanet that was sponsored by the Department of Defense. HAHN & STOUT, *supra* note 8, at 2. Descendants of the original Arpanet form the global backbone of today's Internet. *Id.*

22. Computers in the Internet may be referred to as nodes or hosts. HAHN & STOUT, *supra* note 8, at 12-13.

23. Just as user terminals on an office network access a main server, so too do Internet user computers, acting as clients, access server computers in a client/server relationship. HAHN & STOUT, *supra* note 8, at 14-15.

and traditional X25 public data networks like Sprintnet and BT Tymnet, interexchange and local access telephone companies offer switched digital and analog communications channels both on a dialup and dedicated-line basis.

It is important to understand that service providers in the NII range from pure communication service providers to nearly pure content providers. Between these extremes lie some of the most interesting new technology applications, including Gopher servers and World Wide Web servers. While the historical dichotomy between information providers and communications providers has collapsed under the pressure of new technology, appreciation of the continuum still is valuable.

IV. SOURCES OF RIGHT

There are a number of legal theories which have been advanced to assure access to the NII as possible alternatives or supplements to statutory common carriage and new statutory "open platform" requirements.²⁴ One such theory, still mainly speculative, involves imposing a duty based on common law common carrier obligations. This theory is built on common law concepts that antedate enactment of the Interstate Commerce Act—the first source of statutory common carriage. These common law concepts were meant to prohibit discriminatory denial of service by entities holding themselves out as serving everyone and possessing market power.²⁵ A second theory which may ensure access to the NII is antitrust essential facilities doctrine and related refusal-to-deal doctrine, which together prohibit denial of access to essential facilities by those in competition with the entities denied access.²⁶ The Supreme Court's decision in *United States v. Terminal Railroad Ass'n*²⁷ sets forth the basic standard for requiring an entity controlling an essential facility to provide access to nonparticipating competitors.²⁸

Probably the most attractive doctrine, because of its flexibility, is that of express and implied contract. Under this approach, a service provider that holds itself out as serving the public would be prohibited from denying access without proper justification. Contract approaches are lim-

24. See H.R. 3636, 103d Cong., 2d Sess., reprinted in 140 CONG. REC. H5216-28 (daily ed. June 28, 1994) (defining open platform concept and requiring FCC determinations).

25. See Perritt, *Tort Liability*, *supra* note 6, at 73-84 (discussing common law approaches to providing equal access to services, products, and facilities).

26. See Perritt, *Dispute Resolution*, *supra* note 11, at 349 n.3. Under such doctrine, a company which controls an essential facility or "strategic bottleneck" in the market may be liable for an antitrust violation if it fails to give competitors fair access. *United States v. AT&T*, 524 F. Supp. 1336, 1352-53 (D.D.C. 1981). In the NII context, a supplier controlling an essential communications medium may owe such an access duty. As an example, "for most small computer and modem users, the local telephone system represents a bottleneck through which all data communications must pass" prior to reaching networks such as Tymnet or Sprintnet. Perritt, *Dispute Resolution*, *supra* note 11, at 349 n.3.

27. 224 U.S. 383 (1912).

28. See generally John M. Stevens, *Antitrust Law and Open Access to the NREN*, 38 VILL. L. REV. 571 (1993).

ited by the historical treatment of credit card arrangements and of commercial advertisements in which the representation by the provider is treated, not as an offer, but rather as a solicitation of offers.²⁹ The efficacy of a contract-based regime for assuring access could be strengthened by an approach to tort immunity that extends immunity only to those providers that publish, possibly through some central database, their terms of service and disavow any intent to screen or censor content.³⁰

A. Statutory Common Carrier

The best known source of access rights and duties in communications networks is the set of statutory common carrier obligations imposed under title II of the Federal Communications Act of 1934 (Title II).³¹ These statutory provisions extend a statutory common carrier scheme previously outlined by the Interstate Commerce Act,³² which in turn was derived with little change from common law common carrier obligations.³³ Under Title II, common carriers must furnish communication services upon reasonable request, furnish physical connections with other carriers, establish "through routes," charges, and allocation schemes for the charges among participating carriers, and establish facilities and regulations for through routes.³⁴ Carriers may not discriminate unjustly or unreasonably or give undue or unreasonable preferences to different classes of users.³⁵ The charges, practices, classifications, and regulations of such carriers must be just and reasonable.³⁶

Of course, nondiscrimination and interconnection are not the only obligations imposed on common carriers under title II of the FCA. The fact that other duties may exist is part of the problem with pursuing access rights under Title II. Moreover, the Supreme Court's decision in *MCI Telecommunications Corp. v. AT&T*³⁷ raises questions about the FCC's power to simplify the details of common carrier regulation.³⁸

29. See Perritt, *Dispute Resolution*, *supra* note 11, at 365-84 (reviewing credit card and commercial advertisement cases).

30. See Perritt, *Dispute Resolution*, *supra* note 11, at 400 (proposing draft statute to confer tort immunity on network service providers "publishing terms of service that handle traffic without discrimination or content control").

31. 47 U.S.C. §§ 201-226 (1991 & Supp. 1994).

32. 49 U.S.C. §§ 301-327, *repealed by* Pub. L. No. 95-473, §§ 4(b)-4(c), 92 Stat. 1466, 1470 (1978).

33. For a detailed discussion of common law common carrier obligations, see *infra* notes 73-81 and accompanying text.

34. 47 U.S.C. § 201(a) (1988).

35. 47 U.S.C. § 202 (1988); Note, *supra* note 1, at 1066.

36. 47 U.S.C. § 201(b) (1988).

37. 114 S. Ct. 2223, 2225 (1994) (holding that the authority of the FCC to "modify any requirement" under the Communications Act, 47 U.S.C. § 203(b)(2) does not authorize it to make basic and fundamental changes in the regulatory scheme).

38. See 47 U.S.C. § 201(b) (1988) (stating that charges, practices, classifications, and regulations must be just and reasonable); § 203 (stating that tariffs must be filed and no changes may be made without 120 days notice to the commission and the public); §§ 204-205 (providing for hearings and power to prescribe just and reasonable charges); § 208 (pro-

1. Interconnection requirements

The requirement to maintain physical interconnections and through routes is derived from section 1(4) of the original Interstate Commerce Act.³⁹ The Interstate Commerce Act's original obligation provisions were expanded by the Mann-Elkins Act of 1910⁴⁰ to eliminate a burdensome precondition to administrative action imposed by *ICC v. Northern Pacific Railway*.⁴¹ That case involved an ICC order requiring the Northern Pacific Railway to offer through routes and joint rates for passengers and their baggage to and from points on the Chicago and Northwestern Railway between Illinois and Iowa, as well as points on the Union Pacific Railroad between Colorado, Nebraska, and Missouri.⁴² The joint rates were to be the same as the present rates between the same points via the Northern Pacific.⁴³ All of the points were reachable by the Northern Pacific or its connecting railroads.⁴⁴ The Supreme Court, however, held that the ICC had no authority to issue such an order in the absence of a preliminary finding that no reasonable or satisfactory through route already existed.⁴⁵ Almost immediately after this holding was issued, Congress enacted the Mann-Elkins Act provision eliminating the precondition of making that finding.⁴⁶

In the communications context, a number of early disputes resulted from the Bell System's policy of refusing to connect with certain independent telephone companies between 1894 to 1906. Thirty-four states enacted laws compelling physical connection.⁴⁷ Addressing the phone

viding for standing to complain about violations); § 214 (prohibiting extensions of line without certificate of convenience and necessity); § 215 (regulating commission examination of transactions that might have an impact on services).

39. Interstate Commerce Act, Pub. L. No. 59-337, 34 Stat. 584 (1906) (recodified as amended at 49 U.S.C. § 11101(a) (1988)).

40. Mann-Elkins Act, Pub. L. No. 61-218, ch. 309, 36 Stat. 539, 552 (1910). The Mann-Elkins Act extended the Interstate Commerce Act's coverage to include telephone, telegraph, and cable companies. It was later replaced by the Communications Act of 1934.

41. 216 U.S. 538 (1910).

42. *Id.* at 542-43.

43. *Id.* at 543.

44. *Id.* at 542-43.

45. *Id.* at 544.

46. Kenneth A. Cox & William J. Byrnes, *The Common Carrier Provisions—A Product of Evolutionary Development*, in *A LEGISLATIVE HISTORY OF THE COMMUNICATIONS ACT OF 1934*, at 25, 29, 43 (Max D. Paglin ed., 1989).

47. *Id.* at 42 n.132. See also *Oklahoma-Arkansas Tel. Co. v. Southwestern Bell Tel. Co.*, 45 F.2d 995, 997 (8th Cir. 1930), *cert. denied*, 283 U.S. 822 (1931). The court first found that Bell System had no duty to provide physical interconnection with the local phone company based on either contract or common law theories. *Id.* at 997. The court then construed an Arkansas state statute to require telephone connections for individual customers, but not to require the admission of outside rival companies to a proprietary use of its lines. *Id.* at 998. The court conceded that similar statutes in other states had received contrary interpretation. *Id.* at 998-99. The court also rejected Oklahoma-Arkansas' argument that providing physical connections to certain telephone companies while refusing such connections to others violated common carrier duties. *Id.* at 1000. Finally, the court noted that Congress had conferred full regulatory powers over interstate carriers engaged in wire transmissions

system context, the interconnection obligation under the Federal Communications Act is a reasonableness obligation.⁴⁸ The most significant interconnection decision was the FCC's *Carterfone*⁴⁹ decision in 1968, which started the unraveling of the Bell System.⁵⁰ The *Carterfone* decision has been narrowly interpreted by subsequent court decisions only to prohibit telephone company refusals of "harmless" interconnections,⁵¹ while allowing refusals based on justifications of detriment to the public or adverse effects on the telephone system.⁵² In rationalizing regulation of "record carriers," Congress required then-dominant Western Union and RCA to provide unrestricted interconnection to the lines of other record carriers,⁵³ while exempting carriers that did not control significant market shares from certain interconnection requirements.⁵⁴ Yet, the distinction between dominant and nondominant carriers in application of common carriage law to telephone carriers was essentially rejected by the Supreme Court in *MCI Telecommunications Corp. v. AT&T*.⁵⁵ While Congress had explicitly sanctioned the distinction with respect to record carriers, it had remained silent with respect to telephone carriers.

on the Interstate Commerce Commission, thus, state jurisdiction over such cases was suspended. *Id.* See also *Gardner v. Western Union Tel. Co.*, 231 F. 405, 409-12 (1916) (finding federal preemption of inconsistent state constitutional provision under Interstate Commerce Act), *cert. denied*, 243 U.S. 644 (1917).

48. *Rogers Radio Communications Servs., Inc. v. FCC*, 751 F.2d 408, 415 (D.C. Cir. 1985) (holding that telephone company did not violate Communications Act by denying noncompensatory connection to nonwire line paging service and that it was not reasonable or in the public interest to require telephone company customers to subsidize paging service); *Capital Network Sys., Inc. v. FCC*, 28 F.3d 201, 203-04 (D.C. Cir. 1994) (describing relationship between major interexchange carriers and pay telephone companies with respect to access to databases of telephone credit card numbers, and noting that pay telephone provider denied access to database could file complaint with FCC, but affirming rejection of tariff that would shift costs to AT&T).

49. *In re Use of the Carterfone Device in Message Toll Tel. Serv.*, 13 F.C.C.2d 420, *recons. denied*, 14 F.C.C.2d 571 (1968).

50. *Louisiana Pub. Serv. Comm'n v. FCC*, 476 U.S. 355, 375 n.4 (1988) (explaining FCC decisions approving preemption of CPE interconnection prohibitions by states); *North Carolina Util. Comm'n v. FCC*, 552 F.2d 1036, 1042-43 (4th Cir.), *cert. denied*, 434 U.S. 874 (1977); *North Carolina Util. Comm'n v. FCC*, 537 F.2d 787, 794 (4th Cir.), *cert. denied*, 429 U.S. 1027 (1976); *Carterfone*, 13 F.C.C.2d at 420.

51. *Rogers Radio Communications Servs., Inc.*, 751 F.2d at 415-16 (applying *Carterfone*, 13 F.C.C.2d at 420). In *Hush-a-Phone Corp. v. United States*, 238 F.2d 266 (D.C. Cir. 1956), the D.C. Circuit invalidated an FCC order approving a tariff ban on a consumer device that could be attached to the telephone to enhance privacy in speaking. *Id.* at 269. In *Carterfone*, the commission invalidated a tariff that prohibited the connection of any device to the telephone system not shown to have a deleterious effect on the system. *Carterfone*, 13 F.C.C.2d at 423. The *Carterfone* device enabled radio communications to be connected to telephone calls.

52. *Rogers Radio Communication Servs.*, 751 F.2d at 416.

53. 47 U.S.C. § 222(c)(1)(A)(i) (1988); 47 U.S.C. § 222(c)(1)(B)(ii-iii) (1988).

54. 47 U.S.C. § 222(c)(1)(B) (1988); *RCA Global Communications, Inc. v. FCC*, 758 F.2d 722, 725-26 (D.C. Cir. 1985) (allowing FCC order that permitted small carrier to offer discounts for customers who used its services without connecting to large carrier; reviewing interconnection requirements under the Communications Act).

55. 114 S. Ct. 2223, 2226-27, 2232-33 (1994).

Another more recent interconnection controversy arose over access by nonwire line paging services to local access telephone carriers.⁵⁶ The telephone companies involved in this controversy were concerned that interconnections would be noncompensatory because of short holding times for beeper calls.⁵⁷

The effect of the interconnection decisions is threefold. First, the decisions do not recognize a general common law obligation to allow competing services to interconnect. Second, however, the holdings impose a burden under section 201 on common carriers to justify their interconnection refusals. Finally, the courts may recognize legitimate justifications for refusal to interconnect based either on technical harm or noncompensatory rates, in light of the potential high costs of certain interconnections.

In the background is the idea that interconnection obligations are easier to rationalize for dominant carriers than for nondominant ones, at least when Congress articulates deferential treatment for nondominant carriers.⁵⁸ Combined with the recent case law invalidating on-premises interconnection requirements,⁵⁹ it may be that interconnection requirements can be justified constitutionally only on a threshold showing of the existence of monopoly control over a network facility and the absence of acceptable alternatives.

2. *Modification of the common carrier category*

By the early 1970s, it had become evident that the administrative apparatus erected to apply common carrier requirements was imposing unacceptable costs on the evolution of the communications infrastructure.⁶⁰ Accordingly, the FCC began to modify its interpretation of the common carrier category, narrowing it to allow more services to be offered free of the restraints imposed by common carrier obligations.⁶¹ The FCC also exempted certain nondominant common carriers from most of the detailed tariff requirements.⁶² When the FCC decided to allow competi-

56. Most local telephone rates are premised on average call length, and changes and uses can change call length. A typical call to actuate a beeper is much shorter than a typical call for voice conversation. *See generally Rogers Radio Communications Servs.*, 751 F.2d at 411 (explaining basis for claim of noncompensatory character of pager service connections); William J. Baumol & J. Gregory Sidak, *The Pricing of Inputs Sold to Competitors*, 11 YALE J. ON REG. 171, 189-201 (1994) (offering analysis of pricing alternatives to access to components of networks).

57. *Rogers Radio Communication Servs.*, 751 F.2d at 411.

58. *See MCI Communications Corp. v. AT&T*, 708 F.2d 1081, 1108 (7th Cir.) (exploring ramifications of dominant carrier status; finding that presumption of monopolistic intent arising out of acquisition of monopoly power is inappropriate in context of heavily regulated common carrier), *cert. denied*, 464 U.S. 891 (1983).

59. For a discussion of this case law, see *infra* note 197 and accompanying text.

60. *Illinois Bell Tel. Co. v. FCC*, 883 F.2d 104, 105-06 (D.C. Cir. 1989) (reviewing deregulation of consumer premises equipment and enhanced services, retaining common carrier regulation only for basic transmission service).

61. *Perritt, Tort Liability*, *supra* note 6, at 86-90.

62. *Id.*

tion in the specialized common carrier market, it did so in large part by requiring the telephone companies to allow entities such as MCI and Southern Pacific Communications to interconnect.⁶³

However, in *AT&T v. FCC*,⁶⁴ the District of Columbia Circuit held that the FCC's order exempting nondominant interexchange carriers such as MCI from tariff requirements violated the Communications Act.⁶⁵ Once common carrier status was found to exist, the court held, the FCC lacked discretion to tailor the requirements of Title II.⁶⁶ The basic holding of this case eventually was affirmed by the Supreme Court in *MCI Telecommunications Corp. v. AT&T*.⁶⁷ The effect of this precedent is to limit the FCC's flexibility to adapt the existing Title II common carrier obligations to the particular needs of a digital information infrastructure like the NII. Once common carrier status is found to exist, the traditional statutory requirements may rigidly apply.

B. Narrowed Statutory Duty

The combination of dissatisfaction with the traditional common carrier requirements and a continued perception that access entitlements are necessary in some parts of the information infrastructure has led Congress to impose more specialized access requirements, most notably in cable television regulation. The Cable Communications Policy Act of 1994, as subsequently amended,⁶⁸ obligates cable television operators to provide access to public, educational, and governmental programming,⁶⁹ and to unaffiliated commercial programming.⁷⁰ In addition, cable operators must carry local television station programming.⁷¹ However, these entitlements were called into question in *Turner Broadcasting Systems, Inc. v. FCC*,⁷² decided by the Supreme Court in 1994.

63. *Southern Pac. Communications Co. v. AT&T*, 740 F.2d 980, 985-86 (D.C. Cir. 1984) (reviewing history of specialized common carriage policy), *cert. denied*, 470 U.S. 1005 (1985).

64. 978 F.2d 727 (D.C. Cir. 1992) (finding FCC's dismissal of AT&T's complaint arbitrary and capricious), *cert. denied sub. nom. MCI Telecommunications Corp. v. AT&T*, 113 S. Ct. 3020 (1993).

65. *Id.* at 732.

66. *Id.*

67. *MCI Telecommunications Corp. v. AT&T*, 114 S. Ct. 2223 (1994) (finding that FCC's authority to modify common carrier requirements under 47 U.S.C. § 203 does not authorize FCC to relieve nondominant telephone carriers of obligation to file tariffs).

68. 47 U.S.C. §§ 521-559 (1988 & Supp. IV).

69. 47 U.S.C. § 531 (1988) (giving franchise authority to establish requirements for public educational or governmental use).

70. 47 U.S.C. § 532 (1988 & Supp. IV) (mandating that cable operators designate channel capacity for unaffiliated commercial programming).

71. 47 U.S.C. § 534 (1988 & Supp. IV) (requiring operators to carry local broadcasts). See *Adell Broadcasting Corp. v. Cablevision Indus.*, 854 F. Supp. 1280, 1290 (E.D. Mich. 1994) (finding no private right of action to enforce local station must-carry duty under 47 U.S.C. § 534).

72. 114 S. Ct. 2445 (1994). For a complete discussion of the First Amendment issues raised by *Turner Broadcasting*, see *infra* notes 240-42 and accompanying text.

More recently, during the congressional debate over new communications legislation, some authorities have begun to view with sympathy proposals for open platform obligations which would essentially require interoperability.

C. Common Law Common Carrier

Statutory common carrier obligations are derived, with little change, from common law common carrier obligations.⁷³ At common law, someone engaged in a public calling, like an innkeeper or a ferry operator, was treated as a common carrier.⁷⁴ The early cases are somewhat confused in their specification of the determinants of common carrier status, but it seems evident that monopoly power, "holding out" (a promise, in essence, to serve all comers), and public interest in having the service performed affordably and fairly were the three important determinants.⁷⁵

Once a business was classified as a common carrier, the original obligation imposed by law was one of nondiscrimination.⁷⁶ Any refusal to serve had to be justified by a legitimate economic interest.⁷⁷ Gradually, as alleged discrimination took the form of unreasonable charges, courts applying common carrier duties began to scrutinize pricing.⁷⁸ But the common law duty not to discriminate apparently extended only to end users, and did not include a requirement to provide interconnections with competitors.⁷⁹

The development of common law common carriage doctrine was arrested by the enactment of the Interstate Commerce Act in 1889,⁸⁰ the Federal Communications Act in 1934,⁸¹ and similar state statutes. These statutes largely preempted the operation of common law with respect to common carriers. Now, however, with deregulation and retraction of the scope of statutory common carriage, there may be a renewed opportunity for the development of common law concepts, although cases addressing this topic have not yet arisen.

73. For a discussion of statutory common carrier obligations, see *supra* notes 31-38 and accompanying text.

74. See generally Perritt, *Tort Liability*, *supra* note 6, at 77-84 (discussing common carrier doctrine).

75. *Id.*

76. *Pacific Tel. & Telegraph Co. v. Anderson*, 196 F. 699, 703 (W.D. Wash. 1912).

77. *Id.*

78. *Id.* at 74. Cf. *Rogers Radio Communications Servs.*, 751 F.2d at 408 (involving complaint by nonwire line paging services company that interconnections offered by phone company failed to meet statutory requirements because of pricing).

79. *Cox & Byrnes*, *supra* note 46, at 42 n.132. See also *Oklahoma-Arkansas Tel. Co. v. Southwestern Bell Tel. Co.*, 45 F.2d 995, 997 (8th Cir. 1930), *cert. denied*, 283 U.S. 822 (1931).

80. 47 U.S.C. § 201(a) (recodified as amended at 49 U.S.C. § 10761 (1994)).

81. Federal Communications Act of 1934, 47 U.S.C. § 203 (recodified as amended at 42 U.S.C. § 203 (1994)).

D. Contract

Contract rights to access may be based on representations made by the service provider to induce people to become customers or may be based on representations and conduct once a provider-customer relationship has been established. Implied contract doctrine, more than any statutory or other common law theory, appeared to undergird the recent claims of an Arizona law firm that it should not be disconnected from the Internet after it flooded Internet newsgroups with advertisements in 1994.⁸² The implied contract theory has a major advantage for persons claiming access rights, in that it does not require them to make any showing of the absence of alternative sources of supply.⁸³ Implied contract also offers certain advantages to the entity denying access, in that such an entity may negate potential contract claims with appropriate disclaimer language.

There are several branches of contract law that are important in the context of information infrastructure access rights. First, the relationship between the service provider and users of the network must be evaluated as a bargained-for exchange.⁸⁴ In the usual situation, a service provider unilaterally announces its terms, probably without knowing the identities of the people who may use the network and certainly without any of the give-and-take that most people associate with bargaining. Persons desiring access to the service simply use the network after learning of the service terms. Such use may be viewed as an acceptance of the offer represented by the published terms of service. Alternatively, the consumer's use of the service may be deemed the offer itself, responding to a solicitation of offers represented by the publication of terms. Then the provider's acceptance of the offer must be identified.

A second applicable theory, an alternative to bargained-for exchange, is promissory estoppel. Under section 90 of the Restatement (Second) of Contracts,⁸⁵ the person making a promise may be bound to perform that promise if someone else reasonably relies on that promise to his detriment, and it was reasonable for the promisor to anticipate reliance under the circumstances.⁸⁶ The detrimental reliance element might or might not be present in the typical network transaction. Yet, it is conceivable that in some situations, passing up other network subscription opportunities or going to the trouble to arrange telecommunication scripts and to distribute information about e-mail addresses on the basis of representations made by a particular provider may constitute reliance.

The bargain theory is potentially limited by advertising cases. Terms

82. Peter H. Lewis, *An Ad (Gasp!) in Cyberspace*, N.Y. TIMES, Apr. 19, 1994, at D1.

83. See 1 CORBIN ON CONTRACTS § 1.19 (rev. ed. 1993) (discussing the general requirements of implied contracts); see also *Skelly v. Bristol Sav. Bank*, 26 A. 474 (Conn. 1893) (allowing acts and conduct to imply the existence of a contract).

84. A bargained-for exchange is a traditional express contract. See RESTATEMENT (SECOND) OF CONTRACTS § 71(2) (1979).

85. *Id.* § 90 (1979).

86. See *id.*

of access communicated to the general public resemble advertisements, and advertisements have not generally been considered to make the publishers thereof liable for lack of compliance with their terms.⁸⁷ Statements in advertisements traditionally were construed as solicitations of offers rather than offers themselves.⁸⁸ Thus, a refusal to sell on the terms communicated in the advertisement did not breach a contract; it merely was a rejection of the buyer's offer to make a contract.⁸⁹ However, this general rule was not applied when an advertisement manifested a clear intent to make a promise. For example, a statement of definite price, accompanied by the phrase "first come, first served," may amount to an offer.⁹⁰ The most famous case in this area is *Carlill v. Carbolic Smoke Ball Co.*,⁹¹ in which an advertiser promised to pay a 100 £ reward to anyone who contracted a cold after using the advertised smoke ball.⁹² Evidencing the promissory intent, the advertisement also stated that the advertiser had deposited 100 £s with a bank as, in effect, an escrow agent.⁹³ The court found that the nature of the communication evidenced an intent to make an offer notwithstanding the risk of attracting a large number of offerees.⁹⁴

The Restatement of Contracts harmonizes this caselaw by establishing a presumption that advertisements are ordinarily intended as mere solicitations of offers rather than as offers. However, the Restatement acknowledges, first, that one may make an offer through an advertisement,⁹⁵ and second, that an advertisement that is not an offer nevertheless may contain promises or representations that become part of the eventual contract.⁹⁶ In the network access context, the advertisement cases could be applied to allow the network services provider to refuse any particular request for service, but bind the provider to deliver service according to its published terms once a request for service is accepted.⁹⁷

87. See JOHN E. MURRAY, MURRAY ON CONTRACTS § 34 (3d ed. 1990).

88. *Id.*; see *Foremost Pro Color, Inc. v. Eastman Kodak Co.*, 703 F.2d 534, 539 (9th Cir. 1983), *cert. denied*, 465 U.S. 1038 (1984).

89. Acceptance of a buyer's payment for the advertised product is acceptance of the buyer's offer. See *Steinberg v. Chicago Medical Sch.*, 371 N.E.2d 634 (Ill. 1977). The *Steinberg* court found that a cause of action existed for breach of contract when an applicant to medical school submitted an application in response to an invitation expressed in the medical school catalogue, but the medical school failed to evaluate the application according to the criteria set forth in the catalogue. *Id.* at 638. The *Steinberg* court concluded that the submission of the application and the payment of the fee was an offer to apply, which was accepted by receipt of the application and acceptance of the fee. *Id.* at 639.

90. MURRAY, *supra* note 87, § 34 (citing *Lefkowitz v. Great Minneapolis Surplus Store*, 86 N.W.2d 689, 690 (Minn. 1957)).

91. 1 Q.B. 256 (Eng. C.A. 1893); see MURRAY, *supra* note 87, § 34 (discussing applicable cases).

92. *Carbolic Smoke Ball*, 1 Q.B. at 257.

93. *Id.*

94. *Id.* at 261-63.

95. RESTATEMENT (SECOND) OF CONTRACTS § 26 cmt. b (1979).

96. *Id.* § 26 cmts. b, f.

97. A number of commentators have offered doctrinal frameworks for understanding contracting in the situation where one party unilaterally prescribes detailed terms and the

Further, terms of access published by a network services provider also are not unlike the terms published by the issuer of a credit card. Such terms are intended to reach a very large number of people, who will subsequently enter into discrete transactions, presumably relying on the published terms. The prevailing view is that credit card terms do not give rise to enforceable obligations to allow access to the credit represented by the card.⁹⁸ Rather, the terms are revocable offers which are accepted each time the card holder uses the card.⁹⁹ "The credit card relationship, properly analyzed, should be viewed as an offer by the issuer to create the opportunity for a series of unilateral contracts which are actually formed when the holder uses the credit card to buy goods or services or to obtain cash."¹⁰⁰

If applied strictly to the network access context, the credit card cases would permit the service provider to change the terms of the contract virtually continuously. Each request for service would be a revocable offer for a new contract. If the network provided service on that occasion, a contract would be formed only for the duration of that particular transaction on the network. Because no lasting contract would be in existence, the service provider would remain free to disconnect service at almost any time, so long as the disconnection occurred between the end of one transaction and the commencement of the next.

Both the advertising and credit card cases, if applied in the network access context, would leave the service provider free to deny service until a particular request for service was accepted. To understand the implications of this approach, it is crucial to understand what constitutes a "re-

other party accepts a relationship under those terms without any attempt to bargain, and frequently without any knowledge of the terms. One of the best is W. David Slawson, *Standard Form Contracts and Democratic Control of Lawmaking Power*, 84 HARV. L. REV. 529, 531 (1971). See also Todd D. Rakoff, *Contracts of Adhesion: An Essay in Reconstruction*, 96 HARV. L. REV. 1173, 1210-11 (1983) (characterizing Slawson's view as treating all contracting as lawmaking, and proposing a judicial role similar to that found in judicial review of administrative agency decisions). But see W. David Slawson, *The New Meaning of Contract: The Transformation of Contracts Law by Standard Forms*, 46 U. PITT. L. REV. 21, 41 (1984) (backing away from administrative agency and judicial review models of 1971 article; key concept from earlier articles that retains vitality is that terms of standard form contracts should be enforced only to extent that they are consistent with broadly defined party expectations).

98. See, e.g., *Manufacturer's Hanover Trust Co. v. Ward* (*In re Ward*), 857 F.2d 1082, 1087 (6th Cir. 1988) (Merritt, J., dissenting) (arguing that "unilateral contracts are formed each time the card is used"); *Garber v. Harris Trust & Savings Bank*, 432 N.E.2d 1309, 1312 (Ill. App. Ct. 1982) (stating that "prevailing view in this country is that the issuance of credit card is only an offer to extend credit"). But see *Gray v. American Express Co.* 743 F.2d 10 (D.C. Cir. 1984) (finding cardholder whose card was cancelled by refusing to authorize a particular charge entitled to statutory procedures; criticizing view that cardholder has no contract rights). See generally Perritt, *Dispute Resolution*, *supra* note 11, at 376-81.

99. *Feder v. Fortunoff, Inc.*, 494 N.Y.S.2d 42 (App. Div. 1985) (affirming dismissal of complaint). "The issuance of a credit card constitutes an offer of credit which may be withdrawn by the offeror at any time prior to acceptance of the offer through the use of the card by the holder." *Id.* (citation omitted).

100. *In re Ward*, 857 F.2d at 1087 (Merritt, J., dissenting).

quest for service" in the NII context. If each connection request in the TCP protocol constitutes a separate request for service, the obligations of the network service provider would remain in effect only until it delivered a particular file or menu item or pointer in response to a World Wide Web or Gopher query, or until the termination of a particular FTP or Telnet session.¹⁰¹ This characterization of "request for service" would impose little obligation on the service provider and would confer on the requester legal rights of minimal practical utility.¹⁰²

A somewhat greater range of obligations and entitlements would result from characterizing a request for service as a request to use a system for a particular billing period, assuming that billing takes place on approximately a monthly cycle. But even if the thirty days of rights or obligations are of practical significance, it is not likely that the NII will function effectively on thirty-day billing cycles. It would be much more advantageous for billing cycles to be shorter, considering the granularity of billing, and for billing thus to occur as it does between long-distance service providers and individual telephone subscribers—on a per-call basis, albeit aggregated through the monthly billing by local telephone service provider to subscriber.

In general, the implied contract theory provides flexibility for market-based definitions of infrastructure. Even when the classical metaphor of two equal parties sitting across a table and explicitly bargaining about their contract terms is unhelpful because of its remoteness from reality, the freedom afforded both offeror and offeree in the context where the offeror unilaterally specifies in some detail its terms of service and reserves powers to amend or terminate is considerable and makes the implied contract theory attractive. The offeree knows exactly what she is getting into before making an economic commitment. Both bargain theory and promissory estoppel theory give the offeror the power to limit his liability. An offeror can specify how acceptance is to be made,¹⁰³ and may define not only the duration of any contract to be formed by acceptance,¹⁰⁴ but also how long the offer will remain in effect.¹⁰⁵ Promissory estoppel theory creates enforceable promises only when detrimental reliance is reasonable.¹⁰⁶ Thus, to limit liability exposure, the offeror may circumscribe the range of reasonableness and reliance by adjusting the content of his statements.

Nevertheless, these theoretical advantages of implied contract doc-

101. See generally Perritt, *Dispute Resolution*, *supra* note 11, at 384-88 (discussing Internet technology); Perritt, *Tort Liability*, *supra* note 6, at 144-46 (giving a brief technological discussion of TCP and other protocols and of service provider responses).

102. This interpretation of "request for service" would create a short-term obligation on the service provider similar to the obligation of a creditor to a credit card holder, which only arises during the credit transaction. For a discussion of a creditor's contractual obligations to a credit card holder, see *supra* notes 98-100 and accompanying text.

103. RESTATEMENT (SECOND) OF CONTRACTS § 30 (1979).

104. *Id.* § 5.

105. *Id.* § 35(2).

106. *Id.* § 90 cmt. b.

trine do not make it preferable to the other legal doctrines unless contracts really would be enforceable under the circumstances likely to exist in the market for infrastructure services. If the line of cases negating contractual entitlements for credit card subscribers¹⁰⁷ is used to make commitments by network services providers similarly unenforceable, then contract theory becomes irrelevant as a policy matter, necessitating greater reliance on other theories.

Before moving beyond contract theory, it is useful to make certain further observations. The availability of competitive alternatives to a particular facility or service enters into contract analysis by affecting detrimental reliance. If there are many alternatives to a particular provider's service, and the costs of switching are trivial, then someone who intends to use the service in reliance on the provider's statement of terms has suffered little in the way of detrimental reliance if service on those terms is denied. On the other hand, if there are few alternatives or if switching costs are high, the cost of disappointed expectations is greater, increasing the likelihood of enforcement of the promise on a detrimental reliance basis, and increasing the likelihood of damages under the bargain theory.

Contract doctrine may be attractive to suppliers of network services because it gives them greater power to define and limit their liability. By the same token, contract theory may be unattractive to consumers of network services if they lack the power to bargain for terms that protect them. Lack of power may come from disparate size or wealth, or it may derive from the transaction costs of bargaining. If a consumer of network services only desires one second of access to a World Wide Web server, the cost of off-line haggling over contract terms is too high to be borne. On the other hand, if transaction costs of bargaining can be managed, then contract theory can be an attractive regime for consumers of network services because it gives them the power to decide what bargain best meets their needs. The adverse effects of high transaction costs, like disparate bargaining power, can be mitigated by collective action. Groups of consumers of network services and suppliers of network services can negotiate standard terms of service, and then those terms can be incorporated by reference into small transactions. Antitrust concerns may limit collective actions, however.

The distributed nature of the NII weakens the distinction between suppliers and consumers of network services, since everyone may be both a supplier and a consumer at various times.¹⁰⁸ Thus any ideological preference for supplier interests or consumer interests tends to become irrelevant. The NII era may not be one dominated by a consumerism verses business struggle; rather, it may be one in which efficient commerce coincides with consumer welfare.

Alternatively, the effects of high transaction costs and disparate bargaining power could be mitigated by the legislative process, resulting in a

107. See Perritt, *Dispute Resolution*, *supra* note 11, at 376-81.

108. RESTATEMENT (SECOND) OF CONTRACTS § 5 (1979).

statute extending the binding effect of published terms of service. This is essentially what has been done with respect to credit cards.¹⁰⁹ In the network access context, a statute could require network service providers to post their terms of service on a publicly accessible database.

It is worth noting that the concept of a publicly accessible database of network service terms, backed up by enforceability of the terms as contracts, shares certain key features with the traditional idea of common-carrier tariffs.¹¹⁰ The published terms are extended to anyone in the targeted market, thus discouraging discrimination among similarly situated competitors. Additionally, the published terms crystallize the terms of the contract. Tariff terms are enforceable, but other arguable contract terms not contained in the tariff are unenforceable.¹¹¹ In summary, there are six prerequisites to a meaningful contract regime in the NII context. First, it must be clear which representations constitute enforceable promises and which ones are mere nonpromissory representations of fact. Second, the promissory representations must be treated as such and not treated as mere invitations to make offers. Third, the statute of frauds must not prevent enforcement of contracts made by conduct after publication of the contract terms. Fourth, publication of contract terms should suffice without the offeree having to prove subjective knowledge and detrimental reliance. Fifth, and perhaps most challenging, disclaimers of enforceability and reservations of power to amend or terminate access must be circumscribed so they do not swallow up the affirmative theories of contract enforcement. Finally, the effect of competitive alternatives should be defined.

E. Antitrust

Under current interpretations of antitrust doctrine,¹¹² the probability of antitrust liability for NII providers is low because all of the established and reasonably anticipated markets for infrastructure services are competitive and have low barriers to entry. Nevertheless, certain joint arrangements for packet routing and directory services, as well as tying

109. See Consumer Credit Protection Act of 1968 § 127, 15 U.S.C. § 1637 (1988).

110. For a discussion of common-carrier tariffs, see *supra* part IV.A of this article.

111. See, e.g., *Maislin Indus., Inc. v. Primary Steel, Inc.*, 497 U.S. 116, 130-31 (1990) (holding that a carrier's right to collect the filed rate cannot be abrogated by contract); *Overland Express, Inc. v. Interstate Commerce Comm'n*, 996 F.2d 356, 358 (D.C. Cir. 1993) (following *Maislin*), *vacated on other grounds*, 114 S. Ct. 2095 (1994); *MCI Telecommunications Corp. v. Ameri-Tel, Inc.*, 852 F. Supp. 659, 664 (N.D. Ill. 1994) (finding that "agreements contrary to the filed tariff will not absolve the customer from paying the filed rate") (citing *Maislin*). But see *US Wats, Inc. v. AT&T*, No. Civ. A. 93-1038, 1994 WL 116009, at *10-12 (E.D. Pa. Apr. 5, 1994) (finding filed tariff doctrine is not so broad as to preclude all contractual agreements).

112. Antitrust cases conceptually involve anticompetitive contracts, which violate § 1 of the Sherman Act, and monopolization claims, which violate § 2. See generally *Southern Pac. Communications Co. v. AT&T*, 740 F.2d 980 (D.C. Cir. 1984) (providing a useful review of the analytical tools for monopolization claims under § 2 of the Sherman Act and in the communications context), *cert. denied*, 470 U.S. 1005 (1985).

arrangements bundling different network and information services, may invite close antitrust scrutiny. Additionally, the analytical framework for all of the relevant antitrust doctrines involves a scrutiny of market structures similar to that which enters into any serious analysis of common carrier status or policy-based rationales for imposing new access obligations.¹¹³

1. *Joint ventures*

A joint venture has been defined for antitrust purposes as including the following attributes: (1) the enterprise is under the joint control of the parent firms, which themselves are not under related control; (2) each parent makes substantial contribution to the joint enterprise; (3) the enterprise exists as a business entity separate from its parents; and (4) the joint venture creates significant new enterprise capability in terms of new productive capacity, new technology, a new product, or entry into a new market.¹¹⁴

Joint ventures are essentially partnerships to accomplish a particular task or project. In the NII context, joint ventures could be useful structures for providing certain common services, for example, routers to exchange traffic among network service providers.¹¹⁵ Joint ventures potentially violate the antitrust laws in that they produce goods or ser-

113. See, e.g., *Copperweld Corp. v. Independence Tube Corp.*, 467 U.S. 752, 768 (1984) (noting that the competitive status of a business combination is assessed by analyzing market structure).

114. *Instructional Sys. Dev. Corp. v. Aetna Casualty & Sur. Co.*, 817 F.2d 639, 643 n.2 (10th Cir. 1987) (quoting Joseph F. Brodley, *Joint Ventures and Antitrust Policy*, 95 HARV. L. REV. 1521, 1526 (1982) in finding criteria not satisfied by agreement in driver simulator market).

115. In fact, the NSF strategy for reducing federal subsidy of the Internet contemplates a number of "network access points," that might be jointly operated routers. See Notice, Fed. Reg. 26,692 (1992) (requesting comment on new Internet approach). The administrative notice states in part:

Network access points. A NAP is defined as a high speed network or switch to which a number of routers can be connected for the purpose of traffic exchange and interoperation. It must have capacity adequate to keep up with the switching requirements of the attached networks. A NAP Manager/RA Organization will be responsible for oversight and coordination of the NAPs. The NAPs will be a conceptual evolution of the Federal Information eXchanges (FIX-East and FIX-West) and the Commercial Information eXchange (CIX). The FIXes are each built around a 100 mbps FDDI ring with attached networks operating at speeds of up to 45 megabits per second (but neither the FIXes nor the CIX currently have dedicated route servers with route databases).

....

By the use of specified external gateway protocols such as BGP and IDRP (Boarder Gateway Protocol and Inter-Domain Routing Protocol), the NAP Manager/RA will create a database of all announced networks and their paths of accessibility. This information will be maintained in route databases which will be deployed at each NAP. Attached networks will be able to utilize this information while creating and modifying their own routing tables.

Id. at 26,692-93.

vices that otherwise would be produced by individual partners in competition with each other. Joint ventures thus amount to agreements to restrict output, because they implicitly involve each partner withholding its own unilateral efforts to produce the good or service that is to be produced by the joint venture. Joint ventures are evaluated under the rule of reason.¹¹⁶ When the joint venture partners sell mostly in exclusive geographic territories, the likelihood of the joint venture violating the antitrust laws is much lower because any negative effect on output is reduced.¹¹⁷ Generally, joint ventures whose procompetitive effects outweigh their anticompetitive effects are permissible under section 1 of the Sherman Act.¹¹⁸ Thus, *Broadcast Music, Inc. v. CBS*¹¹⁹ approved a copyright collective that used standard license forms for copyrighted music even though the license included a standard fee.¹²⁰

On September 15, 1993, the Justice Department issued an enforcement policy statement for joint ventures in the health care industry.¹²¹ The policy statement provides for "antitrust safety zones" which immunize certain types of joint ventures.¹²² Ventures involving high technology or other expensive equipment, the cost of which must be shared, would not be challenged.¹²³ The policy statement thus would protect arrangements such as joint ventures among rural hospitals to share MRIs or agreements among community hospitals jointly to operate helicopter services.¹²⁴ The Justice Department's statement further suggested a four-step rule of reason analysis for joint ventures: (1) define the relevant market; (2) evaluate the competitive effects, particularly focusing on the possibility that the joint venture would eliminate an existing or potentially

116. *Sewell Plastics, Inc. v. Coca-Cola Co.*, 720 F. Supp. 1186, 1192 (W.D.N.C. 1988) (holding that joint venture to manufacture containers to be evaluated under rule of reason). See also *Northwest Wholesale Stationers, Inc. v. Pacific Stationary & Printing Co.*, 472 U.S. 284, 289 (1985) (finding under rule of reason analysis that procedural protections for enterprise expelled from purchasing cooperative not mandated by § 1 of Sherman Act); See also *Brodley*, *supra* note 114, at 1535-36 (discussing application of rule of reason standard to joint ventures).

117. *Sewell Plastics*, 720 F. Supp. at 1192.

118. *Id.* at 1194; see *Broadcast Music Inc. v. CBS*, 441 U.S. 1, 23 (noting that "joint ventures and other cooperative arrangements are also not usually unlawful, at least not as price-fixing schemes, where the agreement on price is necessary to market the product at all"). Since agreements to restrict output are no more harmful to competition than agreements on price, the Supreme Court's conclusion applies equally to joint ventures that have the effect of restricting output. See also *Consolidated Metal Prods., Inc. v. American Petroleum Inst.*, 846 F.2d 284, 292-97 (5th Cir. 1988) (affirming summary judgment for trade association that evaluated products and issued opinions, and finding no anticompetitive conduct under rule of reason).

119. 441 U.S. 1 (1979).

120. *Broadcast Music, Inc.*, 441 U.S. at 23.

121. U.S. DEP'T OF JUST. & FEDERAL TRADE COMM'N, STATEMENTS OF ANTITRUST ENFORCEMENT POLICY IN THE HEALTH CARE AREA (Sept. 15, 1993), reprinted in 4 Trade Reg. Rep. (CCH) ¶ 13,150, at 20,755-67.

122. *Id.* at 20,757-59.

123. *Id.* at 20,758-60.

124. *Id.*

viable competing provider of the service; (3) evaluate the potential procompetitive efficiencies of the venture; and (4) evaluate ancillary agreements or conditions that might unreasonably restrict competition and would be unlikely to contribute significantly to the legitimate purposes of the joint venture.¹²⁵ While the policy statement focuses on health care joint ventures, its analytical approach may also be applicable to joint ventures in the NII.

A recent law review article supplements the Justice Department framework for evaluating joint ventures, specifically noting the trend toward joint ventures in the telecommunications industry.¹²⁶ The author suggests beginning with an assessment of the restriction on competition, acknowledging that "[a]n inevitable competitive loss occurs when parties who are rivals in a particular area suspend that rivalry in order to cooperate with each other."¹²⁷ The next step would be to evaluate efficiencies generated by the joint venture,¹²⁸ including reduction of risk,¹²⁹ economies of scale,¹³⁰ elimination of wasteful redundancies,¹³¹ access to complementary resources,¹³² and making unique products available to consumers.¹³³ The article further proposes evaluating joint ventures along a continuum reflecting the degree to which the parties have combined their resources, scrutinizing highly integrated joint ventures more rigorously than unintegrated arrangements.¹³⁴

2. Vertical exclusive arrangements

In the paradigmatic vertical relationship, A supplies communications services and B supplies value-added features, such as finding and retrieval aids. A and B make a contract, giving B the exclusive right to supply a particular market. Competitors of B get excluded from the downstream market for A's product, and competitors of A get excluded from B's downstream services. Courts analyze vertical exclusive arrangements more sympathetically under section 1 of the Sherman Act than they do horizontal exclusive arrangements.¹³⁵ This is because vertical ar-

125. *Id.* at 20,765.

126. Thomas A. Piraino, Jr., *Reconciling Competition and Cooperation: A New Antitrust Standard for Joint Ventures*, 35 WM. & MARY L. REV. 871, 873 (1994).

127. *Id.* at 880.

128. *Id.* at 883-84.

129. *Id.* at 885-86.

130. *Id.* at 886.

131. *Id.* at 886-87.

132. *Id.* at 887-89.

133. *Id.* at 889.

134. The author notes that "[u]nintegrated joint ventures are organized in simple ways that make their competitive effects obvious," while more integrated arrangements require more detailed balancing. *Id.* at 896-97. Moreover, integrated joint ventures are more likely to have procompetitive effects outweighing anticompetitive effects. *Id.* at 921. Conversely, unintegrated joint ventures are more likely to be naked anticompetitive agreements with no redeeming qualities. *Id.* at 922.

135. See, e.g., *Futurevision Cable Sys. v. MultiVision Cable TV Corp.*, 789 F. Supp. 760, 766 (S.D. Miss. 1992) (per se rule usually applied to horizontal agreements, while rule

rangements frequently strengthen interbrand competition, (competition between A and its competitors) even though they may limit intrabrand competition (competition between B and its competitors for distribution of A's product).¹³⁶ For example, an exclusive arrangement between a legal database provider and an Internet access provider in a particular geographic area might strengthen the ability of both partners to compete against other Internet access providers and other database providers. However, the arrangement would reduce potential intrabrand competition that would occur if multiple Internet access providers competed with each other for customers desiring access to the database.

*Futurevision Cable Systems of Wiggins, Inc. v. Multivision Cable TV Corp.*¹³⁷ involved an unsuccessful claim by a new entrant cable network that exclusive contracts between ESPN, The Learning Channel, and existing cable networks violated section 1 of the Sherman Act. The federal district court concluded that the plaintiff failed to show market power on the part of ESPN or The Learning Channel.¹³⁸ The plaintiff was unable to demonstrate that the exclusive arrangement prevented it from entering the market and competing vigorously with other sources of programming.¹³⁹ This case is interesting because it involved exclusive arrangements between content providers (ESPN and The Learning Channel) and a network services provider (the existing cable channels) in which the existence of alternatives (other sources of programming service) nullified an antitrust claim brought by a new entrant in one part of the market. The fact pattern is roughly equivalent to that of a new network services provider challenging exclusive arrangements between content providers and existing network services providers in the Internet context.

3. Tying arrangements

Tying occurs when a seller bundles components of a system and refuses to sell them separately. An information services provider might bundle content with tools for indexing, searching, and retrieval, such as World Wide Web, and then refuse access to the content unless one also buys access to the provider's Web server.

The essential characteristic of an invalid tying arrangement lies in the seller's exploitation of its control over the tying product [the content] to force the buyer into the purchase of a tied product [the Web server] that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms. When such "forcing" is present, competition on the merits in the market for the tied item is restrained and the Sherman Act is violated.¹⁴⁰

of reason usually applied to vertical arrangements), *aff'd*, 986 F.2d 1418 (5th Cir. 1993).

136. *Id.* at 767-68.

137. 789 F. Supp. 760 (S.D. Miss. 1992), *aff'd*, 986 F.2d 1418 (5th Cir. 1993).

138. *Id.* at 769.

139. *Id.* at 769-70.

140. *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 112 S. Ct. 2072, at 2080-81 n.9 (1992) (quoting *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 12 (1984)).

In *Eastman Kodak Co. v. Image Technical Services, Inc.*,¹⁴¹ the Supreme Court analyzed the impact of antitrust tying doctrine on product bundles. The Court rejected two proposed limitations on defining the relevant market which would have made it harder to find an illegal tying arrangement. First, the Court rejected the argument that functionally linked products, one of which is useless without the other, can never produce liability if used in a tying arrangement.¹⁴² Rather, the Court held that for two functionally linked products to be considered two distinct products for purposes of tying liability, "there must be sufficient consumer demand so that it is efficient for a firm to provide [them separately]."¹⁴³ On the facts, the *Eastman Kodak* Court found evidence that service and parts had been sold separately in the past and noted that the very fact that a service industry had developed, members of which had challenged Kodak, was itself evidence of the efficiency of a separate market for service.¹⁴⁴

In the digital network services area, an analogous example would consist of facts evidencing that it is efficient to sell content separate from Web service, or that it is efficient to produce Gopher and World Wide Web servers and sell access to them independently of Internet access. Also, an analogy would exist if facts showed that it is efficient to produce and sell chunking and tagging value separate from pointers value.¹⁴⁵

Second, the Supreme Court rejected Kodak's contention that, as a matter of law, a single brand of a product or service can never be a relevant market under the Sherman Act.¹⁴⁶ The Court stated:

The relevant market for antitrust purposes is determined by the choices available to Kodak equipment owners. Because service and parts for Kodak equipment are not interchangeable with other manufacturers' service and parts, the relevant market from the Kodak equipment owner's perspective is composed of only those companies that service Kodak machines.¹⁴⁷

Similarly, the market for PC Internet interface software for CompuServe could be a relevant market for purposes of NII antitrust analysis.

141. 112 S. Ct. 2072 (1992) (remanding as to whether manufacturer unlawfully tied sale of service to sale of parts for line of its micrographic equipment).

142. *Id.* at 2080.

143. *Id.*

144. *Id.*

145. See Perritt, *Unbundling Value*, *supra* note 5, at 419 (explaining ten types of value in electronically published products: content, chunking and tagging, internal pointers, external pointers, presentation, duplication, distribution, promotion, billing and collection, and integrity assurance). See generally *Illinois Bell Tel. Co. v. FCC*, 883 F.2d 104, 110-111 (D.C. Cir. 1989). In reviewing the rationale offered by the FCC for its order forcing telephone companies to market competing CPE along with their own, the court noted the difficulty in unbundling CPE from other parts of the communications package. *Id.* The service that the Bell companies were forced to provide in *Illinois Bell* involved giving promotion value. In effect the FCC was requiring that hardware be bundled with promotion value.

146. *Eastman Kodak Co.*, 112 S. Ct. at 2090.

147. *Id.*

Having thus defined the market, the *Eastman Kodak* Court proceeded to assess Kodak's behavior. The Court noted that while a firm can refuse to deal with its competitors, it must offer legitimate competitive reasons for the refusal, other than merely wishing to drive them from the marketplace.¹⁴⁸ The facts showed that Kodak declined to sell parts to its equipment customers unless they also bought its service or repaired their own equipment.¹⁴⁹ On the issue of Kodak's behavior, independent service organizations, as the plaintiffs in the antitrust action, argued that Kodak's restrictive repair parts policy hurt their business and violated the antitrust law.¹⁵⁰ In affirming the Ninth Circuit's refusal to affirm summary judgment for Kodak and in remanding the case for trial, the Court left the door open for the plaintiffs to prevail.¹⁵¹

The dissent, which would have reversed the Ninth Circuit's decision, characterized the majority opinion as giving the wrong answer to the question of

[w]hether, for purposes of applying the per se rule condemning tying arrangements, and for purposes of applying the exacting rules governing the behavior of would-be monopolists, a manufacturer's conceded lack of power in the interbrand market for its equipment is somehow consistent with its possession of "market," or even "monopoly," power in wholly derivative aftermarkets for that equipment.¹⁵²

Because of its final posture, remanding on a "sparse" record¹⁵³ for development of factual evidence on the crucial predicates, the *Eastman Kodak* opinion is in the end only an invitation to speculate about the role of antitrust tying doctrine in ensuring access to aspects of the NII. Nevertheless, the case identifies one theory for forcing a producer with substantial market power to unbundle: the producer's failure to justify continued bundling on cost or other grounds other than excluding competitors.¹⁵⁴

4. *Exclusive dealing*

An exclusive dealing arrangement¹⁵⁵ is potentially violative of the antitrust laws because it may reduce competition in either the upstream or downstream market.

148. *Id.* at 2091 n.32 (citing *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 602-05 (1985)).

149. *Id.* at 2078.

150. *Id.* at 2076-77.

151. *Id.* at 2092.

152. *Id.* (Scalia, J., dissenting).

153. *Id.*

154. *Id.* at 2091 n.32.

155. A tying arrangement or a refusal to unbundle is a form of exclusive dealing arrangement. The refusal to unbundle may be termed as an exclusive dealing arrangement with upstream and downstream production facilities in the same enterprise. A tying arrangement is similar, but with greater product differentiation between the components, resulting in an express condition in the contract of purchase or sale.

Exclusive dealing can have adverse economic consequences by allowing one supplier of goods or services unreasonably to deprive other suppliers of a market for their goods, or by allowing one buyer of goods unreasonably to deprive other buyers of a needed source of supply. In determining whether an exclusive-dealing contract is unreasonable, the proper focus is on the structure of the market for the product or services in question—the number of sellers and buyers in the market, the volume of their business, and the ease with which buyers and sellers can redirect their purchases or sales to others. Exclusive dealing is an unreasonable restraint on trade only when a significant fraction of buyers or sellers are frozen out of a market by the exclusive deal.¹⁵⁶

Exclusive dealing contracts can violate both section 3 of the Clayton Act¹⁵⁷ and section 1 of the Sherman Act.¹⁵⁸ “The legality of an exclusive dealing arrangement under the Clayton Act depends on whether the competition foreclosed constitutes a substantial share of the relevant market.”¹⁵⁹ The absolute percentage of potential market foreclosure is not the sole issue, however. One also must consider the probable effect of the contract on competition, taking into account the relative strength of the parties, the probable immediate and future effects which preemption of that share of the market might have on effective competition, and the existence of legitimate business justifications for the contracts.¹⁶⁰

For example, suppose Cerfnet, a midlevel network in the Internet, enters into an exclusive dealing arrangement with the Cleveland Freenet, which provides local Internet access services. This arrangement arguably would reduce competition in the local Internet access services market because no other provider of Internet access services would be able to deal with Cerfnet. It also could be said to reduce competition in the market for midlevel Internet services because no other midlevel network would be free to deal with Cleveland Freenet. But in order for such an arrangement to violate the antitrust laws, there would have to be a showing of (1) a reduction of competition, and (2) the absence of procompetitive justification.¹⁶¹ If the markets for both midlevel network services and network access services are competitive (they are), and if neither party to the exclusive dealing arrangement possesses significant market power (they do not), then the arrangement is permissible.¹⁶²

156. *Balaklaw v. Lovell*, 14 F.3d 793, 800 (2d Cir. 1994).

157. 15 U.S.C. § 14 (1988).

158. 15 U.S.C. § 1 (1988).

159. *Barr Labs., Inc. v. Abbott Labs.*, 978 F.2d 98, 110 (3d Cir. 1992) (affirming summary judgment for defendant drug company on several antitrust claims including exclusive dealing).

160. *Id.* at 111 (quoting *Tampa Elec. Co. v. Nashville Coal Co.*, 365 U.S. 320, 327-28 (1961)).

161. See generally Barbara Ann White, *Countervailing Power—Different Rules for Different Markets? Conduct and Context in Antitrust Law and Economics*, 41 DUKE L.J. 1045 (1992) (surveying influence of law and economics movement on antitrust jurisprudence, including how the courts have analyzed allegations of harm to competition and procompetitive justifications).

162. See *Balaklaw*, 14 F.3d at 798-99 (finding no antitrust injury because no change in

In addition, even if competition in either or both markets were reduced, the arrangement still might not lead to antitrust liability if it could be justified on the grounds of improving the market position of either Cerfnet or Cleveland Freenet, thus enhancing interbrand competition. The possibility of new entry, even when there are significant barriers to entry, also reduces the likelihood of a successful claim on a theory in which market power is an element.¹⁶³ Thus, for example, in a hypothetical claim against West Publishing Company for an exclusive dealing arrangement with an Internet services provider, West could probably resist a showing of market power in the market for remotely accessible comprehensive legal databases by demonstrating a high potential for entry by new competitors into that market.¹⁶⁴

5. *Concerted refusals to deal*

Concerted refusals to deal are group boycotts and may constitute per se violations of the Sherman Act.¹⁶⁵ Concerted refusal to deal claims frequently arise in the context of joint ventures because it is logical for joint venture partners to exclude nonparticipants from the benefits of the venture. Recent caselaw indicates the outer limits of the refusal to deal doctrine.

In *SCFC ILC, Inc. v. VISA USA, Inc.*,¹⁶⁶ a district court approved a jury determination that a decision by the VISA credit card joint venture to exclude Sears Roebuck affiliates from VISA membership because of Sears' competing Discover Card constituted a violation of section 1 of the Sherman Act. The district court rejected the argument that the affiliates had to show that the VISA joint venture was an essential facility in order to find liability.¹⁶⁷ Instead, the court stated that joint ventures ordinarily

competitive conditions shown as result of exclusive arrangement between one hospital and one provider of anesthesia services).

163. See *Barr Labs.*, 978 F.2d at 113 (affirming rejection of attempted monopolization claim because of possibility of entry by new drug producers, despite barriers represented by six month to two year waiting period for FDA approval).

164. Because concentration is much higher in the market for comprehensive legal database services, that is the point of greatest vulnerability in the hypothetical case, not in the market structure for network services, where competition is high. See generally *Stevens*, *supra* note 11, at 571 (exploring hypothetical essential facilities doctrine claim based on concentration in legal database market).

165. *Balaklaw*, 14 F.3d at 800 (citing *FTC v. Indiana Fed'n of Dentists*, 476 U.S. 447, 458 (1986), which noted that the "per se approach has generally been limited to cases in which firms with market power boycott suppliers or customers in order to discourage them from doing business with competitors").

166. 819 F. Supp. 956 (D. Utah 1993), *aff'd in part, rev'd in part*, 36 F.3d 958 (10th Cir. 1994).

167. *Id.* at 980-81. The court compared *United States v. Terminal Railroad Association*, 224 U.S. 383 (1912), with *Associated Press v. United States*, 326 U.S. 1 (1945). In *Terminal Railroad*, the Supreme Court found that because the railroad controlled an essential facility in the form of the only bridges over a river, it had a duty to share the facility under the Sherman Act. 224 U.S. at 397. By contrast, the Court in *Associated Press* found that the Associated Press' refusal to allow newspapers into the association did not constitute

are evaluated under the rule of reason analysis,¹⁶⁸ which asks whether "the challenge to agreement is one that promotes competition or one that suppresses competition."¹⁶⁹ The SCFC court rejected VISA's reliance on two legal "screens" that would have applied a rule of reason analysis to dismiss the case before it reached the jury. The first screen involved a finding of a lack of market power; the second involves a finding that the claims of the plaintiff make no economic sense in terms of weighing the anticompetitive and procompetitive effects of the allegedly harmful conduct.¹⁷⁰ The district court also rejected VISA's argument that joint ventures are entitled to more deferential section 1 analysis than conduct involving independent entities because of the procompetitive effect of joint ventures.¹⁷¹

In rejecting VISA's arguments, the district court found sufficient evidence to support a jury conclusion that VISA Bylaw 2.06 had substantial harmful effects on competition, based on evidence that exclusion from highly profitable VISA membership would be a strong disincentive for anyone to introduce a new card if that would disqualify it from membership in VISA.¹⁷² The court also approved the jury's rejection of VISA's argument that the joint venture had a beneficial procompetitive effect by enhancing competition at the intersystem level.¹⁷³ It is important to understand that the district court did not reject this procompetitive effects argument as a matter of law; rather, the district court simply allowed the jury to reject the argument as a matter of fact.

However, the Tenth Circuit Court of Appeals reversed the district court on the basis of a rule of reason analysis which focused on the level of market power involved in the case and on VISA's efficiency justification for Bylaw 2.06.¹⁷⁴ First, the circuit court held, as a matter of law, that the evidence was insufficient to show that VISA had market power, thus applying the first "screen" which the lower court had rejected.¹⁷⁵ The circuit court's analysis supporting this conclusion stressed that the bylaw—which Sears alleged to have harmed competition—was not, in itself, the proper focus of the market power analysis.¹⁷⁶ Rather, it was the bylaw's effects on the market which were determinative. The court found no evidence that the bylaw increased prices, reduced output, or other anticompetitive effects outweighing VISA's procompetitive rationales for

withholding of an essential facility, yet the press still violated the Sherman Act under a rule of reason analysis. 326 U.S. at 13.

168. 819 F. Supp. at 969 & n.11.

169. *Id.* at 968 (citing *National Soc'y of Professional Engineers v. United States*, 435 U.S. 679, 687-88, 691 (1978) (noting that literal construction of language of § 1 would invalidate the entire body of private contract law)).

170. *Id.* at 969.

171. *Id.* at 978-79.

172. *Id.* at 986.

173. *Id.* at 987.

174. *SCFC ILC, Inc. v. VISA USA, Inc.*, 36 F.3d 958 (10th Cir. 1994).

175. *Id.* at 968.

176. *Id.*

the bylaw.¹⁷⁷ Thus, Bylaw 2.06 did not alter the character of the market or harm consumers.¹⁷⁸

The Tenth Circuit court proceeded to analyze VISA's procompetitive justification for Bylaw 2.06. The court accepted VISA's argument that the bylaw was implemented to protect VISA's property from competitors who otherwise would enjoy a free ride.¹⁷⁹ Since the effect of such free riding would be to increase costs to VISA members unfairly, VISA's response to free riding in the form of the bylaw was permissible.¹⁸⁰

6. *Essential facilities*

a. In general. The essential facilities doctrine in antitrust law imposes liability for money damages and possible injunctive relief upon a monopolist or a group of competitors sharing monopoly power who refuse to allow a competitor access to an essential facility.¹⁸¹ It is relatively rare for a plaintiff to meet the requirements for a showing of essential facilities liability. The leading cases in this area show the diversity of factual contexts implicated. These cases have involved (1) a group of railroads that formed a partnership to operate the only terminal railroad company in St. Louis, access to which was practically necessary in order to exchange traffic through the St. Louis gateway;¹⁸² (2) denial to MCI by AT&T of access to its long distance network;¹⁸³ and (3) denial of access to an electric power grid to customers who purchased power from other sources.¹⁸⁴

Four elements must be shown to trigger essential facilities liability: (1) control of an essential facility by a monopolist, (2) a competitor's inability practically or reasonably to duplicate the essential facility, (3) denial of the use of the facility to the competitor, and (4) feasibility of providing access to the facility.¹⁸⁵ These elements usually are difficult to establish on facts concerning digital information networks because the

177. *Id.* at 967-69.

178. *Id.*

179. *Id.* at 969.

180. *Id.* at 969-72.

181. See *Southern Pac. Communications Co. v. AT&T Co.*, 740 F.2d 980, 1008-10 (D.C. Cir. 1984), *cert. denied*, 470 U.S. 1005 (1985). The D.C. Circuit summarized the essential facilities arguments relating to denial of interconnections and concluded that public interest regulation by the FCC could help justify the types of interconnections offered. Applying a test requiring both objective and subjective reasonableness, the circuit court affirmed the district court's finding of good faith, and thus its rejection of the essential facilities claim. *Id.* See also *MCI Communications Corp. v. AT&T*, 708 F.2d 1081, 1096 (7th Cir.) (finding violation of essential facilities doctrine by denial of interconnections), *cert. denied*, 464 U.S. 891 (1983).

182. *United States v. Terminal R.R. Ass'n*, 224 U.S. 383 (1912) (requiring terminal association to admit any requesting railroad on equal terms).

183. *MCI Communications Corp. v. AT&T*, 708 F.2d 1081, 1132-33 (7th Cir. 1983) (affirming jury finding of violation of essential facilities doctrine by AT&T's denial of access to MCI).

184. *Ottetail Power Co. v. United States*, 410 U.S. 366 (1973).

185. *MCI Communications Corp.*, 708 F.2d at 1132-33.

availability of a wide range of alternative paths between any two points tends to negate the first two elements.¹⁸⁶

The Supreme Court's decision in *United States v. Terminal Railroad Ass'n*¹⁸⁷ established the basic standard for when access for nonparticipating competitors would be required when competitors control an essential facility. The case arose after several railroads entering St. Louis organized a terminal company, which, by acquiring two competitors, obtained a monopoly in the market for interchange of traffic in the St. Louis terminal.¹⁸⁸ The Supreme Court recognized that jointly-owned terminal facilities could enhance trade.¹⁸⁹ Moreover, the Court found that

in ordinary circumstances, a number of independent companies might combine for the purpose of controlling or acquiring terminals for their common but exclusive use. In such cases other companies might be admitted upon terms or excluded altogether. If such terms were too onerous, there would ordinarily remain the right and power to construct their own terminals.¹⁹⁰

Thus, the Court recognized the significant role that the availability of alternatives plays in applying the antitrust laws to joint ventures controlling essential facilities.

However, on the facts of the case, physical and topographical conditions prevented the construction of alternative means of access.¹⁹¹ In such circumstances, "a unified system is an obstacle, a hindrance, and a restriction upon interstate commerce, unless it is the impartial agent of all who, owing to conditions, are under such compulsion, as here exists, to use its facilities."¹⁹² While there was no showing that the terminal company had excluded nonparticipating carriers, there was no guarantee that it would not do so in the future.¹⁹³ Moreover, the company imposed certain rates that disadvantaged nonparticipating carriers.¹⁹⁴ To remedy this situation, the government urged that the company be dissolved.¹⁹⁵ The Supreme Court, however, viewed dissolution as an excessive remedy, and instead remanded the case for entry of a decree directing the parties to submit a plan for the reorganization of the contracts among the companies participating in ownership and operation of the company to effect the following goals:

186. See Stevens, *supra* note 11 (suggesting that some monopolies may exist in National Information Infrastructure, thus justifying application of essential facilities doctrine).

187. 224 U.S. 383 (1912).

188. *Id.* at 391.

189. *Id.* at 394-95.

190. *Id.* at 405.

191. *Id.* at 397.

192. *Id.* at 405.

193. *Id.* at 404-05.

194. *Id.* at 407.

195. *Id.* at 409.

First. By providing for the admission of any existing or future railroad to joint ownership and control of the combined terminal properties, upon such just and reasonable terms as shall place such applying company upon a plane of equality in respect of benefits and burdens with the present proprietary companies.

Second. Such plan of reorganization must also provide definitely for the use of the terminal facilities by any other railroad not electing to become a joint owner, upon such just and reasonable terms and regulations as will, in respect of use, character, and cost of service, place every such company upon as nearly an equal plane as may be with respect to expenses and charges as that occupied by the proprietary companies.

Third. By eliminating from the present agreement between the terminal company and the proprietary companies any provision which restricts any such company to the use of the facilities of the Terminal Company.¹⁹⁶

In *MCI Communications Corp. v. AT&T*,¹⁹⁷ the United States Court of Appeals for the Seventh Circuit affirmed, in material part, a judgment of antitrust liability against AT&T for denying interconnections to MCI. The court found that AT&T controlled essential facilities and that the evidence supported the jury's determination that AT&T denied the essential facilities (interconnections for FX and CCSA service) when access to such facilities could have been feasibly provided.¹⁹⁸ The fact that MCI, the entity desiring interconnection, had not actually built the facilities to make use of the interconnection did not defeat its claim.¹⁹⁹ On the other hand, the court distinguished MCI's claim for multipoint connections.²⁰⁰ The court rejected MCI's antitrust challenge to AT&T for refusing to provide multipoint interconnections that would have given MCI access to AT&T's entire long distance network.²⁰¹ Rather, the court concluded that AT&T's refusal to assume voluntarily "the extraordinary obligation to fill in the gaps in its competitor's network" did not suffice to support a finding that it was trying to maintain its monopoly of long distance telephone service by anticompetitive means.²⁰²

*Interface Group, Inc. v. Gordon Publications, Inc.*²⁰³ involved an unsuccessful essential facilities claim by a trade magazine excluded from a computer trade show. The district court distinguished *Terminal Railroad* on the grounds that the trade show was not an essential facility, because the market included a number of other channels for the plaintiff to com-

196. *Id.* at 411 (omitting fourth through seventh terms because those terms pertained to freight charges and retention of jurisdiction by district court to resolve disputes).

197. 708 F.2d 1081 (7th Cir.), *cert. denied*, 464 U.S. 891 (1983).

198. *Id.* at 1133.

199. *Id.* at 1144.

200. *Id.* at 1149.

201. *Id.*

202. *Id.* at 1484.

203. 562 F. Supp. 1235 (D. Mass. 1983).

municate its advertising.²⁰⁴ The analogies between these facts and the facts in the Internet examples are useful. Advertising space resembles bandwidth that might be sold by a value-added network services provider denied bit services by a conduit.²⁰⁵ The journal in *Gordon Publications* is analogous to the network services provider, while the trade show is analogous to the conduit.

Also of interest in the context of infrastructure access is *Illinois ex rel. Burris v. Panhandle Eastern Pipeline Co.*²⁰⁶ Historically, natural gas pipelines bought gas at the wellhead, transported it, and resold it to customers of the pipeline, thus bundling the gas with its pipeline transportation.²⁰⁷ Panhandle purchased gas at high prices, and wellhead prices for gas subsequently fell.²⁰⁸ Certain customers of Panhandle bought their own gas, but Panhandle refused to transport it.²⁰⁹ The Seventh Circuit Court of Appeals characterized the contract between Panhandle and its customers as an exclusive dealing contract that required those customers to purchase all of their natural gas requirements from Panhandle.²¹⁰ The State of Illinois sued Panhandle both as a natural gas consumer and as *parens patriae* for other consumers.²¹¹ The State pressed both traditional monopolization claims and an essential facilities claim.²¹²

The court initially noted that essential facilities liability does not exist if competitors can develop competing facilities and if the owner of the essential facility cannot feasibly provide access to that facility.²¹³ The court proceeded to find that access to Panhandle's pipeline was not essential because it would have been economically feasible for competitors to duplicate Panhandle's system by making interconnections between competing pipelines and constructing new pipelines.²¹⁴ Moreover, Panhandle's refusal to carry competing gas on its pipeline was justified by its exposure to extremely large liability for doing so under its long-term contracts.²¹⁵

Essential facilities liability cannot exist unless the owner of the essential facility is a competitor of those entities that the owner excludes.²¹⁶

204. *Id.* at 1242-43. The district court treated the product as advertising space. *Id.*

205. *Id.* at 1240 (defining product as advertising space).

206. 935 F.2d 1469 (7th Cir. 1991), *cert. denied*, 112 S. Ct. 1169 (1992).

207. *Id.* at 1472.

208. *Id.* at 1472-75.

209. *Id.* at 1474.

210. *Id.* at 1480.

211. *Id.* at 1476.

212. *Id.* at 1482.

213. *Id.*

214. *Id.*

215. *Id.* at 1483 (contrasting *MCI Communications v. AT&T*, 708 F.2d 1081 (7th Cir.), *cert. denied*, 464 U.S. 891 (1983). In *MCI Communications*, the evidence supported a jury finding that AT&T could have provided interconnections and had no legitimate business or technical reason for denying MCI's requested interconnection. *MCI Communications*, 708 F.2d at 1133.

216. *Advanced Health Care Servs., Inc. v. Radford Community Hosp.*, 910 F.2d 139, 151 (evaluating allegation of whether hospital allegedly constituting essential facility competed with suppliers of durable medical equipment).

In most parts of the information infrastructure, status as an essential facility may be difficult to establish because of the many alternative facilities available.²¹⁷ The only exception might be a central name server or a major router operating as a joint venture.

b. Essential facilities and public information. Antitrust essential facilities doctrine also might invalidate exclusive dealing arrangements relating to dissemination of public information such as municipal ordinances, state and federal statutes, and judicial and administrative opinions and orders. For these types of information, there may not be alternative sources. This is clearly true if the originator, like a legislature, a court, or an agency, asserts a copyright or enters into an exclusive dealing arrangement. In this circumstance, the competitive market defense is unavailable with respect to the supply of the information in raw form. Any justification for the arrangement would have to arise from its procompetitive effects or the lack of feasibility of using other less restrictive arrangements. Such conditions are unlikely unless the downstream supplier's market is so small that it comprises a natural monopoly. For example, a very small municipality might be able to establish, as a matter of fact, the absence of sufficient demand for its ordinances to induce the participation of more than one supplier of electronic publishing value like chunking and tagging, pointers, and location and distribution. The difficulty with this defense is that the presence of a plaintiff challenging an exclusive arrangement with the purported natural monopolist belies the argument that there is room for only one producer. State action immunity, however, might shield some exclusive arrangements for dissemination of state or local information.²¹⁸

7. Application of antitrust doctrines to likely NII ventures

The antitrust doctrines considered in the preceding sections can be summarized and synthesized usefully by applying them to two types of ventures: a jointly owned and operated router and an exclusive vertical arrangement.

a. Jointly owned and operated router. A jointly owned and operated router is subject to antitrust attack on several grounds. First, an agreement among competitors jointly to operate the router is implicitly an agreement for them not to offer their own routers unilaterally. It is thus an agreement to limit supply, such as exists in many joint ventures.

The nature of routers, however, makes it impracticable to have a proliferation of routers which are unilaterally operated. For the architec-

217. See *Terminal R.R. Ass'n*, 224 U.S. at 383 (discussing difficulty of establishing essential facilities claim where there are many alternative service providers).

218. See *Capital Tel. Co. v. New York Tel. Co.*, 750 F.2d 1154, 1159-60 (2d Cir. 1984) (reviewing history of state action immunity and applying two-part test to find both affirmative state policy and active supervision over pricing of telephone service, thus requiring dismissal of antitrust claim), *cert. denied*, 471 U.S. 1101 (1985).

ture to work at all, the degree of cooperation among the unilateral suppliers of routers and routing services would have to be so great as to be equivalent to the cooperation involved in a joint venture router. Thus, the purported supply lost because of the joint arrangement is illusory. Indeed, a jointly operated router may in fact enhance consumer access to all of the participants and thus may increase rather than limit competition among them. Procompetitive justifications figure prominently in the analysis of joint ventures.²¹⁹ It is unlikely that the joint router would result in liability as an agreement to limit supply.

The router agreement might be attacked as a concerted refusal to deal by anyone excluded from use of the router or disadvantaged by the way that it operates.²²⁰ Such an attack could succeed if suppliers of relevant network services could show that they are excluded from participation in the joint venture even though they are willing to pay and meet other terms satisfied by the joint venturers. On the other hand, if the only entities excluded are those refusing to pay the usual price for membership in the venture and otherwise to comply with the terms of the venture, their claims for a concerted refusal to deal almost certainly will fail. The likely factual argument will center on whether the terms offered are equitable, considering the different situations of the various actual and would-be participants.²²¹ Further, an essential facilities claim would fail under application of the same standards discussed with respect to concerted refusal to deal.²²² Additionally, neither the concerted refusal to deal nor the essential facilities challenges could succeed unless the challenger could show an absence of competitive alternatives to the jointly operated router.²²³

219. See Brodley, *supra* note 114, at 1530-33 (recommending three basic inquiries in analyzing joint ventures: (1) whether the venture is unreasonable because risk of harm outweighs promise of benefit; (2) whether collateral restrictions prove to be unreasonable; and (3) whether access to the venture is reasonably necessary for effective competition); Lawrence A. Sullivan, *Anticipating Antitrust's Centennial: The Viability of the Current Law on Horizontal Restraints*, 75 CAL. L. REV. 835, 872 (contending that ventures should be allowed to show efficiencies that offset the risk of harm).

220. See *Associated Press v. United States*, 326 U.S. 1, 22 (1945) (granting injunctions against by-laws of a co-operative news gathering agency which forbade members to furnish news to nonmembers).

221. See *United States v. Terminal R.R. Ass'n*, 224 U.S. 383, 411 (1911) (holding that reorganization plan must provide for the use of facilities by other railroads "upon such just and reasonable terms . . . [as to] place every company upon as nearly an equal plane as may be").

222. See *MCI Communications Corp. v. AT&T*, 708 F.2d 1081, 1132-33 (7th Cir.), *cert. denied*, 464 U.S. 891 (1983) (discussing the four elements needed to prove an essential facilities claim). In other words, the essential facilities doctrine overlaps concerted refusal to deal analysis so much that essential facilities is more useful as a theory of § 2 monopolization than of § 1 restraint of trade. See Stevens, *supra* note 11, at 584-85 (describing the relationship between the essential facilities doctrine and refusal to deal).

223. See Clark C. Havighurst, *Doctors and Hospitals: An Antitrust Perspective on Traditional Relationships*, 1984 DUKE L.J. 1071, 1123 (1984) (stating that under a rule of reason, a judicial policy of protecting a joint venture should only be adopted if the parties had no alternative method to attain their valid objectives which would have been less

b. *Exclusive vertical arrangement.* The kinds of vertical arrangements likely to exist in the NII would be unlikely to produce antitrust liability. While the nature of Internet architectures facilitates technological unbundling,²²⁴ the market for any particular type of value is likely to be quite competitive. Thus, a producer excluded from access to any particular type of value by a particular exclusive dealing arrangement can find other alternative sources of that type of value. The relevant adjacent markets for infrastructure services resemble the markets for health care services that led to rejection of antitrust claims in that context, except that the infrastructure markets are likely to be even more competitive than the health care markets.²²⁵

The only interesting possibility for liability would be exclusive vertical dealing arrangements relating to public information, like municipal ordinances, state and federal statutes, and judicial and administrative opinions and orders. For these kinds of information, alternative sources may not be available. This is clearly true if the originator, like a legislature, a court, or an agency, asserts copyright or itself enters into an exclusive dealing arrangement.

For example, the Washington State Court System has entered into an exclusive arrangement with an electronic publisher for dissemination of its judicial opinions. Under the arrangement, the court system denies access to the opinions in their original electronic form to competing distributors and publishers. The Securities and Exchange Commission has entered into a similar exclusive arrangement with a dissemination subcontractor, albeit under statutorily mandated conditions that seek to assure the dissemination subcontractor equal access to the product. Nevertheless, the arrangement excludes those who wish to compete with the dissemination subcontractor during the term of the contract, and has been criticized by public interest groups.

In such circumstances, the competitive market defense is unavailable with respect to the supply of the information in raw form. Any justification for the arrangement would have to arise from its procompetitive effects or the lack of feasibility of other less restrictive arrangements. Procompetitive arguments would likely resemble those advanced under essential facilities analysis.

F. Condemnation and Eminent Domain with Respect to Intellectual Property

Denials of access may sometimes follow from the simple assertion of intellectual property rights.²²⁶ The holder of a copyright in software or

restrictive).

224. See generally Perritt, *Unbundling Value*, *supra* note 5 (discussing features of Internet architecture which may facilitate unbundling).

225. See generally Havighurst, *supra* note 223 (discussing antitrust laws relating to the field of health care).

226. See *SCM Corp. v. Xerox Corp.*, 463 F. Supp. 983, 997 (D. Conn. 1978) (stating that "the broad power to exclude . . . is what requires an accommodation between the pat-

information content, or the holder of the patent in a computer system or process, may deny others the use of the content, software, or system, or may charge prices for its use that the entity desiring access finds unaffordable. The Copyright and Patent Clause of the United States Constitution²²⁷ and the copyright and patent statutes acknowledge the legitimacy of such denials of access in the vast majority of cases.²²⁸ Indeed, there is no duty to license copyrights or patents under the intellectual property laws or antitrust law.²²⁹ Rare circumstances may arise, however, in which legitimate information infrastructure goals cannot be attained without forcing intellectual property owners to grant access. In such circumstances, one source of access rights might be partial condemnation, through the exercise of eminent domain powers by the federal government.²³⁰ Indeed, there is a statutory provision in governmental contract law contemplating condemnation. The condemnation approach, while representing significant intrusion into the prerogatives of the intellectual property owner, nevertheless may balance the interests of grantor and grantee of access because it envisions judicially determined compensation for the access.

One important limitation on the condemnation approach is that it may be used only for public purposes, while the interests of the entity granted access through condemnation may largely be private.²³¹ On the other hand, the history of condemnation and eminent domain in the telecommunications industry shows that a mixture of public and private objectives can support the taking of private property, and a sufficient public interest certainly could exist to justify condemning strategically situated intellectual property in the NII context.²³² Beyond the public

ent laws and the antitrust laws"), *cert. denied*, 455 U.S. 1016 (1982). See also Rafael X. Zahraiddin, Note, *The Effect of Broad Patent Scope on the Competitiveness of United States Industry*, 17 DEL. J. CORP. L. 949, 990 (1992) (describing the benefits to intellectual property ownership of patent protection).

227. U.S. CONST. art. I, § 8, cl. 8.

228. See *Schnapper v. Foley*, 667 F.2d 102, 113 n.4 (D.C. Cir. 1981) (stating that in absence of a specific exception, Congress has vested in the copyright holder the liberty not to license rights in his work), *cert. denied*, 455 U.S. 948 (1982).

229. 35 U.S.C. §§ 1-376 (1988) (patents); 17 U.S.C. §§ 101-809 (1988 & Supp. V 1993) (copyrights); 15 U.S.C. §§ 1-2 (1988 & Supp. V 1993) (antitrust).

230. Both copyright and patent statutes broadly preempt state law, and therefore exercise of eminent domain by state governments would interfere with federally granted rights and presumably be preempted. See *Compco Corp. v. Day-Brite Lighting*, 376 U.S. 234, 237 (1964) (holding that an order protecting plaintiff's invention under state patent was in conflict with federal patent laws when invention was unpatented under federal law); *Sears, Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 232 (1964) (holding that when an article is unprotected by a patent or a copyright, state law may not forbid others to copy that article).

231. See *Hawaii Hous. Auth. v. Midkiff*, 467 U.S. 229, 241 (1984) (holding that a "purely private taking" would be unconstitutional, and under the Public Use Doctrine, the exercise of eminent domain power must be rationally related to a conceivable public purpose).

232. See *Leesona Corp. v. United States*, 599 F.2d 958, 964 (holding that where U.S. government infringed on patents, it was deemed to have taken the patent license under eminent domain theory), *cert. denied*, 444 U.S. 991 (1979).

purpose concern, a significant disadvantage to the condemnation approach is the uncertainty and cost of determining compensation through a judicial proceeding.²³³ However, it could be argued that infrequent use of the condemnation power should make the transaction costs of judicial compensation setting tolerable.

Compulsory licensing is akin to condemnation. Congress has imposed compulsory licensing obligations in the limited case of computer chip mask works.²³⁴ Some commentators have proposed compulsory licensing as a useful approach in balancing the interests involved in extending copyright protection to functional features of computer software.²³⁵

The recent controversy over the patents for the RSA encryption algorithm exemplifies one candidate for forcing access through condemnation. Patent holders for the algorithm took the position that certain proposed governmental encryption standards would infringe their patent, and that they should be entitled to royalties for use of the governmentally prescribed standard.

Another possible application for the condemnation doctrine would be in a situation where someone belatedly asserts a copyright interest in basic infrastructure standards like TCP/IP, World Wide Web, or Gopher. In such a circumstance, challenging issues would arise with respect to the nature of the intellectual property, requiring courts to sort out complex problems of intellectual property law before there would be any possibility for condemnation. For example, the RSA patent may be held invalid. Further, the core Internet standards may represent uncopyrightable functions rather than protectible expression. Even assuming the core standards represent protectible expression, they may have been placed in the public domain or subject to broad fair use privileges.²³⁶ In situations such as the RSA case, the condemnation approach might be attractive even when a unilaterally determined royalty arrangement is unattractive. Condemnation is a way of forcing an intellectual property owner to grant access when he otherwise would completely refuse access. It is also a way to involve the law in circumscribing pricing for access.

As with other sources of access rights, the appropriateness of condemnation of intellectual property may depend on the availability of alternatives. Alternatives are more likely to be available to copyrighted elements rather than to patented elements, because copyright law allows independent creation.²³⁷ In addition, the scope of copyright law for func-

233. See *Danforth v. United States*, 308 U.S. 271, 285 (1939) (temporary fluctuations in value of plaintiff's land due to pendency of condemnation proceedings not compensable); *Monogahela Navigation Co. v. United States*, 148 U.S. 312, 327-28 (1893) (determination of "just" compensation is a judicial question); *Leesona*, 599 F.2d at 973 (holding that comparative royalty technique is the preferred method of determining just compensation).

234. 17 U.S.C. § 903(b) (1988).

235. See Wendy J. Gordon, *On Owning Information: Intellectual Property and the Restitutionary Impulse*, 78 VA. L. REV. 149, 272 (1992) (suggesting that grants or rights in news should be conditioned on a legislatively authorized compulsory license).

236. See Perritt, *Unbundling Value*, *supra* note 5.

237. 17 U.S.C. § 106 only reserves to the copyright holder exclusive rights of repro-

tional works is circumscribed when few or no alternatives exist to the copyrighted work.²³⁸ Patent law, on the other hand, forecloses independently created inventions within the scope of the patent. Therefore, it is much more difficult to avoid a patent in seeking to achieve the same function as the patented work.

V. PRIVILEGES AND IMMUNITIES

A. *The First Amendment*

The First Amendment entitles one to refrain from speaking as well as entitling one to speak. Imposing access duties on a provider of infrastructure services potentially offends this guarantee.²³⁹ On this topic, a relevant holding is *Turner Broadcasting System, Inc. v. FCC*.²⁴⁰ In that case, the United States Supreme Court invalidated a lower court decision upholding cable television "must carry" rules. The Supreme Court remanded to the lower court for development of a better record as to whether the survival of local television stations was jeopardized by unrestricted cable television activity, and whether there were less restrictive means of achieving governmental interests in assuring an outlet for local broadcasting.²⁴¹ The *Turner Broadcasting* analysis was based on the First Amendment Privileges and Immunities Clause rather than the Fifth Amendment Takings or Due Process Clauses.²⁴²

The First Amendment can also support claims of access rights. Usually, refusal of access by a private network services provider cannot support a claim for violation of the constitutional rights of the entity desiring access because the refusal is not "state action." In *Altmann v. Television Signal Corp.*,²⁴³ however, a federal district court found that sections 10(a) and (c) of the 1992 Cable Act sufficiently encouraged private cable operators to ban constitutionally protected material from leased and public access channels to justify an injunction against an outright ban.²⁴⁴ The district court made this finding while acknowledging the general rule that state regulation of a private industry usually is not enough to establish

duction, preparation of derivative works, distribution, public performance, and public display. 17 U.S.C. § 106 (1988 & Supp. V 1993). If someone other than the copyright holder creates something similar or identical to the copyrighted work without engaging in any of these types of conduct with respect to the copyrighted work, there is no infringement.

238. See *Sega Enterprises Ltd. v. Accolade, Inc.*, 977 F.2d 1510, 1522-23 (9th Cir. 1993) (finding that copying of Sega's copyrighted code was legitimate to determine compatibility of Accolade's computer games given lack of other methods to make that determination).

239. See generally Note, *supra* note 1 (analyzing NII in First Amendment context).

240. 114 S. Ct. 2445 (1994).

241. *Id.* at 2471-72.

242. *Id.* at 2451-52. "This case presents the question whether [the must carry] provisions [for local broadcast television signal] abridge the freedom of speech or of the press, in violation of the First Amendment." *Id.*

243. 849 F. Supp. 1335 (N.D. Cal. 1994) (granting preliminary injunction against complete ban by cable television network on broadcast of allegedly obscene programming).

244. *Id.* at 1347.

state action.²⁴⁵ The court emphasized that the statute deprived cable operators of editorial control over constitutionally protected speech, but expressly authorized operators to exclude indecent material from leased and public access cable channels.²⁴⁶ "This solitary government exception focuses the cable operator's attention on the material the government wishes to suppress and gives the operator the authority to ban the material entirely."²⁴⁷ In light of the state action limitation, the *Altmann* holding does not demonstrate that the First Amendment is a source of broad access rights or imposes duties regarding access on the part of cable operators in general. Rather, *Altmann* merely proscribes governmental direction of the cable operator to limit access.

B. Taking of Private Property

One particularly strong form of access rights would be that which entitled B to access a physical facility owned by A. All physical interconnection controversies arguably involve this kind of access. While no one would suggest that A, owner of a video production studio, must give B access to that studio, some community access rights under the Cable Act come close to imposing such a requirement.

A straightforward way to force the owner of infrastructure to grant access is to condemn the part of the infrastructure to which access is required. However, the Fifth Amendment to the United States Constitution requires just compensation when private property is taken for public purposes.²⁴⁸ The Due Process Clause of the Fifth and Fourteenth Amendments imposes a similar requirement.²⁴⁹ These limitations played a role in the early days of railroad regulation, and have recently come into play in telecommunications regulation.

For example, in *Bell Atlantic Telephone Cos. v. FCC*,²⁵⁰ the court of appeals invalidated two FCC orders that required local telephone exchange carriers to set aside a portion of their central offices for occupation and use by competitive access providers.²⁵¹ The orders were intended as a mechanism for achieving the unbundling of communication services. The telephone companies had been charging bundled rates for access to their networks, thus placing competitive access providers at an economic disadvantage because the bundled rates included the costs of facilities

245. *Id.* at 1342.

246. *Id.* (citing 47 U.S.C. §§ 531(e), 532(c)(2) (1988)).

247. *Id.* at 1343.

248. The Fifth Amendment's takings clause provides: "nor shall private property be taken for public use without just compensation." U.S. CONST. amend. V.

249. The Fifth Amendment's due process clause states that "[n]o person shall be . . . deprived of life, liberty, or property, without due process of law." U.S. CONST. amend. V. The Fourteenth Amendment version states that "[n]o state shall . . . deprive any person of life, liberty, or property, without due process of law. . . ." U.S. CONST. amend. XIV.

250. 24 F.3d at 1441 (D.C. Cir. 1994).

251. *Id.* at 1443 (citing Expanded Interconnection with Local Telephone Company Facilities (FCC Docket No. 91-141), Report and Order and Notice of Proposed Rulemaking, 7 F.C.C.R. 7369 (1992); Memorandum Opinion and Order, 8 F.C.C.R. 127 (1993)).

that the competitive access providers supplied on their own.²⁵² The telephone companies challenged the orders on two grounds: (1) that the Communications Act of 1934 did not authorize such orders; and (2) that if statutory authority did exist, the orders constituted an unconstitutional "taking."²⁵³ The court of appeals, while concluding that it lacked jurisdiction to decide whether a taking occurred,²⁵⁴ decided that the likelihood of a taking required construing the statute to exclude authority for the physical co-location order.²⁵⁵ "If the statute vests the Commission with power to confer an exclusive right of physical occupation, exercise of the statutory power would seem necessarily to 'take' property regardless of the public interest served in a particular case."²⁵⁶ While noting that "[s]witch connections are to railroads what cable hookups are to telephone companies," the court distinguished provisions of the Interstate Commerce Act that authorized ICC orders to open terminal facilities to other carriers, because those provisions expressly referred to principles controlling compensation in condemnation proceedings.²⁵⁷

These recent First and Fifth Amendment cases suggest that any statutory or regulatory duty to provide access will receive sharp constitutional scrutiny. *Turner Broadcasting*, in particular, indicates the linkage between the availability of competitive alternatives and the scope of constitutionally permissible access duties.²⁵⁸ The First Amendment permits forcing some information conduits to accept content generated by others, but only when such forcing is necessary to permit the content to find its audience. When the entity burdened by the duty has relatively little interest in expression, for example if it is simply a router, the First Amendment allows a broader range of legislative and regulatory discretion to impose a duty because the harm to First Amendment interests is minimal. No expressive will is involved in operating a router. Conversely, if significant burdens on First Amendment interests are involved, and there are many competitive alternatives, imposing a duty that limits First Amendment interests may lack justification. In that case, the interests protected by the duty do not need imposition of the duty to survive; they can be realized through alternative channels.

252. *Bell Atl. Tel. Co.*, 24 F.3d at 1443. The court found that a "bundled special access rate structure was retarding competitive advances by the CAPs because the bundling of the rates means that CAPs pay all the components of the special access charge even if the CAP substitutes its own facilities for one of the LEC transmission segments." *Id.*

253. *Id.* at 1444-45.

254. *Id.* at 1444 n.1. The United States Claims Court has exclusive jurisdiction to decide takings assertions over \$10,000. *Id.* (citing 28 U.S.C. § 1346(a)(2) (1988)).

255. *Id.* at 1445.

256. *Id.* at 1446.

257. *Id.* at 1446 (summarizing 49 U.S.C. §§ 11,103(a), 11,104(a) (1988)).

258. For a discussion of *Turner Broadcasting*, see *supra* notes 240-42 and accompanying text.

VI. COMPETITION AS THE CORE GOAL

Promoting competition is the most important central policy premise behind NII access regulation. Such a goal is consistent with the theme of deregulation that has guided telecommunications policy for the last ten years. Moreover, competition is the best assurance of the benefits of rapid technological change. The personal computer revolution and the rapid development of the Internet has shown how rapidly the competitive market can deliver useful technology at affordable prices. Two years ago, one of the main disadvantages of the Internet as a means for finding and retrieving information was the absence of user-friendly interfaces that would run on desktop computers. Now, a variety of Gopher clients and World Wide Web clients such as Mosaic, Netscape, and Cello are available through commercial and noncommercial sources.²⁵⁹ A year ago, one of the main disadvantages of the Internet for individual users was the difficulty in obtaining affordable SLIP and PPP connections.²⁶⁰ Now, at least a dozen affordably priced shrink-wrapped SLIP and PPP software products are available that offer easy connectivity to low-priced Internet access services at 14.4 kbps or better. Five years ago, it seemed reasonably clear that the best way to organize information for remote retrieval in the NII was to do it through large host computers, remotely accessible through proprietary connections and software. Today, there is a real possibility that at least some kinds of information can be organized and retrieved more efficiently through distributed, open architectures like the Internet. It is extremely unlikely that any conceivable legal regime regulating the details of pricing, market entry, product, and service characteristics could have responded fast enough to allow this kind of innovation and change in market focus. The central feature of any regulatory approach to the NII must be that it does not inhibit this kind of robust adaptability fueled by vigorous competition.

A personal anecdote is instructive on this subject. The author supervises an Internet server, funded by the National Center for Automated Information Research (NCAIR), aimed at demonstrating the utility of the Internet for disseminating public information with a focus on practicing lawyers. In writing this article, the author asked himself how he would feel about the imposition of a legal duty for this Internet server to provide interoperability with certain Internet services, for instance WAIS services,²⁶¹ which are only loosely connected to the NCAIR server at pre-

259. Mosaic and Cello are computer software programs designed to access World Wide Web (WWW), a specific information management facility. See Christopher Locke, *Business on the Internet: Untangling the Web*, INFORMATION WEEK, May 9, 1994, at 92. Both the Mosaic and Cello software are available free; Mosaic from National Center for Supercomputer Applications (NCSA), and Cello from Cornell University's Legal Information Institute. *Id.*

260. Both Mosaic and Cello require, at a minimum, a special connection to the Internet, a SLIP (Serial Line Internet Protocol). *Id.* Although SLIP is becoming less expensive, the costs and configuration problems are still prohibitive for most users. *Id.*

261. WAIS is a digital library and a form of electronic publishing created by Thinking

sent.²⁶² The answer is that such a duty would seem very burdensome and could interfere significantly with the flexibility that is key to an effective demonstration project. While the burden on a nonprofit server such as NCAIR would be significant, the burden and interference would be even greater if the server was profit-seeking. Opponents to such a duty would point to the large number of alternative servers, and the ease with which someone not finding an appropriate interconnection could establish his own server. Intuitively, a circumscription of interoperability and interconnection duties based on the availability of alternatives makes good practical sense.

But beyond that, a mere absence of alternatives may not be enough to justify imposing such a duty. The fact that new services might be burdened with duties since their novelty is accompanied by a lack of available alternatives would create a disincentive for service providers to innovate. Thus, it also makes intuitive sense that duties should be imposed only on providers who volunteer or in some other sense acquiesce by entering an environment where the duties are known to be likely.²⁶³ This resembles the "holding out" component of common carrier analysis. Such a line of reasoning suggests that imposition of duties is appropriate in an environment in which the monopoly power and the holding out components are strong, and the public interest component is weak,²⁶⁴ under the framework suggested by Figure 1.

Beyond representing an alternative to detailed regulation, free-market competition also shapes the imposition of traditional sources of access duties.²⁶⁵ For instance, the availability of competitive alternatives negates essential facilities obligations under antitrust law.²⁶⁶ Competitive market conditions make the finding of common carrier status less likely both under communication statutes²⁶⁷ and at common law.²⁶⁸ Moreover, the

Machines Corporation. Perritt, *Tort Liability*, *supra* note 6, at 136. WAIS data resides on thirty servers running on the Internet and can be accessed on local user workstations using plain language queries. *Id.* at 138. WAIS requires an intermediate degree of centralization. *Id.*

262. The server concentrates on World Wide Web, Gopher, and FTP file retrieval.

263. This analysis resembles the holding-out component of common carrier analysis. Holding oneself out as a common carrier was one of the most important determinants of common carrier status. Perritt, *Tort Liability*, *supra* note 6, at 77. Essentially, the only price paid was that of bearing the common law carrier obligations, such as non-discriminatory treatment of customers. *Id.* For further discussion of statutory common carriers, see *supra* notes 31-72 and accompanying text. For a discussion of common law carriers, see *supra* notes 73-81 and accompanying text.

264. Public interest appears weak in this instance because a business who holds itself out as a common carrier also has a strong potential for monopoly power and a strong chance to avoid regulation by the market, indicating a need for acknowledgment of and concern for the public interest. Perritt, *Tort Liability*, *supra* note 6, at 77.

265. For a discussion of access duty, see *supra* notes 12-20 and accompanying text.

266. For a discussion of essential facilities obligations, see *supra* notes 181-218 and accompanying text.

267. For a discussion of statutory common carriers, see *supra* notes 31-72 and accompanying text.

268. For a discussion of common carrier status at common law, see *supra* notes 73-81

availability of competitive alternatives with low switching costs lessens the chance of showing such detrimental reliance as may be a prerequisite to contract enforcement.²⁶⁹

From a policy perspective and from a legal analytical perspective, the competitive structure of NII markets is of central importance. At the fringes of the network, vigorous competition almost certainly will prevail. Internet-like technologies and the existence of a real infrastructure will greatly reduce the barriers to entry. Thus, it is more likely that there will be many more providers of any particular content or service. At the core of the infrastructure, however, there may be certain essential facilities pertaining to name and address databases as well as routers which are not as susceptible to competition.²⁷⁰ Similarly, certain white pages and yellow pages services may be natural monopolies. As to these essential facilities, it may be appropriate to impose specific access duties as legal obligations.

Figure 2

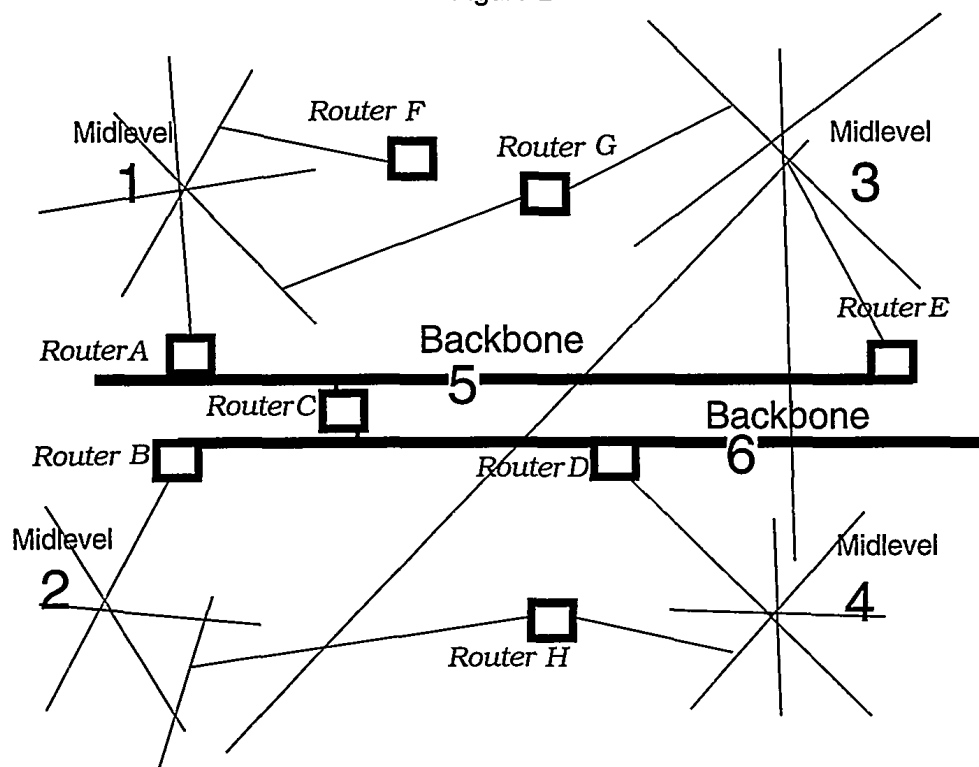


Figure 2 is a schematic of the Internet. Competing backbones, such as NSFnet and PSI, are shown as Backbones 5 and 6. Midlevel networks 1, 2, 3, and 4 represent networks like BARRnet, CERFnet, SURAnet, and NEARnet. It might seem that denial of access to Routers A, B, C, D, or E should give rise to liability under one of the theories reviewed in this arti-

and accompanying text.

269. For a discussion of contract enforcement, see *supra* notes 82-111 and accompanying text.

270. For a discussion of routers, see *supra* notes 219-24 and accompanying text.

cle. These routers have some degree of market power, and their owners have held them out as providing service to a broad class of networks. On the other hand, it is not clear that competitive alternatives are unavailable. It probably is the case that if Midlevel 4 were denied access to Router D, thus denying it a way to move traffic to and from other midlevel networks, Midlevel 4 could relatively easily establish alternative paths, either by obtaining access to Backbone 5 through Router E, or by establishing new router connections directly with other regional networks, as shown by Router H. More generally, the competitive conditions that lessen the need for legal intervention will exist only if all of the parts of the system are interoperable. A multiplicity of incompatible systems reduces the available alternatives when markets are defined narrowly, and incompatibility increases switching costs when alternatives exist in more broadly defined markets. In order for a competitive market to be relied upon in preference to law, such a market must exist. It may not exist unless the law intervenes to the limited extent of requiring interoperability.

VII. DESIRABLE FEATURES OF ACCESS ENTITLEMENTS

A. *Interoperability Requirements*

NII regulatory concepts must assure compatibility and interoperability of various parts of the infrastructure. The literature on standard setting suggests that markets will adopt standards only in certain circumstances of market structure,²⁷¹ which are unlikely to exist uniformly throughout the infrastructure. Regulatory intervention may be appropriate to ensure that the country receives an interconnected national infrastructure and not an electronic archipelago of proprietary islands, navigation through which is extremely difficult. Attention must be given to uniform standards to allow the exchange of computer files and to facilitate remote login to computers and electronic mail—something to tie the lawyer, the citizen, and the library into ATM or FDDI which operate in the broadband backbone.²⁷²

Regulatory mandates for interoperability and compatibility should be functional rather than technical. The government's success rate in select-

271. For a discussion of statutory standards regarding common carriers, see *supra* notes 31-72 and accompanying text. For a discussion of standards developed for joint ventures, see *supra* notes 114-34 and accompanying text. For a discussion of standards for vertical exclusive arrangements, see *supra* notes 135-39 and accompanying text. For a discussion of standards established for tying arrangements, see *supra* notes 140-54 and accompanying text. For a discussion of standards related to exclusive dealing, see *supra* notes 155-64 and accompanying text. For a discussion of court-imposed standards on concerted refusals to deal, see *supra* notes 165-80 and accompanying text. For a discussion of judicially imposed standards on essential facilities, see *supra* notes 181-217 and accompanying text.

272. Computer file exchange, remote login, and electronic mail are all basic functions presently available through the Internet and which should be elaborated to accommodate the exchange of graphic images and audio.

ing computer standards has not been very good. The Defense Department's adoption of ALGOL as a computer programming language, and the National Institute of Standards and Technology's adoption of OSI as an interoperability standard, are characteristic examples of governmental failures.²⁷³ On the other hand, there have been successes. COBOL is a clear example.

Encryption standards pose a particular risk. The Clipper Chip experience has shown the kind of controversy that can be stirred up by encryption initiatives.²⁷⁴ The controversy would be no less if the government sought to adopt an encryption standard to protect intellectual property, as some people have suggested in connection with the Information Infrastructure Task Force.²⁷⁵

While encryption offers some attractive capabilities to copyright holders,²⁷⁶ it also has important disadvantages. As the sophistication and degree of encryption increases, so too must the sophistication and universality of the institutional infrastructure to support the use of encryption in an intellectual property protection system.

Private key encryption systems require preestablished relationships and exchange of private keys in advance of any encrypted communication. The burdens of this approach have led most proponents of electronic commerce to explore public key encryption instead. However, public key systems require the establishment and policing of a new set of institutions. An important infrastructure requirement for practicable public key cryptography is the establishment and maintenance of certify-

273. The International Standards Organization's Open Systems Interconnection (ISO-OSI) represents a widely-accepted conceptual framework for thinking about specific standards and conventions for intercommunication and information transfer between different computer systems. Henry H. Perritt, Jr., *Electronic Records Management and Archives*, 53 U. Prrt. L. Rev. 963, 1011 n.174 (1992).

274. Competing data security standards have prompted a debate between industry and government. Richard D. Marks, *Current High Technology and Information Infrastructure Initiatives*, 34 JURIMETRICS J. 117, 129-30 n.43 (1993). The "Clipper Chip," data encryption technology developed by the National Security Agency (NSA) and adopted by the NIST, is at the center of the controversy. *Id.* The Clipper Chip was conceived as a means to allow law enforcement agencies access to "back doors" into computer systems through a sophisticated algorithm that also protects a company's information and communications. To tap a system protected by the Clipper Chip, law enforcement authorities would have to obtain a court order for access to the back door codes. *Id.*

275. Notice of Hearing and Request for Public Comment, 58 Fed. Reg. 53,917 (1993) (notice by Working Group on Intellectual Property of the Information Policy Committee of the NII Task Force, requesting comments on intellectual property issues involved in NII initiative). *But see* Preliminary Working Group Report (declining to adopt encryption approach).

276. Encryption is likely to be necessary in commercialized internetworks used for electronic publishing. Even if content is not encrypted, the billing and collection server is likely to use encryption to authenticate payment orders, as through credit card verification. Otherwise, a forger could be granted access by presenting an invalid credit card number, along with intercepted approval codes. The point is not to avoid encryption; rather, it is to shift encryption down the communication chain and to focus it on the appropriate bottleneck in order to minimize encumbering the features of the desired architecture.

ing entities that maintain the public keys and ensure that they are genuine ones rather than bogus keys inserted by forgers.²⁷⁷ On this oversight issue, a rough analogy can be drawn between the public key certifying entities and notaries public. Both kinds of institutions verify the authenticity of signatures and both require some level of licensing by governmental entities. Without such licensing, the word of the "electronic notary" as a certifying entity may be no better than an uncertified, unencrypted signature. In a political and legal environment in which the limitations of regulatory programs have been recognized and have led to deregulation of major industries, it is not clear that a major new regulatory arrangement for public key encryption is practicable.

Functionally oriented interoperability and compatibility requirements constitute another regulatory matter to consider. Recent initiatives by the FCC in telephone and radio regulation are good models of a functional approach.²⁷⁸ The recent FCC effort to encourage private interests

277. See BRUCE SCHNEIER, *APPLIED CRYPTOGRAPHY* § 2.5 (1994) (describing attacks against public key cryptography).

278. *In re A Re-examination of Technical Regulations*, 99 F.C.C.2d 903, 910 (1993) (noting high priority attached to interoperability in many radio services, but also noting that priority of mandating specific interoperability through regulation varies depending on the service) (Report and Order establishing general guidelines). The FCC made the following findings:

Direct Commission regulation of interoperability is useful in several cases such as (1) in systems where instant communications between all stations is critical to safety (e.g. the maritime and aeronautical distress frequencies), (2) in systems where interoperability can be shown to be critical to national security/emergency preparedness concerns (e.g. the Emergency Broadcast Service), and (3) in helping the introduction of new services involving large public participation (e.g. cellular radio telephone service). In non-safety cases where we consider mandatory standards we will consider them on a case by case basis, and we will consider whether the benefits of standards outweighs the costs and time delay involved. We will seek to deregulate standards when (1) it can be determined that they are sufficiently well established to be maintained as voluntary standards and (2) enough equipment is installed to give manufacturers and service providers the incentive to make any new changes compatible with the original equipment. In these non-safety cases, we will also consider alternatives to mandatory standards that endorse or give a preference to a specific standard rather than requiring it.

Id. See also *In re Amendment of the Commission's Rules to Establish New Personal Communications Services*, 8 F.C.C.R. 7700, 7781 ¶ 195 (1993) (noting importance of interoperability in worldwide communications systems) (Second Report and Order); *In re Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service*, 7 F.C.C.R. 11 ¶ 71 (1992) (noting that interoperability is 1 of 10 selection criteria advisory committee will employ in selecting advanced television systems) (Second Report and Order); *In re Advanced Technologies for the Public Safety Radio Services*, 4 F.C.C.R. 8519, 8519 ¶ 1 (1989) (initiating inquiry to explore possibility that next generation of digital radios for 800 MHz public safety systems may require some degree of standardization to enable system interoperability, but noting earlier conclusions that mandated standards were unnecessary) (Further Notice of Inquiry); *In re Implementation of Sections 3 and 332 of the Communications Act*, 9 F.C.C.R. 2863, 2875 ¶¶ 56-57 (1994) (noting earlier adoption of interoperability rules that require all cellular telephones to be capable of operating on all cellular channels and capable of successfully interacting with the base stations of all cellular radio service providers; seeking comment on whether Part 90 CMRS licensees should be

to agree on High Definition Television (HDTV) standards also represents a useful model for the future.²⁷⁹

The policy and legal issues with respect to interoperability requirements become more difficult the further one moves along the spectrum from pure conduit to pure content.²⁸⁰ It is relatively easy to conclude that interoperability in basic transmission and switching should be extended from analog voice communications to digital communications. Internet-like functionality probably should be required at least for the basic e-mail, remote login, and file transfer functions well known to Internet users. It is less clear that compatibility requirements should be imposed on activities more closely related to content. For example, a requirement that one menuing system or retrieval syntax be compatible with all others could erect a significant barrier to innovation. Similarly, requiring all computer programming languages or language compilers to be compatible with all others would represent a huge barrier to innovation in the development of compilers of programming languages.

Moreover, the closer one gets to content in requiring compatibility, the harder it is to justify the requirement under the First Amendment.²⁸¹ While content-neutral regulation is permissible under the First Amend-

subject to mandatory interoperability requirements similar to those applicable to cellular licensees) (Regulatory Treatment of Mobile Services, Further Notice of Proposed Rule Making); *In re* Amendment of the Commission's Rules to Establish New Personal Communications Services, 8 F.C.C.R. 7700, 7755 ¶ 137 (1993) (recognizing that roaming and interoperability are two important features of Personal Connecting Services and that such features could be fostered through adoption of technical standards) (Second Report and Order); *In re* Expanded Interconnection with Local Telephone Company Facilities, CC Docket No. 91-141, Transport Phase II, FCC 94-118, at note 8 (May 19, 1994) (noting decision not to address expanded interconnection for provision of subscriber loops, as well as interoperability of LEC local switches and other parties' switches required for competitive provision of local exchange service) (Third Report and Order); *In re* Policies and Rules Concerning Local Exchange Carrier Validation and Billing Information for Joint Use Calling Cards, 7 F.C.C.R. 3528 (1992) (review of local exchange carrier (LEC) calling card practices, *id.* at 3529; requiring that LECs provide non-discriminatory access to card data, *id.* at 3530, 3575; inviting comment on billing name and address service requirements, *id.* at 3538-39; noting possibility that industry standards must be agreed upon to ensure interoperability between multi-vendor networks), *id.* at 3537) (Report and Order and Request for Supplemental Comment).

279. *In re* Advanced Television Systems and Their Impact upon the Existing Television Broadcast Service, 7 F.C.C.R. 6924 ¶ 61 (1992) (Memorandum Opinion and Order).

280. While the distinction between information services and communication services has proved insufficiently clear to remain the organizing premise for telecommunications regulation, it is useful as an aid in discussing regulation. This article uses "content" to describe activities and information having a significant amount of authorship and traditional publisher relationship, and "conduit" to describe activities and information services having little to do with content.

281. See generally Angela J. Campbell, *Political Campaigning in the Information Age: A Proposal for Protecting Political Candidates' Use of On-Line Computer Services*, 38 VILL. L. REV. 519, 542-44 (1993) (providing an overview of First Amendment principles relating to must-carry, and right-of-reply regulation); Note, *supra* note 1, at 1095 ("Regardless of the appropriateness of content-based regulations, significant problems will arise in their actual implementation" in the NII context).

ment even though it has an impact on communication of content, a mandate for compatibility of content is, in effect, a prohibition on incompatible expression. That mandate would raise significant First Amendment concerns.²⁸²

The interoperability and competition goals together suggest a major effort to reinvent the common carrier concept. The traditional implications of common carrier status—detailed regulation of entry and exit, price regulation, highly specific accounting and recordkeeping mandates, and limited tort liability for injury to traffic—are in disfavor. On the other hand, a redefined access-entitlement idea focused on ensuring universal access, interoperability, and interconnection of parts of the infrastructure may be attractive.²⁸³ While there is a body of theory and opinion supporting the proposition that markets will adequately assure access to the infrastructure without the need for legal obligations like common carrier status, empirical evidence suggests the contrary. Almost no commercial information providers connect with each other, except for rudimentary e-mail exchange. Recently, the Commercial Internet Exchange (CIX) declined to handle traffic to and from upstream and downstream networks who were not members.

B. Summary of Starting Points

While the details of a new access-entitlement concept can be worked out only after a broadly based dialogue, the following principles are good starting points. The new access rights should:

- impose interconnection obligations;
- impose interoperability obligations; and
- require a service provider who rejects a request for service to justify the rejection.

However, such access rights should not:

- require any governmental pre-approval for offering any service or entering any market; or

282. See *Turner Broadcasting Sys., Inc. v. FCC*, 114 S. Ct. 2445, 2471-72 (1994). In that case, the United States Supreme Court invalidated a lower court decision upholding cable television must-carry rules. *Id.* at 2451. The Court remanded for development of a better record on whether the survival of local television was jeopardized by unrestricted cable television activity and whether there were less restrictive means of achieving governmental interests in assuring an outlet for local broadcasting. *Id.* at 2471-72. The Court's analysis illustrates a First Amendment approach to weighing justifications for regulations that burden communication.

283. Access rights and universal service issues are harder to distinguish in an Internet-like NII than in preceding commercial technologies. In the Internet, every consumer of information is a potential supplier. Thus, universal service, traditionally considered in the context of telephone service where consumers are beneficiaries, now has implications for producer access to channels of distribution, because the end users are also potential producers. Nevertheless, this article addresses access among providers of information and services and does not consider the important and difficult question of how to assure universal service to consumers.

- require adherence to any particular protocol or standard.

CONCLUSION

So far, the NII has been relatively free of legal claims by one entity to access facilities or services provided by another. The history of communications law and the law regulating other infrastructure industries such as railroads, however, suggest that the NII will experience access-right controversies in the near future. Several sources of access-rights law exist, including contract, statutory and common law common carriage, and antitrust principles. However, all of these doctrinal sources have important limitations— some internal, and some externally imposed by constitutional First Amendment and property privileges.

Some traditional legal doctrines are not very useful sources of access rights for the NII. The law of statutory common carriage is too detailed and rigid. Contract and antitrust doctrines are unlikely to have force in the usual NII structures. There is, however, potential for common law common carriage law to evolve to meet particular disputes over access. Collective negotiation of standard service terms could be effective in the contract regime. Further, antitrust essential facilities doctrines may offer useful techniques for mandating access to governmental information. Beyond that, legal intervention is likely to require statutory action. However, statutory action may be unnecessary where competitive market forces are sufficient to ensure access to the infrastructure. With respect to parts of the infrastructure where legally mandated access is appropriate, such a mandate should be narrowly tailored and limited to addressing interoperability and compatibility concerns.

Both sound policy and constitutional law militate against granting access entitlements beyond those expressly agreed to by both parties, except when competitive alternatives are lacking. In other words, only those entities with monopoly power should incur legally imposed duties to provide access. The NII architecture, assuming that it uses the Internet as a starting point, may produce monopoly power only with respect to certain backbone routers, name servers, and other “white pages and yellow pages” type services handling governmental information through exclusive arrangements. In those areas, some type of externally imposed access duty may be appropriate.

More broadly, it may be appropriate to impose interoperability obligations on entities providing transport. However, any such obligation should be functional rather than technical and should avoid elaborate pre-approval mechanisms. Finally, entities that hold themselves out as serving everyone without discrimination should be held to their commitment; however, the best legal regime for doing this is contract law rather than statutory or administrative regulation.

