1996

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John Thorne
Michael K. Kellog
Peter W. Huber
Jeffrey A. Wolfson

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Federal Broadband Law

by John Thorne, Peter W. Huber, and Michael K. Kellog
Little, Brown & Company, Boston, MA, 1995
$145.00

Reviewed by Jeffrey A. Wolfson[*]

February 13, 1996


I. Introduction

II. Discussion

A. Chapter 1 - Introduction

B. Chapter 2 - Broadband Media

C. Chapter 3 - The Powers of the FCC

D. Chapter 4 - The Franchise

E. Chapter 5 - Common Carriage

F. Chapter 6 - Pricing
III. Conclusion

I. Introduction

The authors of this book have brought together a vast and varied array of experience. Mr. Thorne is the Vice President & Associate General Counsel for Bell Atlantic; Mr. Huber is a Senior Fellow at the Manhattan Institute for Policy Research; and Mr. Kellogg is a Partner at Kellogg, Huber, Hansen & Todd.

A reader will find the occasional use of technical jargon, such as "domsats" (domestic satellites), "coax" (coaxial cable), and "syndex" rules (syndicated exclusivity rules to protect syndicated, non-network programming) to be somewhat confusing. "Telcos" and "cablecos" are telephone and cable companies, respectively. Overall, however, technical jargon is well explained for such a comprehensive look at the high-tech telecommunications field. After defining the "telecosm" as the universe of telecommunications and computers, the text moves into a comprehensive technical, regulatory, and legal analysis of the telecosm's short- and long-term future.

II. Discussion

A. Chapter 1 - Introduction

The Introduction provides a taste of the detail and breadth of what the authors have included in the book. They note that the present state of the law "is a mess" and seems "to have emerged from a sausage factory operated by a fractious band of intoxicated butchers." The unavoidable result is a dense, 827-page book which the authors believe is necessary to give this subject the complete treatment. For example, a reader will quickly become acquainted with two basic technological differences: wired and wireless communications. Wired technology uses a wave guide, or wire, and is typically comprised of metal or fiber-optic glass which sends more private signals along a specified path. Wireless technology, on the other hand, uses radio waves to broadcast more publicly at varying strengths in three dimensions. Thus, wireless technology simultaneously reaches more people than wired communications. Assorted technologies, including satellite, telephone, cable, radio, television, and microwave use different combinations of communication methods and varying bandwidths to rapidly communicate increasing amounts of information. As users have different
technological needs and the regulatory scheme is constantly changing, the future path of telecosm is expanding unpredictably.

The authors predict that "tomorrow's telecosm will contain a 'network of networks,' an intricately interconnected matrix of wireless, satellite, copper, coaxial, and glass." They believe the Internet illustrates the telecosm architecture of the future, where increasing competition and decreasing regulation will lead to hybrid technologies bound together by layers of networks. From a pure engineering efficiency standpoint, the population density and geography, along with other similar factors, will affect the outcome. For the time being, however, there is a regulatory jungle blocking a more efficient market.

The telecommunications industry is governed by many overlapping and superseding statutes, many of which were directed at the state of the art technology of previous generations. They include the Wireless Ship Act of 1910, the Radio Act of 1912, the Radio Act of 1927, the Communications Act of 1934, the Communications Satellite Systems Act of 1962, the Cable Communications Policy Act of 1984, the Cable Television Consumer Protection and Competition Act of 1992, and the Children's Television Act of 1990. These are the primary federal statutes controlling the telecommunications field, but case law and regulatory rulings are also important, and the authors have conveniently provided cites to the relevant law. The book explores many of the legal regimes applying to this field, including the lability of broadcasters and common carriers, taxation, franchising, Fifth Amendment takings law, cross-ownership rules to prevent multi-media monopolies, vertical integration restrictions, copyright protection for content, and First Amendment free speech law.

B. Chapter 2 - Broadband Media

Chapter Two, entitled "Broadband Media," explores the distinctions between wired and wireless media and the technology that is shaping their current and future uses. The wired media began not with a bang, but with the pulse of Samuel Morse's electronic telegraph and Alexander Graham Bell's telephone, while G.M. Marconi developed a wireless device based on the works of James Clerk Maxwell and Heinrich Hertz. The first Morse-code telegraph operated at about three characters per second, or at twenty-four bits per second (bps) in today's measurements. From the telegraph onward, the capacity to transmit information has increased, and is expected to continue increasing, at exponential rates. Today, an uncompressed color television picture requires roughly 100 Mbps, approximately four million times the rate of the primitive telegraph.

As for the future, the authors believe that glass, "the most capacious broadband medium operating today," will become the mainstay of telecommunications due to continuing and rapid increases in the carrying capacity of fiber-optic cable. Recent technologies discussed in the book include low power television (LPTV); multi-point distribution service (MDS); multichannel, multi-point distribution service (MMDS); and local multi-point distribution service (LMDS). One new technology, the Direct Broadcast Satellite (DBS), has rapidly expanded since 1993 due to a minimum of regulatory restraints. DBS is made possible by compression technologies which is the use of mathematical algorithms to reduce the amount of information required to describe and later transmit an image, document, or sound. This technology has also spurred growth in existing technologies such as copper and copper-aluminum coaxial cables, in addition to fiber-optic cable. For instance, digital compression permits DBS to deliver over 100 television channels nationwide, far more than the present capacity of 32 channels.

Rapid advancements in computer technology have enabled phone networks and satellites, for instance, to optimize the carrying capacity already in place. Computers are also an invaluable aid in improving compression technology. Thus, 28.8 Kbps modems can achieve rates that are effectively several times faster...
by applying compression algorithms. Additional advances to the telecommunications structure constantly arise from deployment and enhancement of two-way broadband capabilities in existing networks. Interactive video data services are one example of this, as is the long-awaited "video dialtone" that would supply a video telephone link. Some phone companies in this country presently offer residential customers ISDN, which supplies rapid modem-like communication capability. The authors imply that this is a very limited technology, indicating that future networks will be connected by more advanced technologies currently in use. [27]

{9} One interesting and persuasive theory set forth is that asymmetric networks will dominate in the future. [28] The authors explain that a broadband line into a residence, coupled with a narrowband line back to the service operator, will become the norm. The reasoning is that a residential user will require vast information from service providers in the form of movies, on-line public records, stock quotes, live television, etc. On the other hand, the user will send out only modest amounts of information in the form of viewing choice or information retrieval selection. Since most people run 'information deficits' by taking in more than they create, it is unnecessary for most private residences to have equivalent outward-bound broadband capabilities. [29]

C. Chapter 3 - The Powers of the FCC

{10} "The Powers of the FCC" is the title of Chapter Three. The Federal Communications Commission (FCC) is the preeminent regulator of broadband communication in the United States, with its primary authority stemming from the Communications Act of 1934. [30] Satellites are regulated both domestically by the FCC and internationally by the International Telecommunications Union (ITU). [31] The FCC has explicit powers to regulate common carriers. Common carriers traditionally were subject to tariff schedules and were not permitted to control content. The FCC's powers also include regulation of broadcasters, which traditionally controlled content sent to the public at large. The FCC also has powers implied from the statutory language to expand its ancillary jurisdiction. Without such ancillary jurisdiction, the FCC could not regulate common carriers acting partly as broadcasters (by carrying channels with their own content). Nor could it regulate broadcasters acting partly as carriers (by sending content to specifically targeted users, e.g. by pay television or cable subscribers). The regulator's problems stem from the technological advances described in Chapter Two, which are beyond those envisioned at the enactment of the Communications Act of 1934. This lag in the enactment of laws, coupled with the rapid advances in technology, is partly responsible for the legal "sausage factory."

{11} The definition of "broadcasting" in the Communications Act of 1934 has been the subject of much litigation. Much of the case law has focused on the definition of the "public," [32] and whether subscription or pay television should be considered broadcasting--which it is presently not. [33] Cable television also slipped through the regulatory cracks for many years. It could not be classified as a "broadcaster," due to the fact that it used wire and thereby limited the possible audience to less than the general public. Case law eventually forbade the FCC from classifying cable as a common carrier. [34] The lack of legislation regulating cable led to the enactment of the 1984 Cable Act. [35]

{12} Certain new technologies fit within the original 1934 Communications Act framework. For regulatory purposes, satellites are simply classified as "radio stations" that happen to be further off the ground. However, even some types of satellites are not classified as broadcasters. One example is the DBS signal, which is delivered straight to a particular user rather than being broadcast to the "public." Chapter Two discusses these issues in great detail.

{13} The other major legal issue is federal versus state jurisdiction over various aspects of
telecommunications. The authors point to several jurisdictional maps used in different situations (1) the 50 states, (2) the 164 "local access and transport areas" (LATAS) that arose from antitrust litigation, (3) county maps, which usually control cable franchises, and (4) 50-mile radius extensions from licensed broadcasters. [36] Deciding which map to use for which telecommunications technology creates additional difficulties as regulators try to obtain a piece of the tax revenue from licensing and franchising. This generally leads to a regulatory structure where markets grow in different directions, and where engineering and economics are not the primary factors. [37]

{14} Some of these jurisdictional answers are found in, or implied by, the Communications Act of 1934, while others are constantly litigated in the courts. Federal broadcast regulation under the Act preempts state wireless broadcast law. The authors believe FCC jurisdiction and frequency allocations are no longer as necessary as they were in 1934, as technology permits greater control of broadcasts with a corresponding decrease in interference problems. [38] Additionally, the 1984 Cable Act has helped enumerate certain FCC powers while leaving to the states certain traditional areas such as libel, slander, obscenity, incitement, invasion of privacy, and false or misleading advertising. These issues frequently arise when intrastate communications are involved, especially when the technology is part of an interstate capability. Needless to say, many issues in this area are unresolved and remain ripe for future litigation. For this reason, practitioners in this field would be wise to read Chapter Three carefully.

D. Chapter 4 - The Franchise

{15} Chapter Four surveys "The Franchise," beginning with the distinction that prior restraint, from franchises to licenses to permits, is standard among non-print media. The authors argue that although the First Amendment should probably apply with equal force to electronic media acting as the press, it typically protects only paper and ink. [39] Presumably, the First Amendment is being read to include only print media in its definition of "press," leaving all improvements in information dissemination technology unprotected by the First Amendment simply due to their more recent development. [40] This reviewer finds it interesting that, while much of the U.S. Constitution has been dynamically interpreted, as a generalization it appears that the present-day First Amendment interpretation of the "press," along with the Seventh Amendment right to a jury trial, remain firmly rooted in 1791. Furthermore, if First Amendment protections are statically interpreted to apply only to the written press, the potential replacement of newspaper by new electronic media would curtail a significant portion of First Amendment protection.

{16} The authors suggest that the government regulates non-print media primarily because of (1) physical scarcity of the wireless spectrum, (2) natural monopoly theory, such that money would be wasted installing duplicate sets of wires, and (3) desire to promote price averaging and universal service, where a monopolist could more easily be forced to charge the same average price to all, forcing low-cost users to subsidize high-cost users. [41] Another justification given for pervasive regulation of the broadcast spectrum is that because this mode of expression is not open to everyone, and because only a limited fraction of applicants may obtain licenses, the government must regulate them as public trustees. [42] Nonetheless, the government has been gradually loosening the regulatory reigns, i.e., permitting competition among inter- and intrastate telephone services. [43] This is partly due to the fact that "satellites and cable have since shattered the oxymoronic notion that the mission of broadcasting is to keep information close to home." [44] Franchisees, of course, still must concern themselves with the federal antitrust laws under the Sherman and Clayton Acts. In sum, the authors propose that property rights and anti-trespassing rules regarding spectrum usage are more desirable than licenses. [45]
Chapter Five examines "Carriage." The basic principle of communications common carriage is fairness. Everyone may obtain service from the carrier at preannounced rates. In exchange, the common carrier is insulated from libel, copyright infringement, or other misuses of its medium. The public also benefits from other conditions imposed on common carriers, including "must carry," "equal access," and "public access" provisions.[46] The equal access provisions are a recent development that force certain common carriers to provide access to other common carriers.[47] Satellites, for instance, currently have the ability to choose operation as a common or private carrier or a broadcaster, although under the 1992 Cable Act they are still subject to some minimal regulation such as political broadcasting rules.[48]

On the other hand, the Communications Act of 1934 specifically forbids the FCC from imposing common carrier duties on broadcasters so as to prevent monopolization.[49] In spite of this, carrier duties, such as the fairness doctrine and equal time rules have been imposed upon broadcasters. These principles require ample opportunity for the free and fair competition of opposing views for the public interest when applied to political messages and to other important public issues. Although the FCC has frequently reversed itself over use of the fairness doctrine, it was officially abandoned in 1981 as unnecessary in light of the market reality at that time.[50] Equal time rules are a special-purpose fairness doctrine: they are intended solely for political candidates and broadcaster editorials supporting a candidate, and have been codified in Section 315 of the Communications Act of 1934.[51]

Cable has been regulated as a common carrier since "must carry" rules in the early 1960s forced cable companies to carry their broadcast competitors.[52] When case law held the "must carry" rules to be contrary to the First Amendment, the FCC responded with a scaled back version that was eventually struck down again in 1987.[53] Finally, the 1992 Cable Act reinstated mandatory "must carry" rules, forcing cable operators with fewer than thirteen channels to carry at least three local broadcast stations and those with more than twelve channels to devote up to one-third of their channels to the broadcast signals.[54] Other common carrier type rules imposed on cable operators have included public access, leased channel rules, the fairness doctrine, and equal time rules. These are all limited to some unclear extent by the First Amendment. The very issue of whether carriers have any constitutional rights, and the extent of those rights, is likely to reach the Supreme Court as carriers attempt to secure rights to broadcast their own programming rather than that of their broadcast competitors.[55]

The final issue examined under Chapter Five of the book is Fifth Amendment takings. These claims are often alleged when the FCC orders the setting of low prices or orders access for competitors. Although courts have been schizophrenic in this area, the authors maintain that "[i]t is equally clear that the demands for 'channels,' 'access,' and 'interconnection,' are demands for 'property' in the Fifth Amendment sense of the word. . . . No one doubts that the Fourth Amendment applies to cyberspace. The Fifth Amendment surely does too."[56] This issue may soon be resolved by an unhappy carrier forced to hand over access to its bandwidth. On the other hand, as competition increases due to the decrease in regulation, a concomitant reduction in "takings" may moot comprehensive treatment of the Fifth Amendment issue.

The ultimate upshot of all the advances in telecosm technology is that common carriage is difficult to keep well-defined. The result is that new broadband technologies, like cable and many other existing technologies, will be subjected to the hybridized muddle of regulations just like a broadcaster or publisher with some common carrier duties or a common carrier capable of broadcasting.[57]

Chapter Six examines "Pricing."
Chapter Six considers "Pricing" as a means to control monopoly or promote universal service. The problem, as expected, is that different broadband media are subject to varying degrees of price regulation. The authors analogize the various means of distributing a film with the statement that "regulation of the price of Pretty Woman will change as fast as one can walk the streets in the red-light district of the electronic metropolis."[58] In general, however, pricing regulation is imposed on either the terminal equipment, the conduit, or the content. Revenues are typically collectable from either the above sources, advertising, a cut of sales conducted over the conduit, or any other means by which a customer may be willing to pay. It is rare to find price regulation on telephone or other terminal equipment today, as the FCC abandoned such impractical telephone equipment regulations in 1980.[59] The reasoning was that customer telephone equipment is not really a "communication" service. Cable equipment, such as the television set-top box, is one exception to the non-regulation of terminal equipment. The real difficulty with price regulation is that broadband communication requires regulation of both equipment and conduit, and the failure to regulate one aspect results in a shift in usage and costs toward that aspect.[60]

Interestingly, federal pricing policy for television broadcasting has been that the end-user should pay nothing. Instead, the broadcasters typically charge a price and make a profit through advertising. As for cable, rate regulation has been an off-again, on-again affair. After being deregulated by the 1984 Cable Act (except where subject to no effective competition), cable is presently regulated under the 1992 Cable Act.[61] Today, the FCC presumes there is no effective competition until a cable operator shows otherwise. This permits price regulation in the meantime.[62] Cable consumers will be interested in noting that the permissible rate of return for cable investment is 11.25 percent, which is the same as for telephone companies.[63] This heavy regulation creates incentives for cable programmers to focus development on unregulated non-video programming, such as per-program billing or other new product types. Satellites, on the other hand, remain virtually unregulated with respect to price.[64]

Unfortunately, the authors wait until the end of the chapter to discuss theoretically the practical limits of trying to regulate the price of fluctuating broadband technologies. This section points out that price regulation of a service requires the service to first be defined in enough detail to prevent providers from changing the price or evading the regulation by redefining the service provided. Since broadband technologies are constantly evolving, the result is that price regulation cannot remain both fair and useful over a long period of time. Of course, competition is growing as technology develops, consequently reducing the need for extensive price regulation.

G. Chapter 7 - Cross-Ownership

Chapter Seven explores "Cross-Ownership" restrictions. cross-ownership rules prevent an entity from owning distinct media due to fear of monopolization. In the telecommunications area, it is generally a "horizontal" aggrandizement of different media types capable of delivering the same message, such as common ownership of a newspaper, radio broadcaster, and cable operator. The reasons for such rules vary, including the prevention of domination, monopolization, or the obstruction of free speech. However, as telecommunications markets evolve and new competitors enter the market, the need for such rules makes less sense.

Two of the rules promulgated by the FCC are the "duopoly" and "one-to-a-market" rules. The former rule prevents ownership of two or more television or radio stations in one service market, while the latter prevents cross-ownership of a television and a radio station in the same market.[65] In economic or antitrust law terminology, these cross-ownership rules ban or limit horizontal mergers. The authors believe that the existence of such regulations, such as for the new wireless local multipoint distribution services (LMDS), initially inhibits rapid growth of new services because without such regulations the owner of an existing
One strong argument against cross-ownership rules is the example of schizophrenic lawmaking in the broadcast television and cable area. At first, the FCC banned cross-ownership of a television station and a cable system. Then, when cable systems began "importing" popular out-of-area television broadcasts, the FCC ordered the "must carry" rules to require cable systems to carry local television. This was done initially to ensure that cable would not overwhelm local broadcasters. The authors point to this example as ironic; however, they could have been less kind and called it hasty decisionmaking. From a pure efficiency standpoint, it would have been wiser to let the market develop before enacting overprotective regulations.

Another example of burdensome cross-ownership regulation is the rule prohibiting local phone carriers from expanding into video carriage, while permitting cable systems to expand into new markets by providing competing telephone services. The only rational explanation, which is not discussed in the book, is that the FCC believes that telephone carriers are a monopoly that can withstand competition, whereas the cable systems are already competitive. However, their explanation belies reality, as most cable systems are exclusive franchises. Thus, this is another unequal rule that blocks competition depending upon a company's entry point into the telecommunications world. It seems a valid question to ask why one should be penalized for beginning operations as a local telephone provider.

The First Amendment debates in this area involve the appropriate standard of review: strict scrutiny or a more lax standard. Also, there is debate over whether cross-ownership rules limit free speech more than media monopolies. Proponents of cross-ownership rules argue that as long as the government regulates to promote diversity in programming, the First Amendment is not violated. Opponents, however, argue that the First Amendment specifically bars government regulation and interference with speech and the press. The issue is essentially whether a cross-owner will add a new programming roster or whether it will act as a monopoly and drive other programmers out of business. The FCC and courts tend to favor such cross-ownership bans. The authors, however, cautiously conclude that "[p]reventing cross-ownership may prevent monopoly. It may also prevent robust and efficient competition."[68]

H. Chapter 8 - Vertical Integration

Chapter Eight provides insight on "Vertical Integration," the other fertile ground for antitrust-type regulation in the telecommunications field. The issue here, as the authors relate it, is "[o]ught one who owns a microphone be permitted to sing into it too?"[69] While the horizontal restraints discussed in Chapter Seven address relations between competitors, this chapter focuses on relationships between suppliers and their customers-typically distributors.

Vertical integration can be efficient due to reduced transaction costs, such as contract negotiations and economies of scale. This is because all transactions can be brought "in-house." Why then limit or ban vertical relationships? Such regulations are typically justified by the alternative arguments: (1) the restrained party has already relied on government powers of eminent domain to lay cable or other wires, to obtain exclusive franchises, or to gain antitrust immunity, and must be hindered from drastically impeding competition; (2) the restrained party will cross-subsidize its services by shifting unregulated costs into its regulated ones, thereby recovering a monopolistic rate of return on more than was intended by the regulation; or (3) vertical restraints, such as requiring equal access to essential facilities, are the only certain ways to prevent discriminatory operations.

The key issue here is whether market power in one service, coupled with ownership or interests in a vertically linked service, will permit monopolization over that vertically linked service, also known as
Tying will only be possible if consumers are unwilling to switch to different products, or "substitute," should such vertical monopolization occur. One historical example discussed is the film studios' development of distribution networks in the late 1910s. With control over both supply and distribution, studios were able to impose "block booking" requirements on theaters, forcing them to rent bad films along with the hits. Much litigation and other policy-making frenzy followed for decades, with the end result in 1987 being that vertical restrictions on this industry were no longer necessary.

As usual, vertical regulations are applied unevenly between the various telecommunications industries. In 1970, the FCC enacted rules that effectively prohibited telephone companies from providing cable service except for providing broadband channels to unaffiliated video programmers. In 1977, the FCC banned television broadcast networks outright from owning cable systems. In the 1992 Cable Act, Congress included "program access" provisions out of concern that cable programmers would favor affiliated cable system operators. Even more recently, after investigation by the Department of Justice, Microsoft entered a consent decree barring it from certain practices involving inclusion of undisclosed features in its software to provide special advantage to its own developers. Since the mid-1980s, the FCC and the Department of Justice have recommended repeal of the video carrying bans on telephone companies, a recommendation not yet taken by Congress. As revealed by the sampling of vertical restraints above, the rules are not equal and are not even enacted simultaneously.

As with horizontal restraints, the constitutionality of vertical restraints is questionable under the First Amendment. The Supreme Court has rejected the argument that vertical restraints can be rationalized as being consented to upon entry into the industry. As the authors indicate, the government can guarantee equality of access to private property dedicated to public uses only up to the point where a property owner is prohibited from deciding how to use her own property. Government-awarded franchises have rarely, if ever, been conditioned on the waiver of First Amendment rights. The authors close this chapter by pointing out that the "separation of content and conduit is still intellectually feasible but is increasingly impractical." By this, they appear to mean that regulators will not dole out red tape as easily in the future, as indicated by instances of relaxed ownership rules that are already occurring.

Chapter Nine is mysteriously entitled "Leviathan." Without revealing the secret, the chapter discusses some of the mega-corporations in the telephone, network broadcast, and cable industries. The authors point to much rhetoric concerning anti-"bigness" movements and Orwellian visions of seeing and controlling all. However, they note that "'deep pockets' or vast financial resources may facilitate anticompetitive conduct, but they do not make it inevitable." In general, this chapter discusses antitrust-type concerns over corporate aggrandizement and responses, such as limits on ownership of stations, the now defunct "top 50" market procedural obstacle rules, and private antitrust litigation regarding telephone companies. The irony is that some business practices appear to be changing on their own. For example, AT&T, while once subject to frequent litigation and divestiture decrees, has now voluntarily decided (as has IBM) to "self-divest" by splitting into smaller groups to enhance efficiency and gain potential tax benefits.

Other "bigness" concerns exist besides corporate size. The most important of these discussed is "patent pooling." Patent pooling most notably arose in the film industry in the early 1900s, and in the telephone industry by AT&T. Although the authors indicate that patent pooling can occur when one company acquires all the ground-breaking and improvement on a new technology, there is another definition of patent pooling that is more standard. That definition describes when competitors cross-license their patents. Balancing antitrust concerns against the antitrust exception of patents to promote technological innovation is a delicate task, and the authors assert that no coherent policy exists in this area.
As for First Amendment discussion in this area, it parallels those discussed in cross-ownership and vertical restraint regulations. The First Amendment does not bar large corporations by their size or number of customers, yet the federal government uses antitrust law to regulate large companies. The authors point out that if size were dispositive in limiting First Amendment rights, "the most effective, efficient, and popular speakers would lose their right to speak simply by virtue of their popularity. Bill Cosby would have to be silenced, because so many people enjoy what he says." Of course, Mr. Cosby is not a great example because he is not yet a corporation, to this reviewer's knowledge. However, the point is well taken: size should not be everything when determining the scope of First Amendment rights. In completing the discussion on "bigness" concerns, the authors note that "[t]he big are indeed getting bigger, but the market in which they swim is growing even faster." Overall, this chapter is the weakest link in the book. The ideas discussed here could have been eliminated and the book would still contain the full, rich detail necessary to define the telecommunications legal regime as it exists today.

**J. Chapter 10 - Copyright and Piracy**

Chapter Ten examines in detail the "Copyright and Piracy" laws limiting content usage. As advancing technology made the copying of original works of authorship easier, copyright law developed as a regime to protect the incentive to create original works. The first copyright law was the English Statute of Anne in 1710, driven by the invention of the printing press. The current Copyright Act is designed to permit application of its principles to new technologies without having to wait for Congress to adjust the statute to reflect those new technologies. The problem for the Courts and Congress today is how to provide the financial reward that protects the incentive to create, while rapidly advancing technology simplifies copying so that "[e]very television, VCR, computer display, and hard disc is a device capable of misappropriating intellectual property." The unique nature of intellectual property is that it can be replicated at little cost and used by many without reduction in value. As the authors point out, intellectual property "can be misappropriated without the owner even noticing."

In telecommunications terms, the way content ownership is established and enforced will alter consumer usage of broadband. Although copyright law in the past has tended to favor the content user, the authors believe the legal emphasis of copyright must shift to protect the "incidents of private property," or the copyright owner, as copying becomes effortless. Copyright law since 1976 has clearly protected "original works of authorship fixed in any tangible medium of expression." The copyright law grants the creator of an original work of authorship that is "fixed" the exclusive rights to reproduce the work, distribute copies to the public, prepare derivative works, and usually the rights to perform or display the copyrighted work.

Copyright law also protects specific expression based on a general idea, although the idea itself cannot be protected. Unfortunately, broadband technologies make it virtually costless for a "multimedia tailor" to alter an existing work, such as by audio sampling, video morphing, and software "look and feel" imitation, so that distinguishing the idea from copied expression becomes difficult. For example, the authors hypothesize a situation where such a "tailor" optically scans an author's text and edits the plot while keeping the author's style and vocabulary identical. Has the protected expression been copied? The problem for a copyright owner is how to enforce the property right to make a "derivative work" if it is difficult to distinguish whether the altered work is based on the expression, rather than just the idea.

The authors examine several other copyright law doctrines and statutory provisions that weaken copyright protection, and their potentially devastating effect in light of electronic and other broadband media. The "fair use doctrine," a common law doctrine from 1841 now statutorily codified at 17 U.S.C. § 107, permits use of private intellectual property by the public in certain circumstances. This doctrine permits quoting, paraphrasing, and other borrowing to a certain hazy extent. For example, the fair use doctrine makes...
the review of Federal Broadband Law possible without infringing its authors' copyright. The book also discusses compulsory licensing for sound recordings, a scheme designed to benefit the public with increased access to musical compositions, while decreasing the copyright value and ultimately the financial incentive for the author, to create more works. Another legal provision explored is non-liability for a carrier that passively retransmits content without "copying" it or exercising any control over content or selection.[86] Any editing, such as deletion of advertising, may create liability for a carrier.

{42} In the telecommunications context, the authors believe divisions between carriage and publishing are likely to blur.[87] This would create difficulties under the copyright law in determining which entities may advantageously use the carrier exemption from copyright liability.[88] Several famous cases defining the scope of "public performance" are discussed, resulting, by 1968, in a definition of "broadcast" as a "performance" while excluding "reception" from that category. This created a blanket right for cable companies to "download and retransmit programming at will."[89] Following this virtual elimination of copyright law for cable operators, the FCC attempted to recreate protections for copyright owners in the form of "syndicated exclusivity rules" and "non-duplication rules." Congress assisted in this effort when passing the Copyright Act of 1976 by forcing cable companies to pay for retransmitted programming under a compulsory licensing scheme and by defining "performance" to include both the initial showing and any further acts by which the showing is communicated to the public.[90] The 1992 Cable Act strengthens the hand of broadcasters even further by alternatively permitting them to demand carriage on local cable or prohibiting retransmission absent consent.[91]

{43} Finally, the authors discuss other laws intended to protect content from theft. Common law misappropriation, and perhaps unfair competition, protect a broadcaster in some states from signal theft by a competitor or manufacturer of equipment usable solely for piracy. The Communications Act of 1934 also prohibited interception of communications, except of those openly sent for the use of the general public.[92] Congress arguably added additional cable anti-piracy protections in a 1984 Amendment to the Act.[93]

{44} In summarizing the state of copyright law as applied to telecommunications, the authors highlight two trends in the law. The first is that "signals' may not be intercepted and retransmitted without appropriate consent."[94] This is essentially an expansion into the electronic realm of common law doctrines protecting private property. The second trend is an attack on the advanced technology used by both pirates and the telecommunications industry, i.e., satellite dishes, VCRs, and decoders. The authors suggest, however, that the latter development is frivolous, because "[b]urning down the broadband mansion to roast the piracy piglet is out of the question."[95] Ultimately, advanced broadband technologies create additional wealth to be shared by all. Content owners might boost prices to reap profits. On the other hand, the authors submit that prosperity is more likely to arrive in the form of a large sales volume slashing content prices, thereby making content affordable for the masses.[96] This reviewer suspects, however, that content for the masses will eventually pander to the masses to ensure popularity and prosperity.

K. Chapter 11 - Free Speech

{45} Chapter Eleven ties together the various threads of "Free Speech" and the First Amendment that were discussed throughout the book. The courts have created what some describe as a "First Amendment Triad," with print publishers getting the most protection, broadcasters somewhat less protection, and carriers the least protection.[97] Broadcast laws have proscribed obscene, indecent, and profane language from the beginning, typically by denying license renewals if the programming had not been in "the public interest" as required by the Communications Act of 1934.[98] Broadcasters have been forced to "settle for First Amendment Lite, rather than the more filling brew," with a variety of illogical rationales leading to schizophrenic jurisprudence for cable as well.[99]
The chapter continues on to examine speech regulation of public carriers, private carriers, and private self-censorship. The major public carrier, the United States Postal Service, used to be a flash point for debate over whether the federal mail monopoly permitted the mails to be used as an instrument of censorship to ban immoral, indecent, fraudulent, and obscene materials from the mails. Since 1945, the rule has been that any communication carried by the Post Office is protected by the First Amendment. Where the government is not involved, there is no First Amendment restriction on censorship, thus permitting a private carrier to censor all it dislikes. Yet the government often restricts free speech of carriers, such as cable, that are granted an exclusive franchise. If the grant of an exclusive franchise permits the government to limit free speech, the authors recommend instead that it is the granting of the exclusive franchise itself that should be eliminated.

A crucial benefit of high-technology broadband is that viewers may seek what they find acceptable, so that "community standards" for obscenity and indecency become defined by a group connected to a particular electronic site rather than a group of provincial residents in Imuptight City. "Communities of speakers and listeners can become completely voluntary on both sides. . . . Deviance loses its meaning when communities of like-minded are formed entirely by consent." Thus, no one can be offended unless they choose to assume the risk of being offended.

Typical government regulation in electronic speech involves programming requirements that dictate what content must be promoted, rather than banning any particular content. Where funding is provided by the government, even greater control over broadcasters is exercised over speech, such as rules promoting "minority and diverse audiences" and "objectivity and balance" in programming. As is characteristic of telecommunications regulation, the rules differ for each technology. For example, direct broadcast satellites have no programming requirements other than political broadcasting rules. The trend here is clear; the FCC's reliance on market forces solidified only recently, leaving more recent technologies like DBS with fewer regulatory burdens.

Another notable First Amendment issue surveyed is commercial advertising. Various advertisements have received various treatment. Fraudulent advertising is banned outright, with no constitutional concerns. Broadcasters and eventually cable operators were required to indicate sponsorship identification. Although the loophole of cameras focusing on printed tobacco advertisements at athletic games has recently been criticized, tobacco advertising on electronic media has technically been banned since 1969. The liability of on-line service providers who advertise without editing content was also discussed. The successful operation of these services as an electronic forum is completely dependent on limiting their liability. The problem stems from the blurring of the roles of common carrier and publisher. Movement away from either pigeonhole creates either additional liability or loss of editorial discretion. This issue is also seen in the cable context, where cable operators may have "no general power to control the content of programming" while at the same time they are required by a franchise contract to avoid any "obscene or otherwise unprotected programming." The authors survey several other timely First Amendment topics in this chapter, such as indecency by carrier or telephone, violence, the "V-Chip" for viewer self-censorship, and political speech and campaign spending limits.

Chapter Twelve closes the book by exploring the utopian vision of "Universal Service" for telephone, television, cable, and eventually video dialtone and digital telephone. The authors suggest that a major flaw in this universal service premise is that attempting to provide the same service for everyone results in a mediocre product with limited capabilities. This is somewhat analogous to broadcast content that panders to
the masses. As with telephone and cable, the authors state that a broadband service must be provided to some consumers to test for a basic level of service people will actually use. The other important aspect of universal service is price averaging, where low-cost users pay higher rates to subsidize high cost users and where everyone pays a smaller share of the initial fixed costs. This is typically accomplished through franchise regulations or economic imperatives to ensure that service providers connect wires to both rich and poor homes alike.

Rather than use government regulation to promote an inefficient and costly broadband that few will want, the authors argue, the market should be left alone. The authors examine previous government delay of radio, pay television, and cable development, and imply that the government is likely to use regulation to similarly hinder rapid development of new broadband technology to protect existing technologies. Heavy lobbying by existing telecommunications interests for regulatory protection from new technologies hinders rapid market development as well. The authors posit that limited regulation will permit competition to create universal service. Although federal law does not mandate universal service, earlier regulation and local franchising have promoted cable so it is now wired into 97 percent of all television owning households in the United States. Telephone service exists in 93 percent of all households in the United States. As for satellite dishes, the federal government has promoted open entry for new competitors by superseding state attempts to promote universal service via exclusive franchises. One recent technology, direct broadcast satellites, has received the FCC's blessing to develop into a universal service with minimal concern and regulation regarding potential impact on existing cable and broadcast universal service.

As for universal broadband into every home, the authors foresee "a government policy to promote more universal supply of more bandwidth." This will require significant amounts of money, for which all technologies must pay equally if equity is to be maintained. one fairly good suggestion is "a tax on users or providers of telecommunications equipment and services, analogous to the gasoline tax used to fund federal highways." From an engineering standpoint, universal service could be achieved most efficiently by "serv[ing] urban consumers by wire, and rural ones by wireless." Although the authors acknowledge that current rules against cross-ownership may preclude this vision, new legislation discussed briefly below could rectify this situation.

The book closes by describing two possible broadband paths. One path has the government using price averaging, cross-subsidy, redistribution, monopoly and exclusive franchises, and a whole slew of other regulations to control and hinder broadband development. In the words of one famous lyricist, broadband is "like a river that don't know where it's flowin'"--likely to chart a course that cannot be meticulously planned by regulators. The other, and more likely, path is that competition will rapidly drive prices downward as technology improves. To promote competition, the authors conclude, the government should instead use expanded access requirements to prevent discrimination and require services to be offered "to all potential customers at the same price."

III. CONCLUSION

*Federal Broadband Law* covers a wide variety of telecommunications technology and law, including the development of various broadband technologies, the legal framework permitting FCC regulation, exclusive franchises and licenses, and common carriage. It also discusses the difficulties associated with pricing a wide array of equipment and services, vertical integration and horizontal cross-ownership restraints, copyright law, and the impact of each on First Amendment rights. Yet with all the detail, the book still remains reasonably accessible to the interested layperson. The book is well organized for the most part and worth the time for those without knowledge that are interested in learning about telecommunications language and law. It will also serve the experienced "telepractitioner" as a handy guide book containing references to the statutes and
many of the regulations and treaties most relevant to telecommunications law.

{55} One leaves the book with the big picture view that the fragmented rules and regulations of the telecommunications field are a nightmare for the regulated industries and a boon for those with the biggest influence on legislation. This reviewer would suggest that the FCC and Congress institute periodic review of regulations to ensure that those regulations, while well planned to protect certain telecommunications industries in their infancy, do not create an unfair advantage or a restrictive nightmare once that industry has matured. Furthermore, this reviewer hopes, as the authors seem to conclude, that merging technologies and greater competition will promote a more even regulatory playing field and perhaps even decrease telecommunications regulation overall where competition thrives.[131]

{56} Pending legislation before Congress may provide the most radical overhaul of telecommunications law since the 1934 Communications Act. Key features of this legislation include loosening of ownership restrictions, partially eliminating video and long distance service bans on local telephone carriers, deregulating cable pricing, and implementing some version of indecency-type content restrictions.[132] With the exception of increased content regulations that may violate the First Amendment, these proposed features appear to be a step in the direction of reducing governmental intrusion into the burgeoning telecommunications industry, and another notch in the predictive powers of the authors of Federal Broadband Law.

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Footnotes

[*] Jeffrey Wolfson is an Associate with the law firm of Pennie & Edmonds in Washington, DC. He attended the George Washington University Law Center, receiving his J.D. degree in 1995. He is also a member of the Maryland State Bar Association.

Mr. Wolfson wishes to thank Katoyun Jaffari, Douglas Klein, and John Mulgrew for their helpful comments and suggestions. The views expressed herein are not necessarily those of Pennie & Edmonds. ©1996 Jeffrey A. Wolfson.
<picard@capaccess.org>

[**]NOTE: All endnote citations in this article follow the conventions appropriate to the edition of THE BLUEBOOK: A UNIFORM SYSTEM OF CITATION that was in effect at the time of publication. When citing to this article, please use the format required by the Seventeenth Edition of THE BLUEBOOK, provided below for your convenience.


[3] Id., § 1.2.
The authors classify "broad" as about 50 million bits per second, or "five complete newspapers a second, a compact disc every minute and a half, or five simultaneous channels of color television." Id. § 1.2.2.

This review, for instance, is being sent by narrow band wire transmission, unless, of course, the reader happens to be accessing an on-line service provider via a narrow band wireless cellular phone.

THORNE ET AL., supra note 2, § 1.2.3.


Radio Act of 1912, ch. 250, 37 Stat. 199 (1912), cited in THORNE ET AL., supra note 2, § 3.2.2.


See infra notes 39-57 and accompanying text.

See infra notes 65-68 and accompanying text.

See infra notes 69-76 and accompanying text.

See infra notes 77-96 and accompanying text.

See infra notes 97-114 and accompanying text.

See THORNE ET AL., supra note 2, § 2.2.

Id. '2.3. Each character--a letter, numeral, or symbol--can be represented by a unique arrangement of 8 bits.

Many of today's modems communicate over standard phone lines at 28.8 Kbps. Id.

One fiber-optic strand can carry 40,000 voice calls or 25 uncompressed color television channels. Id.

Id. § 2.5.1.
[26] See id. §§ 2.5.1, 2.6.2 (indicating how compression will vastly improve carrying capacity of DBS technology).

[27] Id. § 2.7.3.

[28] Id. § 2.7.4.

[29] Id.

[30] Id. § 3.1; see supra note 10.

[31] THORNE ET AL., supra note 2, § 3.1.

[32] See, e.g., Functional Music, Inc. v. FCC, 274 F.2d 543, 548 (D.C. Cir. 1958) (noting that because the services in question provided programming "of interest to the general radio audience" that would suffice as broadcasting to the public).

[33] THORNE ET AL., supra note 2, § 3.3.2(iv). See, e.g., National Ass'n for Better Broadcasting v. FCC, 849 F.2d 665 (D.C. Cir. 1988) (upholding the FCC determination that subscription television and direct broadcast satellite services are not "broadcast services").

[34] Id. § 5.5.5; see, e.g., Midwest Video II, 440 U.S. 689 (1979), aff'g Midwest Video Corp. v. FCC, 571 F.2d 1024 (8th Cir. 1978) (ruling that the FCC lacked authority to force cable into common carriage status).


[36] THORNE ET AL., supra note 2, §§ 1.3.2, 3.3.

[37] See id. § 3.4 ("An unregulated market will pursue the efficient solution. A regulated one will accept much more inefficiency in pursuit of the path of least regulatory resistance.").

[38] See id. § 3.1.

[39] Id. § 4.1. The First Amendment states that "Congress shall make no law . . . abridging the freedom of speech, or of the press. . . ." U.S. CONST. amend. I.

[40] See, e.g., Michael D. Shear, Free Speech Gets Tangled in the 'Net, WASH. POST, Oct. 23, 1995, at A1, A7 (discussing the disciplining of a Virginia Tech student for hate mail he posted on the Internet and the implications of the First Amendment in this situation); Freedom of Net Speech, WASH. POST, Oct. 27, 1995, at A24 (editorial discussing the legal implications of electronic media and the First Amendment and concluding that free speech would be "good for the Internet for the same reasons it's good for the real world.").

[41] See THORNE ET AL., supra note 2, § 4.2.

[42] See id. § 4.6.3.

[43] Id. §§ 4.4.2-4.4.4. For example, the 1992 Cable Act expressly prohibits exclusive franchises. Id. § 4.5.1. Carriers of telephone, for example, are more likely to start contesting franchises that have the effect of exclusion as they attempt to offer video dialtone and cable-type services over phone lines. See id.
The authors proclaim that "[f]ranchise' now is a euphemism for absence of freedom, barriers to entry, taxation, and other political controls . . . " Id. § 4.1.

See id. § 5.2.

For example, if a local telephone carrier has wired up the homes of Mia and Kim, a wireless cellular service carrier can now demand access to the local lines--for a fee--to connect with them.

See also Quincy Cable v. FCC, 768 F.2d 1434 (D.C. Cir. 1985) (striking down must carry rules as a violation of cable's First Amendment rights).

See id.

See id. § 6.3.1.

For a discussion of cost allocation, see id. §§ 6.8.2-6.8.3.


THORNE ET AL., supra note 2, § 6.6.3(ii).

Id. § 6.6.3(iii).

Id. § 6.7.

Id. § 7.3.

Id. § 7.6.
[68] Id. § 7.7.

[69] Id. § 8.1.

[70] Id. § 8.3.2.

[71] Id. (noting that "[b]y 1992, the studios controlled about 11 percent of the 25,000 movie screens nationwide.").

[72] Id. § 8.5.

[73] Id. § 8.6.

[74] Id. § 9.1 (citations omitted).

[75] Id. § 9.7.

[76] Id. § 9.8.

[77] Id. § 10.1. The authors consider the printing press the "first broadband machine." Id. § 10.3.

[78] See 17 U.S.C. § 102(a) (1994) (stating that "[c]opyright protection subsists . . . in original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device." (emphasis added)).

[79] THORNE ET AL., supra note 2, § 10.1.

[80] Id.

[81] Id. § 10.2.


[85] THORNE ET AL., supra note 2, § 10.11.

[86] See 17 U.S.C. § 111(a)(3) (1994). This liability exemption does not apply to retransmission of signals intended only for some limited slice of the general public, such as pay television. See THORNE ET AL., supra note 2, § 10.3.9.

[87] THORNE ET AL., supra note 2, § 10.4.4.

[88] See id. § 10.4. For example, satellite carriers are perceived as "intermediate carriers" between broadcasters and cable rather than as passive carriers, so they do not qualify for a passive carrier=s copyright liability immunity. Id. § 10.4.2. Until 1999, however, there is a special exemption for satellite operators in the Satellite Home Viewer Act (SHVA) permitting such immunity upon payment of a compulsory license fee. Id. § 10.4.3.

[89] Id. § 10.6.2.
The Supreme Court's decision in Turner Broadcasting System, Inc. v. FCC, 114 S. Ct. 2445 (1994), contains a "tangle of concurrences and dissents," which the authors further describe as only a plurality decision that uses a different standard of review for cable than for broadcasters based on "economic scarcity." Id. § 11.2.4.

See id. § 11.2.5(i).

See id. § 11.2.7.

See id. § 11.2.5(ii).

See id. § 11.13.

See id. § 11.4.

See id. § 11.5.

See id. § 11.5.2.

See id. § 11.5.4.

See id. §§ 11.5.4-11.5.5.

Id. § 11.8.2.

Id. § 11.8.2.

Id. § 11.8.5.

Id. § 11.8.9; see also Marc L. Caden and Stephanie E. Lucas, Comment, Accidents on the Information Superhighway: On-Line Liability and Regulation, 2 RICH. J.L. & TECH. 3 (1996) (discussing two relevant cases and expounding further upon this theory). A major libel suit against Prodigy Services, Inc., regarding its liability as a publisher rather than an on-line carrier was just dropped. Elizabeth Corcoran, $200 Million Libel Suit Against Prodigy Dropped, WASH. POST, Oct. 25, 1995, at F2.
See, e.g., Ann Landers, WASH. POST, Oct. 25, 1995, at B8 (including letters from U.S. Representative Edward J. Markey and FCC Chairman Reed E. Hundt, indicating the social import of these issues).

See THORNE ET AL., supra note 2, § 12.2.

Id. § 12.1.1.

Id. § 12.1.2.

Id.

Id. § 12.1.3.

See id. § 12.2.1 ("The Commission's preoccupation with radio delayed the arrival of television. . . . Then cable arrived as an alternative to broadcast, and the Commission did much to obstruct this more capacious, landline alternative too.").

See id. § 12.3.

Id. § 12.5.1.

Id. § 12.3.4. Thus, over 4.1 million homes had satellite dishes as of August 1993. Id. § 12.3.5.

Id. § 12.4.

Id. § 12.6.

Id. § 12.6.1.

Id. § 12.7.1.

Id. § 12.9.

Id.

See, e.g., id. § 11.5.6 ("The growth of capacity dedicated to carrier-like services should rapidly assuage regulatory concerns about program mix."). Id.