

**DISTANCE LEARNING IN LEGAL
EDUCATION: IMPLICATIONS OF
FRAME RELAY VIDEOCONFERENCING**

HELEN LESKOVAC

Reprinted from
Albany Law Journal of Science & Technology
Volume 8, Number 2, 1998
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DISTANCE LEARNING IN LEGAL EDUCATION: IMPLICATIONS OF FP&AME RELAY VIDEOCONFERENCING

*Helen Leskovac**

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*Helen Leskovac, J.D., LL.M., a graduate of the University of California- Davis School of Law and Yale Law School, served as a consultant to the Albany Law School Science & Technology Law Center Project from 1997 until 1998. Currently, Ms. Leskovac is the Government Documents/Reference Librarian at Rutgers University School of Law - Newark.

I would like to thank Alex Seita, Edward Brennan, and Robert Begg, of Albany Law School who spent many hours discussing videoconferencing applications in legal education, Carol Roehrenbeck and Steven Perkins of the Rutgers University Law School Library, who respectively critiqued and provided valuable research, and Dean Thomas Sponsler, also of Albany Law School, for his interest in law school applications of frame relay videoconferencing. I am especially grateful to the Sage Colleges and Albany Medical College faculty and administrators who so generously gave of their time and expertise in demonstrating frame relay videoconferencing equipment and discussing its applications in the first public network to use this technology, the Adirondacks Area Network. Specifically, I would like to thank Dr. David Bonner, Associate Dean Deidre Zarillo, and Dr. Jackie Ford of the Sage Colleges and Dr. Henry Pohl and Mr. Daniel Maloney of Albany Medical College.

I. INTRODUCTION

Although videoconferencing is widely used in business to educate, train, and conduct meetings¹, only recently has it been adopted by academia². Throughout the United States, and abroad, it is becoming increasingly commonplace for students to take courses and even enroll in degree programs via broadcast television, telecommunications, and computer technologies. Of all the distance learning technologies available, group and desktop videoconferencing³ appear to offer the closest approximation to an actual classroom experience.⁴

Significant issues of quality, reliability, and cost have put video-conferencing out of reach for much of financially pressed academia. Four years ago, however, computer scientists at the

¹ See, e.g., Mark Todd, *Virtual Meetings Via Video Find Validity*, 12 TRIANGLE Bus. J. (Raleigh, N.C.), May 16, 1997, at 3 (discussing the use of videoconferencing to exchange information for a lower cost by businesses in Research Triangle Park); Nick Wreden, *Long Distance Lessons-Corporate America Is Finding That Distance Learning Is No Longer a Frill-It's a Ticket to Survival*, Comm. WK., Aug. 18, 1997, at 41 (discussing the benefits of videoconferencing to train corporate employees).

² When funding is available, higher education is turning to technologies which support videoconferencing. Boise State University, for example, with funds from the College of Technology, the State of Idaho, and the Economic Development Administration, is spending \$1.1 million on videoconferencing equipment to link the University with "rural and under-served Idaho school districts." *CLI Wins \$1.1 Million Contract to Deliver Distance Learning Solution to Boise State University*, Bus. WIRE, Feb. 3, 1997. Moreover, the Illinois Video Network connects state agencies and institutions at 39 sites. *Connecting Illinois: How One State Shares Info*, III Am. CITY & COUNTRY, May 1, 1996, available in 1996 WL 8981164.

Videoconferencing technology is also in use internationally for educational purposes. Scotland, for example, is connecting twelve sites to create a virtual university. See *Videoconferencing Technology to Create Virtual University*, M2 PRESSWIRE, Feb. 13, 1997, available in 1997 WL 8027118.

³ With desktop systems, cameras are fitted into a personal computer. Group systems, however, usually require a room with appropriate lighting and acoustics, a camera, software, etc. Lee Hawkins Jr., *More Are Meeting by Videoconference; Desktop, Group Systems Used for Internal and External Communication*, MILWAUKEE J. SENTINEL, July 14, 1997, at A11.

⁴ It was the technology of choice for the first distance-learning course offered at a law school. In the spring of 1996, Professor Andrea L. Johnson taught Advanced Telecommunications Law using videoconferencing to link classrooms at California Western School of Law in San Diego, California, with Cleveland Marshall College of Law in Cleveland, Ohio. See Andrea L. Johnson, *Distance Learning and Technology in Legal Education: A 21st Century Experiment*, 7 ALB. L.J. SCI. & TECH. 213, 214 (1997). Professor Peter W. Martin of Cornell University Law School began teaching a videoconferenced course, Copyright and Digital Works, on September 1, 1996. E-mail from Professor Martin to the Author (Apr. 6, 1998).

Sage Colleges in Albany-Troy, New York, adapted frame relay⁵ computer technology to transmit interactive, high quality, and multiple-site audio, video, and data over great distances⁶ at relatively low cost.⁷ Frame relay routes T1⁸ service through a switching cloud shared by many members, thus reducing the cost for each member.⁹ With frame relay computer technology, high quality virtual education is finally within reach of all academia.¹⁰ Yet, while distance learning programs are beginning to proliferate in higher education, their introduction into legal education has been sluggish.¹¹

⁵ Frame relay is a form of packet switching, computer communications technology. The Internet, for example, is based on a packet-switching protocol called Transmission Control Protocol/Internet Protocol (TCP/IP). ATM (asynchronous transfer mode) is a newer protocol that can be switched at very high speeds, but which is relatively expensive. Frame relay on the other hand, is an inexpensive wide-area networking (WAN) protocol available from local and long distance carriers. It typically operates at 56 kilobits per second (kbps) to 1.544 megabits per second (mbps). Larry Stein, *Look Twice Before Diversifying into Telephony: Don't Jump in Simply Because You've Got a Fiber Optic Network*, PUB. UTIL. FORT., Mar. 1, 1995, at 32. Fiber optic transmits data, voice, and audio at very high speeds eight to ten times greater than standard telephony's twisted pairs of copper wires. James Walter Grudus, *Local Broadband Networks: A New Regulatory Philosophy*, 10 YALE J. ON REG. 89, 95 (1993). Telephone networks, in contrast, are circuit switched (i.e., a network of phone lines). "During a 'circuit switched' phone call, one line opens to the other end, thus continuously creating a designated route for this information. In a 'packet switched' network, information is broken up into 'packets' and each packet is delivered through whatever route can be found. [The packets] are sent along with millions of others" and "reassemble themselves at the 'delivery point.'" Julie M. Kearney, *Telemedicine: Ringing in a New Era of Health Care Delivery*, 5 COMMLAW CONSPECTUS 289, 292 n. 41 (Summer 1997) (citing Cara E. Sheppard, *Cyber politicking*, 4 COMMLAW. CONSPECTUS 129 n.3 (Winter 1996).

⁶ See Appendix B for technical information published by the Adirondack Area Network (AAN).

⁷ Previously, videoconferencing via frame relay had been thought possible only within local area networks. In adapting frame relay to long distance videoconferencing, the Sage College inventors have produced an ATM-like connectivity but at a greatly reduced cost.

⁸ Peter Weinstein, *In Search of Bandwidth*, TECH. & LEARNING, Mar. 1, 1998, at 56 ("T1 is a dedicated (that is, full time and continuous) connection to the Internet that delivers bandwidth of data at 1.544 Mbps ... leased for a monthly flat rate ... [that] is fairly expensive.").

⁹ *The Lowdown on High-Speed Lines*, Bus. J. (Charlotte, N.C.), Aug. 11, 1997, at 33.

¹⁰ Frame relay technology also makes high quality inexpensive videoconferencing accessible to the public. The Adirondack Area Network is a not-for-profit corporation with the purpose of serving the people of New York State.

¹¹ Multi-state and even multi-country distance education is not uncommon. The Cornell University Department of Architecture, for example, offered a Virtual Design Studio course via the World Wide Web at the University of Hong Kong, ETSA in Barcelona, Spain, the Massachusetts Institute of Technology, Washington University in St. Louis, and the University of British Columbia in Canada. See *Distance Learning: Classroom Technologies* (visited Sept. 2, 1997) <<http://www.classtech.comeH.eduldl.htm>>. For information about worldwide distance learning, see the website of the International Center for Distance Learning at <http://www-icdl.open.ac.uk/>. See generally Debbie Orr and Margaret Appleton, *New Opportunities for Remote Students*, 1 J. LIBR. SERVICES DISTANCE EDUC. 9 (August 1997) <www.westga.edu/library/jlsde/jlsde1.1.html> (discussing distance learning programs employed by central Queensland University in Australia); Thomas E. Abbot, *Maine College Cyber-Programs Offered Internationally*, 1 J. LIBR. SERVICES DISTANCE EDUC. 1 (August 1997) <www.westga.edu/library/jlsde/jlsde1.1.html> (describing the distance learning program set up by the University of Maine System). See also sources cited *supra* note 1.

American Bar Association Standard 304(g) specifically prohibits the oldest form of distance learning, correspondence study, and thus, by implication, technology-based distance learning as well.¹² Nevertheless one of the American Bar Association's (ABA) responsibilities as an accrediting institution is "to improve the quality of legal education in the United States,"¹³ a mission which could include evaluation of new educational technologies. Recognizing that communication technologies may enhance legal education, the American Bar Association Section on Legal Education published the Temporary Distance Education Guidelines (hereinafter "Temporary Guidelines")¹⁴ in the fall of 1997 to encourage experimentation with distance learning technologies. Seeking to preserve the distinctive law school experience of participating in a unique learning community, the Temporary Guidelines provide principles and requirements for distance learning programs.¹⁵ In addition, the Temporary Guidelines reduce or remove the necessity of prior approval or waiver from the Accreditation Committee or the Consultant of the Section.¹⁶

This essay explores the relevance of distance learning technologies and videoconferencing, in particular, to legal education. Part II reviews the application of distance learning in law schools. Part

¹² *Temporary Distance Education Guidelines*, SYLLABUS (American Bar Association Section of Legal Education and Admissions to the Bar), FALL 1997, at 12 [hereinafter "Temporary Guidelines" and reproduced in Appendix A]. See A.B.A. STANDARDS FOR APPROVAL OF LAW SCHOOLS § 304 (1997) (prohibiting correspondence study).

¹³ *Foreword*, A.B.A. STANDARDS FOR APPROVAL OF LAW SCHOOLS (1997) (describing the conclusions of the Section's Council in its 1989 Report by William J. McLeod) [hereinafter "STANDARDS"]

¹⁴ Temporary Guidelines, *supra* note 12, at 12.

¹⁵ *Id.*

¹⁶ *Id.*

III describes the development of frame relay videoconferencing technology, its relevance to the practice of law, and applications in legal education. Part IV discusses the application of the Temporary Guidelines and the A.B.A. Standards to video conferencing in legal education. Finally, the essay concludes with a discussion of the potential of frame relay videoconferencing technology for enhancing the quality of legal education and broadening its accessibility.

II. DISTANCE LEARNING

Distance learning is typically defined as communication which connects instructors and students who are separated by geography and, often, by time.¹⁷ In the 19th Century, distance learning meant correspondence study.¹⁸ As a result of telecommunications and computer applications, distance learning is now often defined as the electronic connection of multiple classrooms.¹⁹ Through the use of distance learning, students and instructors can communicate using one or more of the following technologies: e-mail, Internet discussion or study groups, broadcast television, and group or individual conferences via telephone or video.²⁰

Because many of these technologies are now widely available at reasonable cost, many educators view distance-learning technologies as an economical means of providing increased access to education and as a resource for educational enrichment.²¹ Schools may pool or share their resources to reach a greater number of students.²² As a result, students have greater access to a variety

¹⁷ See generally Johnson, *supra* note 5; *Connecting Illinois*, *supra* note 2.

¹⁸ The earliest examples of distance learning in the United States can be traced to correspondence courses offered by the University of Wisconsin in 1892. See Millard Johnson, *Remote Control Classes: Technology Spurs Further Evolution of the Wisconsin Idea*, 10 CORP. REP. Wis., Sept. 1994, at 16 (stating that the University of Wisconsin first used the term "distance learning"). See also Steve Sheppard, *Casebooks, Commentaries, and Curmudgeons: An Introductory History of Law in the Lecture Hall*, 82 IOWA L. REV. 547, 640 n.508 (1997) (citing Blackstone's School of Law as the first institution to practice distance learning through correspondence course offerings in 1890).

¹⁹ Johnson, *supra* note 4, at 214 (citing Ken Myers, *Real Law in a Virtual Classroom: San Diego and Cleveland Join Up*, NAT'L L.J., Jan. 29, 1996, at A15).

²⁰ See *id.* at 215.

²¹ For a thorough examination of the relevance of distance education technology to law school pedagogy see *id.* at 241.

²² See, e.g., David Orenstein, *High-tech Training in the Spotlight*, TIMES UNION (Albany, N.Y.), Oct. 31, 1997, at E1 (discussing how students far from school may be able to take classes exclusively offered by that school through distance learning). See also Stephanie Wilkinson, *ATM Pulls in High Grades at School*, PC WEEK, Oct. 13, 1997, at 128, available in 1997 VIL 12482181 (discussing how distance learning has connected the poorer schools with the richer ones, enabling a sharing of administrative, research and teaching resources between the two schools).

of instructors, including experts at universities and in the private sector.²³ Distance learning technologies can also provide unique pedagogical enrichments. The University of Massachusetts at Dartmouth, for example, offered a distance-learning course on the Holocaust and connected students with a concentration camp survivor living in Israel.²⁴ Law schools, however, have only recently begun to experiment with distance learning technologies in their programs

A. *Distance Learning in Law Schools*

Perhaps more than other academic disciplines, legal education employs pedagogy highly dependent on personal encounters between the student, the instructor, and the other students. The traditional "Socratic method" of teaching, where the instructor poses a series of questions to individual students, is still revered and practiced at many law schools.²⁵ It is this intense "Socratic" interaction between student and teacher that is thought to train students in spontaneous oral analysis and argument.²⁶ Interaction among students and faculty outside the classroom is also val-

²³ See, e.g., Steven Keeva, *Stars of the Classroom: Will Top Profs Who Instruct Via Internet Dominate Teaching?*, 83 A.B.A. J., Dec. 1997, at 18 (discussing how students are taught via a virtual classroom by a professor in remote locations over the Internet on a weekly basis). See also Warren Ashley, "Cyber Universities:" *the Wave of the Future*, L.A. BUS. J., Aug. 4, 1997, available in 1997 WL 9559058 (discussing how a school, through distance education, can make the successful "transition into the next wave of executive training").

²⁴ See Marie C. Franklin, *Using the Internet to Inspire Students*, BOSTON GLOBE, Oct. 12, 1997, at E6 (discussing videoconferencing and distance learning at Dartmouth).

²⁵ See Phillip E. Areeda, *The Socratic Method (SM)*, 109 HAR. L. REV. 911 (1996); Stephen I. Friedland, *How We Teach: A Survey of Teaching Techniques in American Law Schools*, 20 SEATTLE U. L. REV. 1 (1996). Much scholarly criticism reflects an opinion that the Socratic method is either inadequate, see, e.g., Myron Moskowitz, *Beyond the Case Method. It's Time to Teach with Problems*, 42 J. LEGAL EDUC. 241 (1992); Pierre Schlag, *Essay: Hiding the Ball*, 71 N.Y.U. L. REV. 1681 (1996), or injurious, see, e.g., Ellen K Solender, *The Story of a Self-Effacing Feminist Law Professor*, 4 AM. U. J. GENDER & L. 249 (1995); Lani Guinier et al., *Becoming Gentlemen: Women's Experiences at One Ivy League Law School*, 143 U. PA. L. REV. 1 (1994); Susan H. Williams, *Legal Education, Feminist Epistemology, and the Socratic Method*, 45 STAN. L. REV. 1571 (1993).

²⁶ See Elizabeth Garrett, *Becoming Lawyers: The Role of the Socratic Method in Modern Law Schools*, I GREEN BAG 199 (1998).

ued as an integral part of legal education.²⁷ Distance learning technologies used in academia, however, separate students and teachers from each other both in space and time. The relatively inexpensive asynchronous distance learning technologies, such as e-mail and Internet communication, thus appear to fall short of the learning community valued in law school pedagogy. On the other hand, anecdotal reports from instructors in a variety of fields indicate that asynchronous technologies may actually enhance the community of learners. Some instructors who use e-mail or the Internet report increased contact with and among students through, for example, on-line conferences and discussion groups.²⁸ Even better results may be possible with real-time videoconferencing, which provides close simulations of actual classroom experiences.²⁹

1. The First Videoconferencing Course in a Law School

In 1996, Professor Andrea L. Johnson introduced the first distance-learning course at an American law school.³⁰ Alternating between two law schools, California Western Law School in San Diego, California and Cleveland-Marshall College of Law in Cleveland, Ohio, Professor Johnson offered an introductory survey course on Telecommunications Law,³¹ using a variety of distance learning technologies, including “the Internet, videotapes, videoconferencing, and an electronic casebook.”³² At the same time, Professor Johnson taught an identical Telecommunications Law course to a second class as a control group employing traditional methods.³³ At the end of the class, Professor Johnson concluded

²⁷ See Temporary Guidelines, *supra* note 12, at 12.

²⁸ See, e.g., James J. O'Donnell, *Tools for Teaching. Personal Encounters in Cyberspace*, THE CHRON. OF HIGHER EDUC., Feb. 13, 1998, at B7.

²⁹ See Johnson, *supra* note 4, at 237 (discussing videoconferencing technologies and how videoconferencing allows students, faculty, and professionals to interact visually from multiple locations).

³⁰ *Id.* at 214

³¹ See *id.* Law students, nevertheless, do have an opportunity to participate in some form of distance learning while in law school. Law school libraries typically include in their collections Computer-Assisted Legal Instruction (CALI) software programs which assist law students taking typical first and second year courses such as torts, debtor-creditor, property, etc. Most first year law students, however, experience their first distance learning courses when they sign up for a bar examination preparatory course, such as BAR-BRI. BAR-BRI provides videotaped lectures by prominent law professors on bar exam subjects for first-year subjects, and again later during the actual bar preparation course.

³² *Id.* at 215

³³ See *id.* at 214.

that while the experiment was a success, distance learning will never “replace professors or negate traditional teaching methods” because “[t]he dynamics of human interaction and feedback are too critical to the development of legal skills and problem solving.”³⁴

Professor Johnson, however, did not have available to her the high quality videoconferencing that frame relay provides. In fact, her course only included three videoconference sessions, which were supplemented by two teleconference sessions.³⁵ In contrast, a course conducted via frame relay videoconferencing might provide a more satisfactory simulation of the “dynamics of human interaction and feedback” available in an actual law school classroom.³⁶ Despite its potential, however, issues of cost, quality and reliability have been effective deterrents to the use of videoconferencing in academia.³⁷

B. The Cost of Distance Learning Technologies

Many law schools would choose not to offer videoconferencing courses simply because of the high cost of connectivity through ISDN,³⁸ T1,³⁹ or T3 lines.⁴⁰ The cost-effective nature of the Socratic teaching method is thus relevant to the adoption of dis-

³⁴ *See id.* at 245

³⁵ *See id.* at 215 n.5.

³⁶ *Id.* at 245

³⁷ *See* Irwin Hipsman, *Is Videoconferencing the Way of the Future?*, MASS. LAW. WKLY., May 17, 1993, at S8 (discussing the cost of videoconferencing units).

³⁸ ISDN, Integrated Services Digital Network, is a dial-up connection which offers high speed access for data, audio, and video over telephone voice lines (i.e., twisted pairs of copper wires). *See* Grudus, *supra* note 6, at 96-97. ISDN transmits at 64 kilobits per second (kbps), whereas, optical fiber is much faster, transmitting digitally (including voice, audio, and data) at 2.488 giga-bits per second. *Id.* at 97 n.29; Kearney, *supra* note 6, at 291 n.26. Other advantages of optical fibers include “easier placement, lower maintenance costs, greater security for transmitted information, and greater versatility.” Grudus, *supra* note 6, at 98.

³⁹ A T1 line is a dedicated telephone line connection to an Internet provider. T1 lines provide access at 1.5 million bytes per second (1.5 mbps). The cost of T1 lines has dropped to as low as \$800.00 per month. Todd H. Flaming, *A Technology Forecast*, 86 ILL. B.J. 99 (1998).

See Enzo Signore, *DSL Does Data and Other Services, Too*, TELEPHONY, Jan. 26, 1998, available in 1998 WL 6610586 (indicating that TI technology is “too expensive for most home based consumers”).

⁴⁰ A T3 line is a point-to-point twisted pair copper telephone line service that provides Internet access at 45 megabits per second (mbps), the equivalent of 28 T1 lines. Richard Dennis, *Guide to Selecting an Internet Provider*, 2 ENVTL. LAW 571, 579 n.8 (1996). *See also* Vince Vittore, *The Price Must be Right: DSL Model Shows Telcos One Route to Profitability*, TELEPHONY, Feb. 2, 1998, available in 1998 WL 6610600 (explaining that a T1 line costs \$2,000 per month while a T3 line costs \$16,000 per month).

tance learning technologies.⁴¹ Using the Socratic method, one faculty member may teach as many as a hundred, and often more, students in a large lecture hall.⁴² Although faculty works one-on-one with individual students, the on-looking students ostensibly learn by observation. Thus, law school instructor-student ratios can be very high. Class sizes of fifty to several hundred students are commonplace.⁴³ In contrast, the more expensive clinical training and legal research and writing programs, which require lower student-teacher ratios and are taught by relatively low-paid, non-tenure track instructors, comprise only a small part of the law school curriculum.⁴⁴ As a result even unendowed law schools may be self-supporting based on tuition income alone.⁴⁵

Expenses for many distance-learning technologies are unacceptably high, however, because of the cost of obtaining customer premises equipment and maintenance.⁴⁶ In contrast, affordable distance learning technologies could increase law school income without sacrificing traditional law school teaching methods.⁴⁷ By closely replicating the experience of a typical law school classroom and allowing faculty to reach far more students, videoconferencing, for example, can produce more tuition income. The cost of obtaining the equipment, its maintenance, and upgrades might therefore be offset by the potential increase in tuition revenue. Frame relay videoconferencing is among the least expensive of distance learning technologies.⁴⁸

⁴¹ See Kristine S. Knaplund & Richard H. Sander, *The Art and Science of Academic Support*, 45 J. LEGAL EDUC. 157, 162 (1995) (stating that legal educators are willing to assume that Socratic teaching is cost-effective).

⁴² See Appendix C for a hypothetical law school budget.

⁴³ See John O. Mudd, *Academic Change in Law Schools*, 29 GONZ. L. REV. 29, 42 (1993/1994).

⁴⁴ Many schools offer only the minimal amount of this kind of training required for accreditation by the American Bar Association. See *id.* at 40-42.

⁴⁵ See budget, Appendix C.

⁴⁶ See, e.g., Hipsman, *supra* note 37, at S8 (stating that a videoconferencing unit costs about \$50,000 and that two units are necessary).

⁴⁷ See budget, Appendix C.

⁴⁸ Professor David Bonner estimates that the ongoing costs of frame relay connectivity are approximately equal to a school's cost of Internet connectivity alone, and frame relay technology in the AAN includes Internet connectivity. Interview with Dr. David Bonner, President of the AAN & Director of Technology Initiatives at The Sage Colleges in Albany-Troy, New York, Dec. 15, 1997. See *infra* note 90.

III. FRAME RELAY VIDEOCONFERENCING

Videoconferencing technologies permit two-way video and audio communication and can support data transmission as well.⁴⁹ Some technologies provide only one-way transmission.⁵⁰ Others allow two-way communication from one point to another point.⁵¹ Some broadcast from one site to multiple sites, while others broadcast interactively from multiple sites. Still other technologies are capable of transmitting only data, while some can support data, video, and audio transmissions simultaneously.⁵²

A variety of technologies support videoconferencing. These include high bandwidth networks, parallel network models such as ISDN, satellite up and down links, multichannel video systems, and frame relay.⁵³ All are adaptable for use in higher education, but serve different needs or purposes. Factors determining choice of technology for distance learning program include cost, convenience, the number of sites to be connected, whether there are point-to-point or multiple site connections, the customer premises equipment required; connecting technologies such as SON-ET,⁵⁴ T1 or T3 lines, or frame relay; availability of technologies; and the capacity for transmission of audio, video, data, and Internet connectivity.⁵⁵

With the exception of frame relay, most of the technologies described have significant drawbacks for both public and private network applications. The broadband T3 lines and SONET tech-

⁴⁹ See, e.g., *A Conference on the Desktop*, COMP. TODAY, June 1, 1997, at 65 (discussing the concept of videoconferencing and the different ways in which videoconferencing can be transmitted).

⁵⁰ See, *id*

⁵¹ See *id*.

⁵² See *id*.

⁵³ See, e.g., John W. Ellis IV, *Hot, But for How Long?* TELEPHONY, Aug. 4, 1997, available in 1997 WL 10332197 (discussing ISDN technology and how it will compete with other high speed technologies, such as DSL).

⁵⁴ The Synchronous Optical Network (SONET) transmission system operates at 2,488,000 bits per second (bps) over fiber optic lines. In contrast the fastest modem transmission speed of copper wires (standard voice telephone) is 19,200 bps. Grudus, *supra* note 5, at 95 nn. 15-16

⁵⁵ See, e.g., Jerry Whitaker, *I Can See for Miles*, VIDEO SYS., Aug. 1, 1997, available in 1997 WL 11299364 (discussing the various videoconferencing technologies and the considerations necessary to determine which technology is best suited for each individual's needs). See also *BT: BT Offers ISDN from GBP 99*, M2 PRESSWIRE, Apr. 2, 1998, available in 1998 WL 10926612 (discussing ISDN and the costs associated with connecting to it); Wayne Walley, *The Hype May Have Died, But Technology Lives On*, GLOBAL TELEPHONY, Mar. 30, 1998, available in 1998 WL 10350872 (discussing the various videoconferencing technologies available, such as frame relay and SONET).

nologies used by some multichannel video systems are relatively expensive, often out of reach of public or other not-for-profit networks.⁵⁶ ISDN, for example, is a low bandwidth technology that requires dedicated equipment, bills both a base service charge and per minute telephone charges, is not entirely reliable, and is not universally available.⁵⁷ Similarly, satellite conferencing requires both expensive satellite time and specialized equipment, and is characterized by noticeable delays in sound transmission.⁵⁸ Frame relay, in contrast, is a very reliable, widely available technology which can provide both site-to-site and multi-site transmission of video, audio, data, and Internet connectivity, with a flat rate charge for unlimited use.⁵⁹ Relatively inexpensive connections with bandwidths as low as 56 kbps are available.⁶⁰

A. Frame Relay

Until computer scientists at the Sage Colleges and Albany Medical College recently demonstrated its applicability, frame relay technology was not believed to be capable of supporting distance transmission of audio, video, and data.⁶¹ In the past ten years, Dr. David Bonner, Director of Technology Initiatives, working with Dr. Jackie Ford, and Ken Perlin, at The Sage Colleges in Albany-Troy, New York, and later with Dr. Henry Pohl, Dean of Continu-

⁵⁶ See, e.g., *BT: BT Offers ISDN from GBP 99*, *supra* note 55 (advertising the cost effectiveness of ISDN for small businesses).

⁵⁷ For these reasons, Dr. Bonner and his team concluded that frame relay technology would provide the best solution for the needs of the Adirondack Area Network, serving rural and upstate New York communities. See *Adirondack Area Network* (visited Apr. 26, 1998) <<http://www.sage.EDU/html/AAN/aanhome.html>>. ISDN is an acronym for Integrated Services Digital Network, which uses twisted-pair phone lines. See Whitaker, *supra* note 55. See also Ellis, *supra* note 53 (discussing ISDN technology); *Continued Growth Expected for ISDN This Year*, COMM. TODAY, Jan. 19, 1998, available in 1998 WL 5264427 (stating that ISDN is the second fastest growing service behind frame relay).

⁵⁸ Satellite transmission delay is sometimes called latency. See *Satellites Are' Most Effective When Unnoticed*, COMM. TODAY, July 7, 1997, available in 1997 WL 10864246. See also *Skepticism on Satellites Found to be Still Prevalent Among Distance Educators*, SATELLITE WK., Mar. 31, 1997, available in 1997 WL 7891167 (discussing some of the problems with the use of satellites on the delivery of distance learning).

⁵⁹ The flat rate frame relay service is a function of the users committed information rate, or minimum speed that the user requires. See, e.g., *Infinity AccessNET* (last modified Dec. 7, 1997) <<http://www.ixs.ne/frame-relay/>> (discussing the basics and benefits of frame relay).

⁶⁰ See Frank Lenk, *Standard Gives New Life to the Modem*, THE GLOBE AND MAIL, Feb. 27, 1998, at C4, available in WL, Globemail Database.

⁶¹ See *id.*

ing Education, Albany Medical College, and Daniel Maloney, Director of Network Services at Albany Medical College, devised an innovative frame relay application, which makes comprehensive distance transmission possible.⁶² The Sage-Albany Medical College frame relay application supports the first public frame relay network, the Adirondack Area Network.

Frame relay supplies the bandwidths necessary for video by using permanent virtual circuits (PVCs).⁶³ The quality of the audio-video signal is comparable to television/compact disk quality at 384 kbps bandwidths.⁶⁴ Frame relay also provides a very reliable service. It is possible, for example, to unplug the video-conferencing equipment for several minutes and restore videoconferencing simply by plugging it in again.⁶⁵ Neither ISDN nor satellite transmissions can be reconnected so simply.⁶⁶

Finally, although the wide area network applications are recent discoveries by Dr. Bonner and his colleagues, frame relay is a longstanding technology based on fiber optic lines, which are available throughout the country.⁶⁷ There is no need for specialized connections such as those required by ISDN.⁶⁸ And although, at present, frame relay networks are restricted to local telephone area code designations, internetwork connections can be made to bridge area code barriers.⁶⁹ Frame relay videoconferencing does not depend upon multiplexing data across ISDN lines or satellite up linking and downlinking.⁷⁰ Rather, it relies on a virtual connection to a frame relay cloud to connect to fiber optic networks which transmits high quality, reliable video, audio, and data at

⁶² See *Adirondack Area Network: Technology* (visited Apr. 26, 1998) <<http://www.sage.edu/www/AAN/aantech.html>> (discussing frame relay technology) [hereinafter AAN: *Technology*].

⁶³ *Infinity AccessNet*, *supra* note 59. See *id*

⁶⁴ *Infinity AccessNet*, *supra* note 59; AAN: *Technology*, *supra* note 62.

⁶⁵ This is possible because videoconferencing over frame relay uses TCP/IP, a standard routable connection that automatically persists in trying to make a connection, even when the device using TCP/IP is disconnected. See *Adirondack Area Network Develops Community Services in New York State*, VIDEOCONFERENCING INSIGHT (IMP Publications), Sept. 15, 1997, at 4 [hereinafter "VMEONFERENCING INSIGHT"]; AAN: *Technology*, *supra* note 62.

⁶⁶ See AAN: *Technology*, *supra* note 62 (noting the unreliability of the system).

⁶⁷ See *Frame Relay: Why Frame Relay: Infrastructure Already Exists* (visited Apr. 17, 1998) <<http://bugs.wpi.edu:8080/EE535/hwk9cd95/jhp/jhp.html>>.

⁶⁸ See *Infinity AccessNET*, *supra* note 59 (stating that the only equipment needed for frame relay is a TC/ICP router packet and a DSU/CSU to connect the router to the wall jack).

⁶⁹ AAN: *Technology*, *supra* note 62.

⁷⁰ *Id*

relatively low cost to hundreds of partners in the Adirondack Area Network.⁷¹ The frame relay cloud is a mix of ATM, 10-Base T, and ISDN technology.

B. The Adirondack Area Network

The Adirondack Area Network (AAN) is the first public frame relay computer and telecommunications network in the United States.⁷² Dr. Bonner and his associates developed the AAN with funding from the 1994 New York State Advanced Telecommunications Project.⁷³ Largely a rural network, the AAN is anchored in the Albany-Troy-Schenectady area of upstate New York.⁷⁴ It spans a geographic territory of hundreds of miles, from Albany, New York, north to the Canadian border, west to Utica, and east to the Massachusetts and Vermont borders.⁷⁵ The objectives of

⁷¹ *Id.* See VIDEOCONFERENCING INSIGHT, *supra* note 65, at 2; *Adirondack Area Network: A Historical Summary* in CONNECTING ALL AMERICANS FOR THE 21ST CENTURY: TELECOMMUNICATIONS LINKS IN LOW INCOME & RURAL COMMUNITITIES (Feb. 24-26, 1998) [hereinafter "CONFERENCE: MATERIAL"].

⁷² In its initial stage the AAN, funded by a public grant, linked 45 institutions, primarily in rural New York, including Russell Sage College, Sage Junior College of Albany, Albany Medical College, the Samuel S. Stratton Veteran's Administration Medical Center, the Adirondack Medical Center, two Franklin-Essex-Hamilton area BOCES sites (Malone and Saranac Lake), Champlain Valley Physician's Hospital Medical Center, two Clinton-Essex-Warren-Washington area BOCES sites (Plattsburgh & Mineville), the Mohawk Community Center, and North Country Legal Services. See *Adirondack Area Network: A Historical Summary* in CONFERENCE MATERIAL, *supra* note 71; *Adirondack Area Network: Partners* (visited Apr. 26, 1998) <<http://www.Sage.EDU?WWW/html/AAN/aanpart.html>> (listing the 45 charter members whose vision helped create the AAN) [hereinafter *AAN: Partners*]. See generally VIDEOCONFERENCING INSIGHT, *supra* note 65, at 2-4 (providing an overview of the AAN project).

⁷³ See VIDEOCONFERENCING INSIGHT, *supra* note 65, at 2 (noting that in addition to the New York State grant, Dr. Bonner received financial assistance from the Public Utility Law Project).

⁷⁴ *Id.* *Adirondack Area Network: A Brief Overview*, CONFERENCE MATERIAL, *supra* note 71.

The applications in a successful rural network must all run over one wide area network (WAN) with inexpensive lines. It is not cost effective to install parallel networks. Entrepreneurial training, business communications, telemedicine, distance learning, link to libraries, LAN/WAN connectivity, PBX cascading, Internet connectivity, web services and a host of other features are all obtainable through the AAN.

Id.

⁷⁵ See VIDEOCONFERENCING INSIGHT, *supra* note 65, at 2 (explaining with the aid of a map that the AAN extends up to the Canadian border and covers eight million acres). See also *Adirondack Area Network: A Historical Summary*, CONFERENCE MATERIAL, *supra* note 71 (describing the geographic land area as the size of Vermont).

the AAN project were to provide residents in the (518) area code of New York with telemedicine, distance learning, continuing medical education, access to legal services, and videoconferencing.⁷⁶ Design of the AAN network took two years, with implementation beginning in January 1997.⁷⁷

More than fifty institutions are members of the AAN, with fifty more slated to join.⁷⁸ In addition, many more potential partners are seeking to join the AAN, even from locations outside the state of New York, leading to an estimated projection of 150 partners.⁷⁹ The major anchoring partners are the Sage Colleges, Albany Medical Center, the Albany College of Pharmacy, the Samuel S. Stratton Veteran's Administration Medical Center, and Albany Law School.⁸⁰ The AAN includes many hospitals, several colleges, professional schools, Boards of Cooperative Extension (BOCES), legal services clinics, some private law firms, community groups, and a variety of other not-for-profit institutions.⁸¹

C. The Frame Relay "Cloud"

AAN members are connected by a virtual computer connection, a multi-site frame relay connection metaphorically described as a "cloud."⁸² Most partners access the cloud through T1

⁷⁶ VIDEOCONFERENCING INSIGHT, *supra* note 65, at 2; Adirondack Area Network: A Technical Summary, CONFERENCE MATERIAL, *supra* note 71.

⁷⁷ VIDEOCONFERENCING INSIGHT, *supra* note 65, at 2.

⁷⁸ *Id.* See also Interview with Dr. David Bonner, President of the AAN and Director of Technology Initiatives at Sage Colleges in Albany-Troy, N.Y. (Sept. 11, 1997).

⁷⁹ For example, 28 Health Care Centers in Vermont are interested in joining the AAN.

VIDEOCONFERENCING INSIGHT, *supra* note 65, at 2.

⁸⁰ VIDEOCONFERENCING INSIGHT, *supra* note 65, at 3 (explaining that Albany Medical College, Albany Medical Center, the Pharmacy and Law schools and Sage Colleges are linked through the ATM backbone installed at Albany's University Heights Complex).

⁸¹ See AAN. Partners, *supra* note 72 (providing a list of the founding AAN members).

⁸² See Adirondack Area Network: A Technical Summary, CONFERENCE MATERIAL, *supra* note 71 (summarizing how the AAN operates):

Two virtual networks exist in the AAN frame relay cloud for general use by the community; one for video and one for Internet connectivity. The video network is a star topology with hubs at The Sage Colleges and Albany Medical Center. Access to the Internet is also accomplished via a star topology utilizing gateways to our Internet provider, NYSERNet. Data and video are carefully isolated from each other through the use of these virtual networks; that is, video PVCs are disjoint from data PVCs. Actually, since video is encapsulated in TCP/IP, video traffic is TCP/IP data in our network so it is a misnomer to refer to a video network in the AAN. It is, however, convenient.

Each site is connected to the AAN frame relay cloud via a router. The serial (or, in the case of T3 connections, HSSI) interface is subdivided into subinterfaces, one for each data-link identifier (DLCI). DLCIs supporting video are assigned a committed information rate (CIR) of 768 kbps and DLCIs supporting data (eg. [sic] Internet traffic) are assigned a CIR of 384 kbps. It is not necessary to set the CIR for a video DLCI at 768 kbps since a video call at 384 kbps utilizes about 480 kbps in the WAN, but our frame relay provider does not charge for CIR so we take the maximum allowable CIR for video PVCs. The sum of the CIRs for data DLCIs on a circuit should not exceed the difference in the port speed of the circuit and the bandwidth required for video. As a matter of policy, the excess burst rate B, for a DLCI is set to the same value as the CIR for that DLCI.

Id.

The following technical information about the AAN may be found on its homepage, at AAN.

Technology, supra note 62:

TCP/IP is the protocol used in the AAN frame relay cloud. The video signal is IP encapsulated H.320, the new H.323 video protocol. Multipoint video calls are supported in this environment.... [A] Video Interface Unit (VIU), a RADVision product, converts the H.320 signal to H.323. The gateways, also provided by RADVision, support ISDN "head-ins" into the AAN cloud. The gateway also functions as a "phone number to IP translator", that is, it serves as a video conferencing PBX. While CLI's (now VTel) Radiance video conferencing unit was used in the initial beta test, other products have been used

lines.⁸³ While not required, partners can also access the cloud with ISDN lines, through virtual gateways.⁸⁴
“The full structure

as well. *VCon's* new H.323 desktop line is being tested as a MAN/WAN solution. ILINC's desktop solution using TCP/IP multicast has also proven to be successful. Cisco and *RealTech* have been instrumental in design efforts to protect the video bit stream from data bit streams. Routers can vary from the 2000 series to the 7000 series, depending on the site and type of connectivity. VideoServer's Multipoint Conferencing Server II is presently being used as a video bridge. Other Video Multipoint Conferencing Units will be added in the near future. The Bell Atlantic- NYNEX [sic] *frame relay* cloud topology is controlled by the AAN and Bell Atlantic engineers.

⁸³ In a typical T1 line to an institution the services are integrated. That is, through one physical connection an institution may obtain several permanent virtual circuits (PVCS) each dedicated to a particular service. For example, Internet connectivity, Distance learning, institution-to-institution LAN connectivity and administrative computing could be obtained through different PVCs on the same physical frame relay line. Large urban institutions may elect to obtain high bandwidth lines while small rural institutions may elect to obtain lower bandwidth lines.

Adirondack Area Network: A Brief Overview, CONFERENCE MATERIAL, *supra* note 71.

⁸⁴ For example, a user at the Adirondack Medical Center can seamlessly place an ISDN call through ISDN lines attached to a Video Gateway at Albany Medical Center even though the two institutions are 150 miles apart. A connection is established between the VIU attached to Adirondack Medical Center's Codec and the Video Gateway at Albany Medical Center over the AAN's frame relay cloud. The ISDN call is routed through [sic] this connection.

Adirondack Area Network: A Technical Summary, CONFERENCE MATERIAL, *supra* note 71. *See also* AAN: *Technology*, *supra* note 62 (illustrating, through the aid of a diagram, how the frame relay cloud is linked).

is a "hybrid cloud," including ATM, point-to-point lines, POTS [plain old telephone service] and satellite up and down links."⁸⁵

The AAN "cloud" is confined to the (518) area code because of the federal division of telephone providers, which prohibit their local companies from competing in the long distance market.⁸⁶ Area code-restricted clouds may, however, bridge to clouds in other area codes.⁸⁷ The AAN cloud may also be accessed by ISDN and other types of telephonic connections from any geographic point.⁸⁸

Once in the cloud, all the partners can connect with each other and with the Internet, at no additional cost.⁸⁹ Thus, frame relay provides a relatively inexpensive flat rate service for data, audio, and video transmission and Internet connectivity because the cloud is shared by all the members, and there are no long distance charges within the cloud.⁹⁰ The entire cost for all these services

⁸⁵ Adirondack Area Network: A Brief Overview, CONFERENCE MATERIAL, *supra* note 71

⁸⁶ See Telecommunications Act of 1996 § 153(35), Pub. L. No. 104-104, 110 Stat. 56 (to be codified at 49 U.S.C. § 153(35)); § 251, § 271, 110 Stat. 61-62, 86-92 (to be codified at 47 U.S.C. §§ 251-271).

⁸⁷ See AAN. *Technology*, *supra* note 62 (diagramming how this bridging is possible); *supra* note 84 and accompanying text explaining how the bridging occurs.

⁸⁸ See Adirondack Area Network: A Technical Summary, CONFERENCE: MATERIAL, *supra* note 71: The AAN also utilizes Video Gateways to connect a Multipoint Conferencing Unit (MCU) to the network. Each port on the MCU is connected to a WAN port on a Video Gateway. In this case, the Video Gateway establishes connections between the MCU and VIUs attached to video units participating in the multipoint conference and performs the TCP/IP encapsulation for the MCU.

Id.

See also *supra* notes 83-85 and accompanying text for a detailed explanation.

⁸⁹ Using the example from footnote 84, this is accomplished by the user at Adirondack Medical Center 'dialing' the two digit extension for the WAN port on Albany Medical Center's Video Gateway, [and] passing the number for the ISDN call through the Video Gateway.... [For example, if] the two-digit number is 90, a user would "dial" 90#01117817946000. The numbers following the pound sign are passed through the Video Gateway's WAN port to an IMUX. The first three numbers after the pound sign (011...) determine the type of ISDN call to be placed ... and the remaining numbers are the telephone number of the remote site.

Adirondack Area Network: A Technical Summary, CONFERENCE MATERIAL, *supra* note 71. See AAN. *Technology*, *supra* note 62; Adirondack Area Network: A Technical Summary, CONFERENCE MATERIAL, *supra* note 71 (explaining that frame relay is billed at a flat rate).

⁹⁰ See AAN: *Technology*, *supra* note 62 (explaining that the network supports two-way interactive video, LANS, WANS, data exchange, Internet access, ISDN, TI, T3, ATM, and other technologies which allow bridging to other frame relay networks on a flat fee basis eliminating long distance charges).

for any one member is approximately the same as the cost of Internet connectivity alone.⁹¹ Both video and data (e.g., Internet connectivity) are transmitted over a single network connection, which does not require an expensive fiber connection to the institution.⁹² Frame relay is therefore far less expensive than other technologies, including asynchronous transfer mode (ATM), satellite links, fractional T1 lines, and ISDN.⁹³ It has been called “the poor man's [or woman's] ATM”⁹⁴ because it provides most of the services of the highest quality networking solution, ATM, including videoconferencing, but at a much lower cost.

D. Group and Desk-top Videoconferencing

Frame relay supports both group and desktop videoconferencing. Desktop videoconferencing requires cameras at each computer station and uses specialized software.⁹⁵ Group videoconferencing requires rooms with appropriate audio and video equipment for scanning an entire group of participants and for focusing on individual speakers.⁹⁶ The AAN is in the process of building group videoconferencing rooms⁹⁷ at sites throughout the

⁹¹ *Id.* See also Adirondack Area Network: A Technical Summary, CONFERENCE MATERIAL, *supra* note 71 (noting that because frame relay is provided at a flat rate, additional charges are not incurred once connected).

⁹² Adirondack Area Network: A Historical Summary, CONFERENCE MATERIAL, *supra* note 71.

⁹³ *Id.* (making reference to the fact that alternatives to the frame relay cloud are extremely expensive).

⁹⁴ Interview with Dr. David Bonner, President of the AAN and Director of Technology Initiatives at The Sage Colleges in Albany-Troy, N.Y. (Jan. 9, 1998).

⁹⁵ Erin Callaway & Aileen Crowley, *R&D's New Colors*, PC WEEK, Mar. 2, 1998, at 77, available in 1998 MIL 8053928 (defining desktop videoconferencing as the process of “streaming live video and audio between geographically separated PCs using a monitor-mounted camera, a network connection and software to exchange images”).

⁹⁶ Hawkins, Jr., *supra* note 3, at A11.

⁹⁷ Video room systems are connected directly to a Video Interface Unit (VIU) manufactured by RADVision. The VIU encapsulates the H.320 video stream in TCP/IP and, in conjunction with Video Gateway, also manufactured by RADVision, establishes the connection over the TCP/IP network. The VIU also buffers the video data to compensate for latency on the network and provides the clock to the Codec. Desktop units employ either a software only solution or require a Video Interface Card (VIC) depending on the type of Codec used.

The Video Gateway performs PBX type functions for the video network. Each VIU is assigned a four digit extension (analogous to a four digit extension assigned in a PBX) and an IP address. The Video Gateway resolves these extensions into IP addresses and enables the network connection between VIUs. Each Video Gateway on the network is also assigned a three-digit ‘exchange’ and an IP address. These gateway ‘exchanges’ are also resolved into IP addresses by the Video Gateway. As a result of these mechanisms, a user ‘dials’ what appears to them to be a telephone number in order to establish a connection to another video unit. To connect to a unit associated with the same Video Gateway as the originator of the call, the four-digit extension is ‘dialed.’ To place a call to a unit associated with a different Video Gateway, a seven-digit number is ‘dialed’.

Adirondack Area Network: A Technical Summary, CONFERENCE MATERIAL, *supra* note 71.

(518) area code serving the Adirondack Region of upstate New York. The Adirondack Region is a vast, rural, mountainous area, much of it parkland, with few metropolitan areas and a minimal highway system.⁹⁸ One interstate highway traverses its eastern border. Travel is difficult and slow, particularly during long, harsh winters.⁹⁹

Funded by a New York State telecommunications grant, the AAN proposes to construct group videoconferencing rooms so that every individual in the (518) area code will be within a forty-five minute drive to a videoconferencing room.¹⁰⁰ One major use of the AAN by hospitals and the medical college is "telemedicine," which serves a geographically disparate population of low income, and often elderly, individuals.¹⁰¹

Most of the AAN videoconferencing sites consist of dedicated rooms equipped with a VTEL Radiance Group Videoconferencing System. "The system includes dual roll-about television monitors for viewing other sites, pan/tilt zoom camera with automatic focus, V.3 network interface, touch panel with self-guide [d] user inter-face, integrated audio echo cancellation, tabletop microphone, moveable picture in picture, document/aux camera capabilities. Options for greater functionality include an auxiliary local camera to capture local video, speakers, additional microphones, a microphone mixer, VCR for transmitting recorded video, and an

⁹⁸ See *Adirondack Area Network: About the AAN* (visited Apr. 26, 1998) <<http://www.sage.edu/WWW/html/AAN/aanbt1.html>> (noting the "mountainous topography, severe climate, and geographic isolation" of upstate N.Y.) hereinafter *AAN. About the AAN*. See also *Adirondack Area Network: A Brief Overview*, CONFERENCE MATERIAL, *supra* note 71 (describing the applications of frame relay technology in such rural areas).

⁹⁹ See *AAN. About the AAN*, *supra* note 98.

¹⁰⁰ Interview with Dr. David Bonner, *supra* note 94.

¹⁰¹ See *Adirondack Area Network: Telemedicine* (visited Apr. 26, 1998) <<http://www.sage.edu/WWW/html/AAN/aantele.html>> (stating that access to rural healthcare is limited) [hereinafter *AAN: Telemedicine*]. See also *Adirondack Area Network: A Technical Summary*, CONFERENCE MATERIAL, *supra* note 71 (providing letters from institutions regarding the useful nature of the AAN program for telemedicine).

ELMO document camera for transmitting documents.”¹⁰² Many of the group videoconferencing rooms will be available to the public and for multiple community uses. The BOCES locations, for example, are open to public users, such as public officials, seniors, committees on special education, and continuing legal education courses.

IV. A.B.A. ACCREDITATION OF LAW SCHOOL DISTANCE LEARNING PROGRAMS

As the accrediting agency for professional schools of law, the A.B.A. has promulgated Standards for Approval of Law Schools (hereinafter “Standards”).¹⁰³ The Standards specifically prohibit distance learning in its earliest form of correspondence study.¹⁰⁴ Consequently, before a law school could experiment with distance learning programs using computer and telecommunications technologies, it had to seek a waiver or approval from the Accreditation Committee of the A.B.A.’s Section on Legal Education and Admission to the Bar or the Consultant on Legal Education.¹⁰⁵ To

¹⁰² Telecommunications and Information Infrastructure Assistance Program Proposal for Albany Law School of Union University by Edward Brennan, Director of Computer Resources 4 (submitted Mar. 11, 1998) (on file with the Journal). At Albany Law School,

[a] separate video interface unit (VIU) will connect the Radiance System to an ethernet hub on the Law School’s local area network. The VIU converts the video data stream (H.320) to an IP encapsulated H.323 data stream which can then be routed across the ALS (Albany Law School) local area network and the Adirondack Area Network. A router and CSU/DSU will transmit video data, along with our Internet traffic to the frame relay cloud via an AIS maintained T1 local loop connection to the local Bell Atlantic central office. The Law School will maintain a committed information rate (CIR) account with Bell Atlantic and pay for separate permanent virtual circuits (PVCS) for our Internet and Video traffic. The video PVC can provide a link to the AAN for direct video conferencing with one other site. It can also provide a link to the AAN VideoServer Unit for multipoint conferences.

Id.

¹⁰³ Temporary Guidelines, *supra* note 12, at 12. *See Forward, STANDARDS, supra* note 12 (noting that the A.B.A.’s section of Legal Education and Admissions to the Bar has been the recognized agency for law school accreditation since 1952). The Standards are published on the A.B.A.’s website beginning at <<http://www.abanet.org/legaled/preamble.html>> and can be ordered from A.B.A. Order Fulfillment, 750 North Lake Shore Drive, Chicago, Illinois 60611.

¹⁰⁴ STANDARD 304, *supra* note 12 (prohibiting correspondence study).

¹⁰⁵ The program of A.B.A. approval of law schools is administered by the Consultant on legal Education to the American Bar Association. Professor James P. White of Indiana University School of Law has been the Consultant for the A.B.A. since January 1974. *Foreward, STANDARDS, supra* note 13. *Cf.* Temporary Guidelines, *supra* note 12, at 12 (reporting that this requirement in most respects was removed with the passage of the Temporary Distance Education Guidelines on Apr. 24-26, 1997).

facilitate experimentation, the A.B.A. recently proposed Temporary Distance Education Guidelines, which waive the necessity of prior approval in most cases.¹⁰⁶ The Temporary Guidelines were approved by the Accreditation Committee during its April 25-26, 1997 meeting.¹⁰⁷ With the information gained from distance learning experiments under the Temporary Guidelines, the Section's Technology Committee, Standards Review Committee, and Accreditation Committee will eventually draft permanent Standards and Interpretations for approval by the A.B.A. House of Delegates.¹⁰⁸ As part of the process, the proposed permanent Guidelines will be subjected to public debate and comment and, afterwards submitted to the A.B.A. for adoption.¹⁰⁹ In the meantime, the Temporary Guidelines provide both principles for distance education in law schools and specific requirements for implementation.

A. The Temporary Guidelines

Emphasizing the special character of legal education as participation in a unique "learning community," the Temporary Guidelines make clear that distance learning is no substitute for on-campus instruction. A legal education, in the opinion of the Accreditation Committee, "involves more than the mere delivery of information or simply learning facts, history or even logic."¹¹⁰ The process consists of both formal and informal interactions, which take place among students and faculty on the law school campus.¹¹¹ It is within this school environment that a student "will ultimately learn, experience, and develop skills and knowledge that will advance the legal system, society and his or her career."¹¹² The Accreditation Committee appears to be concerned

¹⁰⁶ Temporary Guidelines, *supra* note 12, at 12

¹⁰⁷ *Id.* (announcing the approval of the Temporary Guidelines and warning that in some instances approval from the Accreditation Committee or the Consultant's Office may still be necessary).

¹⁰⁸ Both Standards and Interpretations must be approved by the A.B.A. House of Delegates, pursuant to the 1995 Department of Justice Consent Decree. *Foreward, STANDARDS, supra* note 13.

¹⁰⁹ Temporary Guidelines, *supra* note 12, at 12.

¹¹⁰ *Id.*

¹¹¹ *See id.* (noting that the law school experience takes place "not only in the classroom, but also in other places and at other times").

¹¹² *Id.*

about the possible dilution of the learning community or substitution of distance learning for on-campus instruction. For instance, the Temporary Guidelines warn that “delivery of course work to a person’s home or office” as a substitute for on-campus class meetings will violate the Temporary Guidelines.¹¹³ Such a regular practice of technological “class meetings” would essentially present a modern form of prohibited correspondence study.

To distinguish permissible distance learning from correspondence study, the Temporary Guidelines set forth several factors to be considered. These factors focus on (1) the physical locus of the learning community, (2) interactivity between students and faculty, and (3) the quality of the technology to be used.¹¹⁴ First, to be granted approval, the site of reception for distance learning experiments must be an educational institution with a “law faculty of significant size, a student body of significant size, and a library or information resource center of significant size.”¹¹⁵ In other words, it is preferred that a law school transmit a law school course to other law schools.¹¹⁶ A law school faculty member, however, does not have to be present in the classroom at the reception site.¹¹⁷ Second, the Temporary Guidelines require interactivity between students and faculty, as “a crucial element to legal education.”¹¹⁸ Third, because poor technology may hinder “the delivery of a good educational program,” only high quality technology may be used.¹¹⁹ Thus, proposed programs must describe in detail the technology, the facilities for delivery and reception, and technical information about the video, audio, and data transmission, which includes bandwidth, telecommunications line, and computer systems or network information.¹²⁰

While the Committee’s definition of the legal learning community emphasizes the physical setting of the law school, it does not necessarily follow that this community is completely restricted to interactions in real space and time on the law school campus. The

¹¹³ *Id.* at 13.

¹¹⁴ *See id.* at 12-13.

¹¹⁵ *Id.* at 13

¹¹⁶ Indeed, the first videoconferencing experiment in distance learning was transmitted between two law schools, California Western Law School in San Diego, California, and Cleveland Marshall College of Law in Cleveland, Ohio. *See Johnson, supra note 5.*

¹¹⁷ Temporary Guidelines, *supra note 12*, at 13.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *Id.*

Temporary Guidelines state, for example, that distance education technology may be used effectively to deliver the classroom component required by most law schools in peripheral programs such as externships and clinics.¹²¹ Because students frequently are required to be off-campus, sometimes all semester, in order to take part in these programs, distance education in this instance appears to be an acceptable substitute for on-campus instruction.¹²²

Distance learning technology such as e-mail and Internet communication that merely supplements on-campus instruction would also presumably be acceptable under the Temporary Guidelines.¹²³ Part of the Temporary Guidelines' interactivity requirement might, for example, be satisfied by e-mail and Internet discussion outside of class, supplemented with occasional real-time interactivity. It is possible, therefore, that the "learning community" of the Temporary Guidelines may be expanded and enhanced through distance education technologies.¹²⁴ Online

¹²¹ *See id.*

¹²² *See id.* The Temporary Guidelines recognize that distance learning technology makes it possible for faculty who supervise clinic and extern students to "conduct ... in-class sessions in a uniform and convenient fashion." *Id.*

Distance education technologies may also benefit the clients of law school clinics and externship programs. For example, frame relay videoconferencing, which is capable of transmitting video, audio, and data simultaneously, enables clients, attorneys, and students to view and talk with one another and at the same time read, sign, and transmit legal documents. For instance, consider Albany Law School's Disability Law Clinic, which provides legal assistance to individuals living in upstate New York. For many clients and potential clients, it may be difficult to travel to the Clinic office located in Albany, New York. These clients or potential clients might be more likely to travel to a videoconferencing site closer to their homes. Clients living in northern New York near Plattsburgh, for example, could use the legal Services' AAN videoconferencing site there to confer with attorneys and law students at the Clinic.

¹²³ For a detailed description of technological supplementation of law school courses, see Richard Warner et al., *Teaching Law with Computers*, 24 RUTGERS COMPUTER & TECH. L.J. 107 (1998).

¹²⁴ *See* Donald J. Weidner, *The Crises of Legal Education: A Wake Up Call for Faculty*, 47 J. LEGAL EDUC. 92, 98, 100 (Mar. 1997) (contemplating the future of higher education, the author opines that new instructional technologies will soon be used to allow teaching faculty from prestigious law schools to instruct students at a much lower cost than visiting or new faculty professors). Moreover, many users of computer online services have testified that they experience a virtual community when using online services. *See generally* Scott A. Taylor, *Teaching a Law Seminar Over the Internet*, 3 J. INFO. L. & TECH. 11 (Sept. 30, 1996) <<http://elj.warwick.ac.uk/jil/BILETA/1996/default.htm>> (describing the author's experience teaching an Internet seminar through e-mail and emphasizing the positive effect of e-mail on collaborative learning). *But see* Warner et al., *supra* note 123, at 164 (stating that "when the instructor and the students are simultaneously physically present in the same room, the interaction has an immediacy and spontaneity that even the most sophisticated videoconferencing systems cannot approach.").

learning communities already exist in the legal profession. Attorneys, for example, communicate in the virtual legal community of the Counsel Connect online service. Law librarians similarly know and communicate with each other about professional needs and concerns on a "lawlib" list serve.

*B. Frame Relay Videoconferencing and the
Temporary Guidelines*

Videoconferencing combined with e-mail and Internet discussion groups is the distance learning technology that provides the closest simulation of an actual law school classroom experience, and perhaps enhances it. Thus, videoconferencing probably satisfies the requirements of the Temporary Guidelines. Theoretically, for example, a distinguished constitutional law professor could transmit her real-time, interactive videoconference course to dozens of law schools simultaneously. Arguably, such a course would satisfy the accreditation requirements of providing a "sound program of legal education"¹²⁵ and equality of opportunity¹²⁶ to students who would not otherwise have the opportunity to take such a course. A law school might even assert that it must offer its students videoconferencing courses taught by outstanding national scholars and teachers in order to "provide full opportunities for the study of law and entry into the profession by qualified members of groups, which have been victims of discrimination in various forms."¹²⁷ Because videoconferencing via computer makes interactivity possible by a number of means, such as voice and keyboard, students with disabilities may similarly find that computer-supported videoconferencing offers a superior alternative to conventional classroom instruction.¹²⁸ The

¹²⁵ A.B.A. STANDARDS FOR APPROVAL OF LAW SCHOOLS, STANDARD 201(b) (1997) (stating that "a law school shall be so organized and administered that its resources are used to provide a sound program of legal education and to accomplish its mission").

¹²⁶ A.B.A. STANDARDS FOR APPROVAL OF LAW SCHOOLS, STANDARD 212 (1997) (affirming that "[a] law school may not discriminate against individuals with disabilities in its program of legal education ... shall provide full opportunities for the study of law and entry into the profession by qualified disabled individuals")

¹²⁷ A.B.A. STANDARDS FOR APPROVAL OF LAW SCHOOLS, STANDARD 211 (1997).

¹²⁸ STANDARD 212, *supra* note 126 (complying with Interpretation 212-3).

high cost of videoconferencing until recently, however, has placed it out of reach of academia.

With the advent of relatively inexpensive videoconferencing, such as frame relay, more law schools may now be inclined to experiment with videoconferencing. Certainly there is an economic advantage for law schools in providing inexpensive distance learning. A law school could meet many of its curricular needs with distance learning, at a fraction of the cost of hiring a full time law professor for its own faculty.¹²⁹ Hypothetically, if a law teacher taught, for example, a videoconferenced course for ten law schools each school would contribute only a tenth of the teacher's salary.¹³⁰ On the other hand, if high quality distance learning were available, far fewer law schools might be needed. At this time, it is unlikely, however, under the current Standards and the Temporary Guidelines that a law student at an A.B.A. approved law school would be permitted to take a majority of his or her law school courses via distance learning.

Although it remains to be seen if the A.B.A. will permit distance education to flourish in law schools at the Juris Doctorate (J.D.) level, it is possible that videoconferencing may become a staple of graduate law programs. The Temporary Guidelines state that post-J.D. programs such as the Master of Laws (LL.M.) and Doctor of Juristic Science (S.J.D.) may be "considered differently from regular J.D. programs, since the maturation and educational process involved in a J.D. program have already occurred . . ."¹³¹

Similarly, frame relay videoconferencing will probably be used extensively in continuing legal education (CLE) programs where the A.B.A. Standards do not apply. Currently, CLE programs are already offered on-line, by satellite transmission and videotape. The superior quality of videoconferencing, however, would offer attorneys higher quality instruction at a fraction of the cost of attending a "live" CLE.

¹²⁹ See Weidner, *supra* note 124, at 96, 99-103 (asserting that law schools need to adopt cost cutting and product enhancing measures and provide several possible means by which it may be accomplished).

¹³⁰ Warner et al., *supra* note 123, at 164; Steven Keeva, *Stars of the Classroom, Will Top Profs Who Instruct Via Internet Dominate Teaching?* 83- Dec A.B.A.J. 18 (1997).

¹³¹ Temporary Guidelines, *supra* note 12, at 13.

V. CONCLUSION

The A.B.A.'s Section on legal Education and Admission to the Bar is currently engaged in an exploration of the use of distance learning technologies in legal education. To facilitate that exploration, the A.B.A. promulgated Temporary Guidelines to encourage law schools to experiment with the use of distance learning technologies.¹³² The Temporary Guidelines, however, also seek to prohibit any significant substitution of traditional legal education practices with distance learning technology, at least for the J.D. degree.¹³¹ Some forms of distance learning may nevertheless be adopted by law schools not only because they will comply with the Temporary Guidelines but because they are cost effective and offer significant pedagogical advantages as supplements to traditional pedagogy. Of all the technologies available, frame relay videoconferencing provides the closest simulation of a traditional law school learning experience. It can be used very successfully in clinical and externship programs, J.D. and post-graduate programs, and it may provide students and faculty with greater access to prominent legal scholars and teachers. The relatively low cost, combined with the reliability and high quality of frame relay videoconferencing may not only increase the accessibility of legal education but also enhance it.

¹³² See Temporary Guidelines, *supra* note 12, at 12.

¹³¹ *Id.*

APPENDIX A

TEMPORARY DISTANCE LEARNING GUIDELINES*

Principles for Distance Education

Educating a student for a Juris Doctor degree is professional education of a most distinct variety. It involves more than the mere delivery of information or simply learning facts, history or even logic. During a law school education a student is expected to participate in a learning community whereby he or she will ultimately learn, experience, and develop skills and knowledge that will advance the legal system, society and his or her career. This law school experience involves interaction with faculty not only in the classroom, but also in other places and at other times. Students also learn from each other by inquiry and challenge, review and study groups. In sum, law school is an educational process in which a student matures with the law and his or her ability to use and develop it.

As new methods of education develop, legal educators must be aware and ready to implement them in order to provide the best possible legal education to the greatest viable student body. In the last few years various methods of distance education have become available and, certainly, more will present themselves in the future. As legal educators we must consider which of these new methodologies provide appropriate legal education tools.

In a desire to gather information on distance learning for ultimate incorporation into the Standards, the Accreditation Committee of the Section on Legal Education and Admissions to the Bar has directed the Consultant's Office to consult with the law schools on the use of distance education in legal education. In addition it has authorized the Consultant to give permission to law schools to conduct experiments in legal education by the use of such methodologies, while keeping in mind the direction of Standard 304(g) that approved law schools may not grant credit for courses taken by correspondence study.

In the spirit of experimentation the Consultant's Office has developed the following Guidelines and invites law schools to propose distance learning educational experiments. Such experiments may be authorized by the Consultant's Office only for an experimental period. The results of those experiments will be

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reported to a Committee on Technology that was recently appointed by the Chair of the Section. Ultimately that Committee will develop guidelines for the use of distance educational technology that will be submitted to the Standards Review Committee. The Standards Review Committee will consider the proposals and submit them for public debate and comment, and ultimately for adoption.

Consultant's Temporary Distance Education Guidelines:

GUIDELINE ONE: *Site of Reception*

Experiments in which educational programs will be disseminated from one law school and received at another law school will generally comply with the principles of legal education as stated above. Also, if the locale at which the legal educational program is received has a law faculty of significant size, a student body of significant size, and a library or information resource of significant size, the program will generally comply with these principles of legal education. Thus courses received at a law school facility from nonlaw school sites or other educational institutions will generally comply with these principles. It is not necessarily true that a faculty member must be present in the classroom or other reception facility.

On the other hand, a delivery of course work to a person's home or office would generally not be in compliance with these principles. Similarly, delivery to a site that merely has technical personnel to operate and maintain educational or transmission equipment, but does not have a law faculty, is not in compliance with the above principles. Delivery to a secondary site at which a faculty, students and a library or information resource center are to be located may require approval in accordance with Standard 105 and Interpretation 105-1(11) regarding the establishment of a branch campus. Also, because of the special developmental and interactive nature of first-year courses, use of distance education for such course work will not usually be approved at the present time under these Guidelines.

GUIDELINE TWO: *Externships and clinical programs*

The use of distance education may be particularly useful as a means of enhancing externships or clinical program. Such externships and clinical programs may, for example, have classroom components that are difficult to deliver on campus at the law school site. The use of distance education technology in such cases

may be designed to enhance a law student's education and provide greater efficiency. Thus, for example, externships that are physically located at some distance from the law school campus might employ distance delivery systems for the conduct of in-class sessions in a uniform and convenient fashion.

GUIDELINE THREE: *Limited exceptions*

In the spirit of experimentation a limited exception may be granted for a course that is not in strict compliance with the requirements stated herein for faculty size, student size and/or a library or information resource faculty. Such an exception will be granted on an ad hoc basis upon a showing of specific educational benefits to be provided by such a course while maintaining a minimum of the potential shortcomings noted in this document. However, a student may take only one such course (three credit hours) for the purpose of being applied toward the class hour and residence requirements of the Standards.

GUIDELINE FOUR: *Level of program*

Consideration will be given to the program for which the distance education is being offered. Thus, post J.D. programs such as LL.M. and S.J.D. programs may be considered differently from regular J.D. programs, since the maturation and educational process involved in a J.D. program have already occurred for the student.

GUIDELINE FIVE: *Interactivity*

As stated above, interaction between student and faculty is a crucial element to legal education. Thus, such interaction will be required.

GUIDELINE SIX: *Technology requirements*

Technology of poor quality can be a serious hindrance to the delivery of a good educational program. All systems will be expected to operate in a manner that will enhance and not hinder education. To that end the law school will be expected, in its request for authorization to conduct an experiment, to describe the technology to be used, the type of facility from which the program will be delivered and the type of facility to which it will be delivered, the bandwidth and other technical information of any video delivery system, the nature of any computerized delivery system, and other related information.

APPENDIX C

Hypothetical Budget for New Law School

ADMINISTRATION

Dean	\$	140,000.00	
Assistants (2)		50,000.00	
Admissions Director		40,000.00	
Alumni Affairs Director		38,000.00	
Associate Dean		95,000.00	
Benefits		195,000.00	
Financial Aid Director		38,000.00	
Placement Director		38,000.00	
Public Relations Director		40,000.00	
Registrar		40,000.00	
Secretaries (2)		60,000.00	
Student Affairs Dean		50,000.00	
Travel		40,000.00	
			Subtotal \$864,000.00

FISCAL

Financial Director		45,000.00	
Assistant		25,000.00	
Benefits		18,000.00	
Fees (accounting, auditing)		40,000.00	
Legal expenses		45,000.00	
			Subtotal \$173,000.00

INSTRUCTION

Faculty Recruitment		40,000.00	
Legal Skills Instructors (4)		158,000.00	
Secretaries (1.5)		37,500.00	
Faculty Salaries (25)		2,125,000.00	
Benefits		565,000.00	
Part-time Faculty		50,000.00	
Faculty Development		150,000.00	
Summer Salaries (Faculty-8)		80,000.00	
			Subtotal \$3,205,500.00

LIBRARY

Acquisitions		300,000.00	
Consultation		25,000.00	
Director		95,000.00	
Public Service		45,000.00	
Reference		40,000.00	

Technical Services (2)	95,000.00
Circulation	35,000.00
Clerical	60,000.00
Evening & Weekend	30,000.00
Benefits	40,000.00
Students	25,000.00
LEXIS, WESTLAW	35,000.00
Supplies	25,000.00
Equipment, Repairs	75,000.00
Shelving	125,000.00
Travel	15,000.00
subtotal \$1,065,000	

EXPENSES

Development	20,000.00
Equipment	80,000.00
Graduation	20,000.00
Liability Insurance	45,000.00
Orientation	15,000.00
Postage	25,000.00
Public Relations	15,000.00
Publications	25,000.00
Space (maintenance, rental, security)	900,000.00

Subtotal \$1,145,000.00

ACCREDITATION &
CERTIFICATION

ABA fees	10,000.00
ABA consultant	35,000.00
State fees	10,000.00
Travel	15,000.00

Subtotal \$70,000.00

UNIVERSITY OVERHEAD 6,080,000.00
(40% of income)

TOTAL EXPENSES 12,602,500.00

TUITION INCOME

\$19,000 @ (800
students) = 15,200,000.00