



Winter 2003

The E-Brief: Legal Writing for an Online World

Maria Perez Crist

Recommended Citation

Maria P. Crist, *The E-Brief: Legal Writing for an Online World*, 33 N.M. L. Rev. 49 (2003).
Available at: <https://digitalrepository.unm.edu/nmlr/vol33/iss1/4>

This Article is brought to you for free and open access by The University of New Mexico School of Law. For more information, please visit the *New Mexico Law Review* website: www.lawschool.unm.edu/nmlr

THE E-BRIEF: LEGAL WRITING FOR AN ONLINE WORLD

MARIA PEREZ CRIST*

INTRODUCTION

A transformation is underway in the American court system, as courts shift from print communication to electronic communication. Within the court system, the attorney's primary "voice" is the brief.¹ As one court noted, "the appellate brief offers counsel probably their best opportunity to craft work of original, professional, and on occasion, literary value."² This article focuses on the attorney's vital court communication, the trial and appellate brief, and the transition of these briefs from paper medium to electronic media. At this early stage, both the courts and the lawyers that practice before them are beginning to explore the range of options available in electronic communication. If an attorney fails to consider the unique characteristics of electronic communication, a straight switch from paper brief to electronic brief can result in a brief that fails to achieve the goals intended and can even be counter-productive. Electronic communication can enhance advocacy, but lawyers must do more than scan in a paper brief to achieve a persuasive document. An effective advocate in the new millennium needs to understand electronic communication and the role of its key characteristic: hypertext.³ Through this understanding, lawyers can craft briefs that use technology effectively.

In part I, this article will describe the growing acceptance and encouragement of electronic communication within the American court system, particularly within the federal courts. In response to their decisions to accept electronic submissions, jurisdictions throughout the United States have received a wide variety of electronic

* Professor of Lawyering Skills, University of Dayton School of Law. J.D., University of Michigan Law School (1981); B.A., Northwestern University (1978). I would like to thank Professor Rebecca Cochran and Derek Bolen for reviewing the manuscript and providing thoughtful comments and much appreciated editorial assistance. This article was supported by a generous grant from the Association of Legal Writing Directors.

1. The importance of the trial and appellate brief has grown in recent years. According to Richard Neumann,

there is so much litigation now that courts are increasingly dependent on written arguments submitted by attorneys. Many—perhaps most—appeals today are decided without oral argument and without any other personal contact between attorneys and judges. On appeal, the written brief bears the primary burden of persuading the court. A similar evolution is occurring in trial courts. It is not unusual today for a judge to complete a case without a trial, without a hearing, without an oral argument, without a conference in chambers, and solely on the basis of the attorneys' written submissions in connection with a motion to dismiss or a motion for summary judgment.

RICHARD K. NEUMANN, JR., *LEGAL REASONING AND LEGAL WRITING: STRUCTURE, STRATEGY AND STYLE* 287 (4th ed. 2001). A study of the 1990 U.S. Court of Appeals docket revealed that oral arguments were allowed in only 44.8% of the cases within all the circuits and in as low as 25.8% within the Third Circuit. RUGGERO J. ALDISERT, *WINNING ON APPEAL: BETTER BRIEFS AND ORAL ARGUMENT* 14 (rev. 1st ed. 1996) (leading the author to conclude that "[i]n the U.S. Court of Appeals, the advocate's major tool is the written brief, not oral presentation").

2. *In re Marriage of Shaban*, 88 Cal. App. 4th 398, 410 (2001).

3. A hypertext document is an online network of information. Units of information in a hypertext system are called "nodes." A node may be any size, from a single word to an entire book. Moreover, a node can contain information in different forms: text, graphics, video, and audio. Nodes are connected to each other by an electronic cross-reference system referred to as "links." Clicking on a link immediately accesses another node. A hypertext system can include internal links within the document; links can span separate documents or even link to external sources like the World Wide Web. *HYPERTEXT/HYPERMEDIA HANDBOOK 4* (Emily Berk & Joseph Devlin eds., 1991) [hereinafter *HYPERTEXT HANDBOOK*].

briefs.⁴ These electronic submissions reflect varying levels of technical capabilities and also demonstrate the difficulties attorneys face in defining just what an electronic brief is or should be.

To provide some guidance to attorneys crafting briefs for electronic submission, part II of this article analyzes current research on electronic communication from experts in rhetoric, cognition, and computer usability.⁵ These experts raise relevant concerns about the strengths and constraints inherent in electronic communication. Finally, based on the research in part II, part III proposes a new "tech-rhetoric"⁶ for the legal community and offers guidelines and strategies for lawyers to use in electronic communication with the courts. While many of these recommendations may reflect common principles of effective legal writing, these principles are more vital online than in print. As the practice of law shifts towards the use of electronic briefs and "paperless" litigation, attorneys and judges will need to develop the specialized skills of tech-rhetoric.

I. THE FUTURE IS NOW—THE CURRENT STATE OF ELECTRONIC COMMUNICATION IN THE COURTS

The changing landscape of court communication has three major aspects: the growing acceptance and requirement of electronic filing within the courts, the limited procedural rules governing electronic submissions, and the response of the practicing bar. All of these perspectives underscore the growing need for tech-rhetoric. First, virtually every federal and state appellate court in the United States has a web site where legal practitioners and the public can obtain basic court information and download recent opinions via the Internet.⁷ As courts find themselves inundated with the problems associated with a print-based system,⁸ the motivation to move to electronic media is compelling. By 2005, it is expected that all federal courts will participate in the Case Management/Electronic Case Files (CM/ECF) program.⁹ According to one judge, "The CM/ECF program will bring

4. See discussion *infra* part I.B.

5. See, e.g., JAKOB NIELSEN, *DESIGNING WEB USABILITY: THE PRACTICE OF SIMPLICITY* (2000); Gary Heba, *HyperRhetoric: Multimedia, Literacy and the Future of Composition*, 14 *COMPUTERS & COMPOSITION* 1, 19 (1997); Henrietta N. Shirk, "Hyper"rhetoric: Reflections on Teaching Hypertext, *TECHNICAL WRITING TEACHER* 18-3, 1991, at 189; Janice Tovey, *Organizing Features of Hypertext: Some Rhetorical and Practical Elements*, *J. BUS. & TECH. COMM.* 12-3, 1998, at 371; see also Jakob Nielsen, *The AlertBox*, at <http://www.useit.com/alertbox> (last visited Jan. 15, 2003); John S. Rhodes, *WebWord*, at <http://www.webword.com> (last modified Jan. 15, 2003).

6. In this article, the term "tech-rhetoric" is used to refer to written communication in an electronic environment. This communication is not only written in the electronic environment but also read and used within an electronic environment. This shift in platform from a paper environment to an electronic environment, and the challenges it presents to the legal writer and reader, is the central thesis of this article. "The new medium compels us to acknowledge that all previous forms of writing are as much technologies as fully computerized hypertext—that writing itself is not merely influenced by technology, but rather is technology." JAY DAVID BOLTER, *WRITING SPACE: THE COMPUTER, HYPERTEXT, AND THE HISTORY OF WRITING* 239 (1991).

7. One of the major legal portals providing links to state and federal courts is FindLaw at <http://www.findlaw.com> (last visited Jan. 15, 2003). See also COURTS.NET at <http://courts.net> (last updated Nov. 24, 2002).

8. Print documents present significant storage and access problems for the courts and can be a major budgetary drain. Many of the problems with print-based court systems and the need for electronic filing are documented in COURTS.NET, *Electronic Filing and the Courts*, at <http://www.courts.net/efiling.htm> (last updated Dec. 1, 2002) [hereinafter COURTS.NET].

9. The current status of the CM/ECF project is continuously updated at the PACER web site. Case Management/Electronic Case Files (CM/ECF) Fact Sheet, November 2002 at <http://www.pacer.psc.uscourts.gov/>

about possibly the most significant change in the way federal courts do their work since the adoption of the Federal Rules of Civil Procedure in 1938.”¹⁰ The use of electronic filing is a growing trend in state courts as well.¹¹ Therefore, while the electronic information flow began when courts sent out information to the legal community, increasingly the courts are expecting a reciprocal exchange of information. As electronic filing gradually transforms the court’s procedural infrastructure, the use of electronic submissions will dominate. Second, while procedural rules have emerged to offer some guidance concerning electronic submissions, the landscape of this new electronic environment for briefs remains undefined. As a result, during the transition from print to electronic format, attorneys have responded with a variety of electronic media and formats for their briefs. These experimental briefs raise policy, as well as rhetorical, issues for the future of electronic communication within the American court system.

A. Electronic Filing—the American Court System’s Change in Infrastructure

The crippling effect of paper on the American court system is well documented.¹²

cmecf/index.html (last visited Jan. 7, 2003) [hereinafter CM/ECF Fact Sheet].

10. Judge Robertson, a U.S. District Judge for the District of Columbia and member of the Judicial Conference Committee on Automation and Technology, has been a vocal advocate for court technology. His remarks were part of a conference presentation at the Sixth National Court Technology Conference, National Center for State Courts, held on September 14-16, 1999. During the Super Session, five state and federal judges who have developed electronic filing projects in their courts discussed the challenges and advantages of electronic filing. Judge Robertson’s remarks appear in *Super Session: Judges’ View of Electronic Filing: Electronic Case Filing in the Federal Courts* at <http://www.ncsc.dni.us/NCSC/TIS/TIS99/CTC6/JudgesSuper/CTC6SuperEfileing.htm> (last visited Jan. 17, 2003).

11. J. DOUGLAS WALKER, ELECTRONIC COURT DOCUMENTS: AN ASSESSMENT OF JUDICIAL ELECTRONIC DOCUMENT AND DATA INTERCHANGE TECHNOLOGY 7-10 (1999) (describing state court initiatives involving Judicial Electronic Document and Data Interchange (JEDDI) protocols for electronic filing systems). The web site for the National Center for State Courts is also a good source for current developments in state court electronic filing and can be found at <http://www.ncsconline.org> (last modified Jan. 15, 2003).

12. Many commentators have expressed concern with print-based information systems within the courts. See, e.g., Philip A. Talmadge, *New Technologies and Appellate Practice*, 2 J. APP. PRAC. & PROCESS 363 (2000) (focusing on the existing court system in Washington state and, while admitting there is judicial recalcitrance, suggesting the benefits of electronic filing systems outweigh the initial difficulties); James E. McMillan et al., *A Guidebook for Electronic Court Filing*, at <http://www.ncsc.dni.us/NCSC/TIS/TIS99/electr99/Guidebook/HTML/EfileWest.htm> (last visited Jan. 15, 2003) (examining electronic court systems through a sponsorship grant by West Group to the National Center for State Courts). One judge has been especially vocal about the inefficiencies of a paper-based system:

Inventory, it has been said, is the root of all evil. Well certainly in the dispute resolution business, our case files (inventory) are the root of all evil. You would reach this conclusion if you came and watched our couriers walk around with their carts, moving paper about our 400,000-square-foot building. The problem is generated by the fact that a judge needs paper to decide. The business of the Court is to decide. The paper that needs to be in front of the judge comes from multiple sources. The problem is big and getting bigger. We move a file around for decisions at least five times before the case becomes final. If you take that times the 40,000 cases that we might have in our courtrooms in a one-year period, that is 200,000 moves we have to deal with every year. When we were planning to build the Courthouse addition, we did a study to determine the cost of those 200,000 moves: \$880,000 a year in manpower to move that paper around. On the other side of the equation, outside of the building, is the public’s access to the Court’s documents. The public, particularly lawyers, need to look at the files to find out information. This requires that the file be located. Chances are that the file is tied up in one of its five moves. The public’s access to documents requires physical presence, time, and money, yet there is no guarantee that the paper, which is needed, can be located.

Judge Arthur M. Monty Ahalt, *JusticeLINK, Prince George’s County, Maryland Electronic Filing Pilot*, at

With rapidly expanding dockets, courts using a paper-based system are concerned with storage and access issues related to voluminous court documents. For example, in the early 1980s, the filing system for the Wayne County Circuit Court, serving Detroit, Michigan, came to a virtual standstill when court personnel were forced to relegate filings to storage boxes in a warehouse without attempting to enter the documents into court files or to get the documents organized.¹³ In response to the burden that paper systems place on courts, many state and federal courts have experimented with electronic case management systems, especially courts facing busy dockets due to complex mass tort litigation.¹⁴ Electronic filing allows the courts to realize significant savings in maintenance and storage. Under one conservative estimate, a paper-based system requiring 500 linear feet of shelf storage space (approximately 50 four-drawer filing cabinets) could be stored on a single shelf using currently available technology.¹⁵

Courts also recognized the problems that a paper-based system generates for judicial access. In a report prepared by the Administrative Office of the U.S. Courts,¹⁶ with substantial input from judges and court staff, the following problems were noted:

- Paper files are cumbersome to organize, difficult to retrieve quickly, and are subject to the access limitations of normal business hours.
- Paper files are usually only available to one person at a time, limiting the ability of a panel of judges or their clerks to access or work on files at home.¹⁷
- Paper files require multiple copies to file, distribute, maintain and store, all of which must be done manually with a risk that files will be lost or misfiled.¹⁸

Paper-based systems result in inefficient staffing because of the inordinate time needed to search for and handle paper case files, and they result in the increased costs associated with printing, copying, and mailing paper documents.¹⁹ The difficulties in maintaining and accessing court files are not limited to judges and court staff. The cumbersome nature of paper-based filing systems makes access for

<http://www.ncsc.dni.us/NCSC/TIS/TIS99/CTC6/JudgesSuper/CTC6SuperEfiling.htm> (last visited Jan. 17, 2003) (describing the electronic filing project in Prince George County, Md.).

13. See COURTS.NET, *supra* note 8.

14. Asbestos litigation in the U.S. District Court for the Northern District of Ohio was the catalyst for electronic filing in that court in 1996. The electronic filing experiment was so successful that it is considered the "backbone" of the current CM/ECF project. See CM/ECF Fact Sheet, *supra* note 9 and accompanying text. Similarly, the demands of fen/phen litigation in the U.S. District Court for the Eastern District of Pennsylvania motivated the court to adopt electronic filing. See Robert Plotkin, *Electronic Court Filing: Past, Present and Future*, at <http://www.lexisone.com/practicemanagement/pmlibrary/electroniccourtffiling.html> (last visited Jan. 15, 2003).

15. See Plotkin, *supra* note 14 (noting there would also be a significant savings in the amount of time court staff spend searching for and handling case files).

16. Leonidas Ralph Mecham, Admin. Office of the U.S. Courts, *Electronic Case Files in the Federal Courts: A Preliminary Examination of Goals, Issues, and the Road Ahead (Discussion Draft 3)* (Mar. 1997) at <http://www.uscourts.gov/casefiles/ecfmar97.pdf> (last visited Jan. 17, 2003).

17. The need to share a case file or bear the cost of its reproduction is a common occurrence in the federal courts. Cases are often assigned concurrently to a district judge and a magistrate judge. Panels of judges, such as a court of appeals panel, a three-judge district court, or a bankruptcy appellate panel, often must share case files.

18. Mecham, *supra* note 16.

19. See Plotkin, *supra* note 14.

the public inconvenient and costly.²⁰ Thus, a paper-based filing system causes access and storage problems for the courts, which in turn slows the judges in their efforts to administer justice and hampers public access to documents.

In light of these difficulties, the electronic environment is fast becoming a viable option for struggling court systems. As one commentator has noted, "The technological standards underlying the Web and the infrastructure that has been developed to support such standards provide a convenient, relatively inexpensive, and increasingly ubiquitous means for electronic communication that provides a natural foundation for electronic filing systems."²¹ Similarly, court personnel have become more comfortable with communication technology such as e-mail, and they are becoming less skeptical of an electronic filing system for their courts.²² The demand for an electronic environment is growing among the judiciary. Judge James Mehaffy, a proponent of electronic filing, noted,

Law must follow society. The legal system must keep up with the rest of the business world in delivering its product—justice—in the least expensive and most efficient way possible. If we continue to use quill pens, our justice system will truly become the anachronism it is already accused of being by the public. Even though we are players in an adversary process, we must all become co-counsel in prosecuting the case for technological improvement.²³

In response to the concerns over storage and public access of court files, the federal judiciary created the Public Access to Court Electronic Records (PACER),²⁴ an electronic public access system that permits registered users to obtain case and docket information from federal appellate, district, and bankruptcy courts.²⁵ The primary purpose of PACER is to implement a streamlined system for the public to have access to court information and dockets.²⁶ While docket information is entered

20. *Id.*

21. *Id.*

22. See *New Chair Sees IT Advantage for the Courts*, 3 THE THIRD BRANCH (Mar. 2001) available at <http://www.uscourts.gov/ttb/march01ttb/interview.html> [hereinafter *IT Advantage*] (containing an interview with Judge Edwin L. Nelson, who was appointed to the U.S. District Court for the Northern District of Alabama in 1990). Judge Nelson was appointed chair of the Judicial Conference Committee on Automation and Technology in October 2000. In this article, Judge Nelson describes how federal judges initially resisted e-mail but now "believe that a reliable, robust, and secure e-mail system is essential to the performance of our mission-critical functions." *Id.*

23. Judge James Mehaffy, *Electronic Filing: Its Development and Its Future*, at http://www.ncsconline.org/WC/Publications/KIS_ElFileCTC6super3Pub.pdf (last visited Jan. 15, 2003) (describing a view of a judge who is self-described as "genetically predisposed to be computer illiterate. Until I became a judge about five years ago, I had never touched a computer and could barely type. I am definitely not a computer geek.") The article describes the 1995–1996 e-filing project in the 58th District Court, Jefferson County, Texas, for which The Honorable James W. Mehaffy is a judge.

24. PACER is a service of the U.S. Judiciary. The Administrative Office of the U.S. Courts runs the PACER Service Center. See PACER at <http://pacer.psc.uscourts.gov> (last visited Jan. 15, 2003). The PACER system replaces an earlier federal court electronic access initiative, RACER.

25. *Id.* PACER offers electronic access to case dockets to retrieve court information such as a listing of all parties and participants in a law suit including judges, attorneys, and trustees; descriptive information such as the cause of action, nature of the suit, and dollar demand; a chronology of events in the case record; a claims registry; a daily listing of new bankruptcy filings; appellate court opinions; judgments or case status; and some court documents filed in certain cases. *Id.*

26. *Id.* The U.S. Congress granted the Judicial Conference of the United States the authority to impose user fees for electronic access to case information. The dial-up service for documents carries a charge of \$.60 per minute. Access via the Internet on web-based PACER systems charges \$.07 per page, with a maximum document charge

into the PACER system electronically, documents such as pleadings and briefs are usually scanned in from the paper submission. Users can access docket information and scanned documents through the Internet or by dialing directly to the court site using communication software.²⁷ Because individual courts maintain their own records, there is a growing disparity among courts in how documents are filed, maintained, and accessed.²⁸ Moreover, while the initial emphasis of PACER was on public access, the judiciary recognized advantages for court staff to have access to all court documents in an electronic format. The need for a national standard, coupled with the need to update aging electronic systems for the courts, laid the groundwork for the federal judiciary's Case Management/Electronic Case Files program (CM/ECF).

CM/ECF enhances the PACER system in that CM/ECF permits attorneys to file case documents electronically within the federal courts, while still providing public access to court dockets, as well as to the actual court file. CM/ECF began with several pilot programs throughout the United States in 1999.²⁹ CM/ECF allows attorneys to log in to court web sites with a court-issued password and submit documents to the court electronically. There are no additional costs for filing documents this way. The system automatically sends out a confirmation of receipt and a notice to the parties through e-mail. Litigants get one free download of the document filed. Additional copies are available to PACER users for seven cents a page.³⁰ In March 2001, the national implementation of the CM/ECF program in bankruptcy courts began and is expected to take two to three years.³¹ Federal district courts are expected to come into the system in 2002, with the federal appellate courts to begin participating the following year. It is expected that all federal courts will be on the CM/ECF system by 2005.³² As of August 2002, of those courts already using CM/ECF, more than 14 million documents in more than 3 million cases were already in the system and close to 15,000 attorneys had already filed

of \$2.10. *Id.*

27. *Id.* There is, however, a growing movement to phase out the dial-up access.

28. In the PACER system, each court maintains its own databases and court information. As a result, each jurisdiction has its own access procedure. While accessing information may be comparable from jurisdiction to jurisdiction, the format and the content of the information can vary. *Id.*

29. Christina Rattiner, *New Developments in Court Technology*, 595 PLI/PAT 165, 169 (2000) (containing an excellent bibliography of recommended web sites and articles).

30. See CM/ECF Fact Sheet, *supra* note 9.

31. *Id.* (noting that CM/ECF systems are now in place in ten district courts, fifty-one bankruptcy courts, and the Court of International Trade). The following U.S. District courts have an operational e-filing system in place using CM/ECF: California Northern District, D.C. District, Indiana Southern District, Michigan Western District, Missouri Western District, Nebraska District, New York Eastern District, Ohio Northern District, Oregon District, and Pennsylvania Eastern District.

32. *Id.* ("Under current plans, the number of CM/ECF courts will increase steadily each month into 2005. Each court goes through an implementation process that takes about ten months, and each month four to five additional courts complete the process.").

documents over the Internet.³³ There are similar electronic filing projects within the state courts as well.³⁴

Court reaction to CM/ECF has been favorable. The inherent efficiencies of an electronic filing system for judges and their staff are the main advantage. As one judge noted, "In a more comprehensive sense, electronic filing means the creation of an electronic court file—a court file that would decrease the necessity for the court to have paper in the presence of the judge when a decision is made."³⁵ The advantages of electronic filing go beyond solving storage and access problems.³⁶ Judges have been quick to accept, and even demand, an electronic environment:

In the broader sense, the time is coming, and it won't be that long, when IT [information technology] will be the primary tool of choice for almost every judge in the country, federal and state. Judges will use computers and related equipment as their primary means of communication, case management, legal research, and document creation and filing....In a very few years, the portable computer will be as ubiquitous as long yellow legal pads, number two pencils, dictating equipment, and law books were 10 years ago. Many of us are approaching that circumstance today.³⁷

As technology becomes pervasive throughout society in general, it is understandable that the judiciary would expect similar advancements in the courts.

While electronic filing does offer many advantages, courts are grappling with the issues inherent in the transition to a new media, especially concerns with privacy. CM/ECF allows public access to more than just docket entries. Under CM/ECF, the

33. *Id.* These numbers are even more impressive when one considers how quickly the use of CM/ECF has grown. In two years, the number of documents filed in the CM/ECF system has climbed from 2 million to 14 million and the number of attorneys filing electronic documents has grown from just 500 to over 15,000. Compare Case Management/Electronic Case Files (CM/ECF) Fact Sheet, May 2000 at pacer.psc.uscourts.gov/documents/press.pdf (on file with author) with Case Management/Electronic Case Files (CM/ECF) Fact Sheet, August 2002 at pacer.psc.uscourts.gov/documents/press.pdf (on file with author).

34. The state of Arizona has been a leader in electronic filing. The Pima County Justice Courts of Arizona allow parties to file complaints and answers in small claims cases using Web-based forms. See *Court Filing Fees*, at <http://www.supreme.state.az.us/fees/> (last modified Jan. 7, 2003). In Michigan, the Washtenaw County Trial Court allows attorneys to file briefs as an e-mail attachment. See Plotkin, *supra* note 14. Many state courts are in the process of developing electronic filing state wide. For example, the Supreme Court of Ohio recently adopted new rules establishing minimum standards for all Ohio courts to accept the electronic filing of documents. Because there are approximately ninety different court computer systems in Ohio, the new standards are designed to provide lawyers, as well as the public, some consistency in the electronic filing process from one court to another. See *Court Adopts Minimum Standards for E-filing, Signatures*, Press Release Ohio State Supreme Court Communications Office (May 16, 2001) available at http://www.sconet.state.oh.us/Communications_Office/Press_Releases/2001/0516efiling.asp (last visited Jan. 15, 2003). The text of the new rules can be found at the web site <http://www.sconet.state.oh.us> (last visited Jan. 15, 2003).

35. See Ahalt, *supra* note 12.

36. These advantages are described in Mecham, *supra* note 16:

It is anticipated that ECF will produce an impressive range of benefits to the courts and the people who use the courts, including—

1. improved judge, court staff, and public access to case file information
2. cost savings and efficiencies through increased productivity, and more effective utilization of staff, space, and other resources
3. reduced physical handling, maintenance, and copying of file documents
4. improved docketing, scheduling, case management, and statistical reporting; and
5. enhanced accuracy and efficiency in record maintenance.

Id.

37. See *IT Advantage*, *supra* note 22.

actual court documents are available over the Internet. Moreover, documents entering the system as an electronic file, as opposed to simply being scanned in from a printed page, provide improved access in terms of visual quality and the ability to be printed and downloaded. In hearings before the Administration Office of the U.S. Courts, it was noted that "[m]any of those testifying expressed concerns about the possibility of opening court participants up to the threat of identity theft, stalking, and predatory business practices."³⁸ Before electronic filing, docket information and case filings enjoyed relative obscurity because of the obstacles involved in obtaining the documents. Anyone interested in the contents of a case file would have to go to the courthouse, pore over paper files, and pay for copies to be made.³⁹ In contrast, electronic files are accessible from wherever there is a computer with an Internet connection and by anyone with a PACER account. To address these privacy concerns, the Subcommittee on Privacy and Electronic Access to Case Files of the Court Administration and Case Management Committee of the U.S. Judicial Conference established a web site⁴⁰ and solicited comments on a report titled, "Privacy and Public Access to Electronic Case Files."⁴¹ The comment period ended in February of 2001 and 242 comments were registered.⁴² In September 2001, the U.S. Judicial Conference adopted the recommendations of the sub-committee.⁴³ In

38. *Planned Electronic Filing System for Federal Courts Needs Privacy Protections to Prevent Abuse, Witnesses Urge*, 69 U.S. L. WEEK 2576 (2001) (describing witness statements at a U.S. Judicial Conference hearing on upgrades to the PACER system and urging that there should be privacy protections to safeguard numerical identifying data and limit public access to medical and criminal records). For example, bankruptcy files typically contain the debtor's Social Security number, tax returns, date of birth, and other valuable personal information. The files in Social Security benefit disputes may contain medical reports or other personal information about the claimant. As state courts adopt electronic filing systems, similar privacy concerns may also develop, particularly with respect to confidential family matters involving divorce, property divisions, and custody. See *Annual Report on Trends in the State Courts* (2001 Edition) 24-28, available at <http://www.ncsonline.org/CourtInfoPortal/search/search1.html> (last visited Jan. 17, 2003).

39. In a case denying a reporter's request for information compiled from an FBI database into a criminal rap sheet, the U.S. Supreme Court referred to the court files from which the database was prepared as residing in "practical obscurity." *United States Dept. of Justice v. Reporters Comm. for Freedom of the Press*, 489 U.S. 749, 800 (1989); see also Joel Rothman, *Privacy in Federal Court Web Sites*, BROWARD DAILY BUS. REV., May 9, 2001, at 10.

40. See Judicial Privacy Policy Page, at <http://www.privacy.uscourts.gov> (last updated Mar. 2002).

41. *Report on Privacy and Public Access to Electronic Case Files*, Judicial Conference Committee on Court Administration and Case Management (June 26, 2001), at http://www.uscourts.gov/Press_Releases/att81501.pdf (last modified Sept. 2001).

42. The actual comments are posted and available for viewing at <http://www.privacy.uscourts.gov/matrix.htm> (last modified Jan. 24, 2001).

43. The Judicial Conference Committee on Court Administration and Case Management submitted the following recommendations:

1. There should be consistent, nationwide policies in federal courts in order to ensure that similar privacy protections and access presumptions apply regardless of which federal court is the custodian of a particular case file.
2. Notice of these nationwide policies should be given to all litigants in federal court so that they will be aware of the fact that materials submitted in a federal court proceeding could become available on the Internet.
3. Members of the bar must be educated about the policies and the fact that they must protect their clients by carefully examining the documents that they file in a federal court for sensitive, private information and by making the appropriate motions to protect documents from electronic access when necessary.
4. Except where otherwise noted, the policies apply to both paper and electronic files.
5. Electronic access to docket sheets through PACERNet and court opinions through court web

these recommendations, the U.S. Judicial Conference calls for nationwide consistency in any privacy policies and for attorney sensitivity to the need to protect client privacy with appropriate motions.⁴⁴

In addition to the concerns over privacy, electronic filing generates concerns about the authenticity and security of court documents. The Federal Rules of Civil Procedure, as well as local rules, require documents filed with the court to be signed.⁴⁵ In addition, court documents become part of the public record and should not be vulnerable to alteration. Technology accommodates these concerns with digital signatures,⁴⁶ attorney login and password requirements for authentication, and the use of Portable Document Format (PDF).⁴⁷ Yet despite these accommodations, some courts are still reluctant to move forward with e-filing systems.⁴⁸

In addition to these technical concerns, many courts have legitimate concerns about the special needs of the pro se litigant. Some court personnel are concerned that they will need to make special accommodations for the needs of pro se litigants who might be unable to file documents electronically.⁴⁹ However, in a pilot project,

sites will not be affected by these policies.

6. The availability of case files at the courthouse will not be affected or limited by these policies.
7. Nothing in these recommendations is intended to create a private right of action or to limit the application of Rule 11 of the Federal Rules of Civil Procedure.

Report of the Judicial Conference Committee on Court Administration and Case Management on Privacy and Public Access to Electronic Case Files, at <http://www.privacy.uscourts.gov/Policy.htm> (last visited Jan. 15, 2003).

The Committee further recommended that all civil case files, except Social Security cases, should be electronically available, but that efforts should be made to maintain the privacy of "personal data identifiers." *Id.* The Committee recommended against electronic availability of criminal case files but will revisit that issue in two years. With respect to bankruptcy cases, the Committee recommended electronic availability but also recommended that measures be taken to maintain the privacy of a debtor's Social Security number. *Id.*

44. *Id.*

45. See FED. R. CIV. P. 11; N. D. OHIO R. 10.1 (2002).

46. Digital signatures use public key encryption technology to send secured documents that a certification authority, like a traditional notary, authenticates. See James Crowell, *The Electronic Courtroom*, 4 B.U. J. SCI. & TECH. L. 10, 13 (1998). For an example of a digital signature rule, see CAL. GOV'T CODE § 15.5(a); McBride Baker & Coles Summary of Electronic Commerce & Digital Signature Legislation at http://www.mbc.com/ecommerce/legislative_3.asp?state=all (last visited Feb. 7, 2003).

47. The federal court system and many state courts have settled on the Adobe® Portable Document Format (PDF). Documents created using other word processing methods are converted to PDF format. PDF documents retain the document's original format but can be viewed across a broad range of hardware and software platforms with the free Adobe Acrobat® Reader® software. PDF documents can also be secured to prevent any alteration. See *Adobe Legal Solutions* at <http://www.adobe.com/products/acrobat/legalsolutions2.html> (last visited Jan. 15, 2003). "The fact that a PDF document maintains its integrity from one platform to another, that it can be made identical from electronic to paper, and that PDF is protectable, verifiable and searchable, has led numerous courts to adopt PDF as a standard." Rothman, *supra* note 39. For more information about PDF, see discussion *infra* part I.B.2.

48. John Christian Hoyle, *E-filing Rides to Rescue and...Stumbles* (June 3, 1999), at <http://www.csmonitor.com/durable/1999/06/03/p19s1.htm> (last visited Jan. 15, 2003) (noting that the expense in setting up an e-filing system and the potential incompatibility among e-filing systems create obstacles for implementation). At a web site that tracks e-filing projects in the United States, the following state courts were not currently pursuing an e-filing project: Alabama, Arkansas, Connecticut, Hawaii, Idaho, Indiana, Kentucky, Louisiana, Massachusetts, Maine, Missouri, Montana, New Hampshire, Nevada, North Dakota, Rhode Island, South Carolina, South Dakota, Vermont, West Virginia, and Wyoming. See *E-filing Projects in the U.S.* at <http://www.wendytech.com/efilingprojects> (last visited Jan. 15, 2003).

49. See Wendy R. Leibowitz, *Plugging into Electronic Filing*, LEGAL INTELLIGENCER, Nov. 11, 1999, at 7. Pro se litigants can also be accommodated by allowing them to submit paper documents that can be immediately imaged and filed.

the Second Circuit Court of Appeals has found a beneficial use of technology in pro se cases.⁵⁰ Of the approximately 5000 appellate filings received each year in the Second Circuit, approximately forty-six to forty-eight percent are filed pro se, and of those, about twenty-eight percent are filed by prisoners.⁵¹ According to court personnel, there were significant problems associated with the manual handling of these claims, which were often of a "rambling nature" and difficult to decipher.⁵² To counter these problems, the pilot project between the courts in the Second Circuit and the New York Department of Corrections allowed prisoners to file their pleadings electronically. Through the use of preformatted forms for all types of motions, prisoners could select the appropriate motion without having to describe the problem in a lengthy narrative. While such a system may encourage more filings, "it's not the volume of filings that kill [sic] us, it's that each individual case is so labor intensive. This new system will allow me to allocate judicial resources differently and maybe direct more resources to the civil side."⁵³

Thus, while electronic filing does have impediments to its full implementation, the courts have found that these problems are not insurmountable and concluded that the advantages of the technology outweigh the initial difficulties. Although electronic filing has not fully eliminated the need for paper,⁵⁴ as electronic filing becomes the norm, the judiciary will become increasingly comfortable in an electronic environment and even more aware of the advantages of electronic media over the paper medium.

B. Procedural Rules Regarding Electronic Briefs

As electronic filing projects at the state and federal level gather steam, many courts have begun to establish ground rules for electronic brief submissions, often referred to as "corresponding" or "companion" briefs.⁵⁵ While the rules still contemplate the submission of paper briefs, many new local rules allow and encourage briefs in an electronic format. Electronic submissions first received federal procedural support in 1996, when Federal Rule of Civil Procedure 5(e) and Federal Rule of Appellate Procedure 25(a)(2)(D) were amended to allow local courts to enact rules permitting "papers to be filed, signed, or verified by electronic means."⁵⁶ The enabling language in these rules has led to other rules for electronic

50. George Lange, *the Second Circuit Court of Appeals, CD-ROM Briefs, Electronic Filing, the Web and Video Arguments*, METRO. CORP. COUNS., July 1998, at 22 (col.1). This project for processing pro se case filings was described in an interview with George Lange, the Second Circuit Court of Appeals Circuit Executive, concerning technology uses in the Second Circuit.

51. *Id.*

52. *Id.*

53. *Id.*

54. Despite embracing CM/ECF, the federal judiciary retains a need for paper by sometimes requiring a "chambers copy." See e.g., CAL. N.D. R. 5-1. On court web sites describing CM/ECF procedures, some sites alert practitioners to a judicial preference for paper. *Who Wants Paper in CM/ECF?*, at <http://www.mow.uscourts.gov/CM/ECF/whowantpaper.PDF> (last visited Jan. 15, 2003); *Judges Procedures*, at <http://www.paed.uscourts.gov/us08001.shtml> (last visited Jan. 15, 2003).

55. See, e.g., FED. R. APP. P. 32(e) (2002); 1ST CIR. R. 32.1 (2002). As one commentator noted, "The old system of paper briefs is simply archaic. Lawyers should submit briefs in electronic form....The technology exists, and it should be used." Talmadge, *supra* note 12, at 370.

56. The Judicial Conference authorized electronic filing in December 1996. See FED. R. CIV. P. 5(e) (2002).

service and signatures and rules allowing the faxing of briefs.⁵⁷ Some courts have also revised their local rules to accommodate the electronic brief. The response to electronic briefs in the federal circuits has taken three main approaches. The most common approach to dealing with electronic companion briefs is on an ad hoc basis. Many circuits have no local rule that addresses the parameters of an electronic format for briefs.⁵⁸ Instead, these circuits consider the propriety of an electronic submission on a case-by-case basis, usually upon a party's motion. Under the second approach, some circuits make companion electronic submissions mandatory. These local rules require that when submitting a brief created by computer, the attorney must include a disk containing the computer file along with the paper submissions.⁵⁹ Jurisdictions that require electronic brief submissions typically also mandate that the electronic submission be on a 3.5-inch disk in whatever file format the brief was first created in.⁶⁰ Pairing a paper brief with a "companion" electronic brief allowed courts to acclimate themselves to the issues that arise concerning electronic

Rule 25 states in full, "A court of appeals may by local rule permit papers to be filed, signed, or verified by electronic means that are consistent with technical standards, if any, that the Judicial Conference of the United States establishes. A paper filed by electronic means in compliance with a local rule constitutes a written paper for the purposes of applying these rules." FED. R. APP. P. 25 (2002). The Advisory Committee Notes state, "The amendment permits, but does not require, courts of appeals to adopt local rules that allow filing of papers by electronic means. However, courts of appeals cannot adopt such local rules until the Judicial Conference of the United States authorizes filing by facsimile or other electronic means." *Id.* Advisory Committee's Notes.

57. As of December 1, 2001, amended FEDERAL RULES OF CIVIL PROCEDURE 5(b)(2)(D) and 5(b)(3) permit service of process by e-mail in certain circumstances:

Service under Rule 5(a) is made by:

D) delivering a copy by any other means, including electronic means, consented to in writing by the person served. Service by electronic means is complete on transmission....If authorized by local rule, a party may make service under this subsection (D) through the court's transmission facilities.

FED R. CIV. P. 5(a) (2001). *See also* *Rio Props., Inc. v. Rio Int'l Interlink*, 284 F.3d 1007 (9th Cir. 2002) (holding that an Internet gambling operation based in Costa Rica had been properly served via e-mail).

58. As of this writing, the following Circuits have no local rule concerning the permissibility or format for electronic briefs: D.C., Second, Third, Fourth, Sixth, Ninth, and Tenth. Even jurisdictions using CM/ECF encourage an ad hoc approach in their local rules by simply referring to existing requirements. *See, e.g.,* OHIO N.D. L.R. 5.1 (2002) ("A paper filed by electronic means in compliance with this Rule constitutes a written paper for the purposes of applying these Rules and the Federal Rules of Civil Procedure."). While some Circuits reported that local rules were under consideration, most court staff stated that there was little interest in electronic briefs and that a motion to the court usually handled the few attempts at electronic submissions. Telephone interviews with clerks of various courts (all of whom requested they not be quoted). Although most circuits reported that these motions to file an electronic brief were usually granted, court staff at the Sixth Circuit Court of Appeals reported that, pending a new local rule, companion electronic briefs have not been permitted, even upon motion. *Id.*

59. For example, the Fifth Circuit's local rule is as follows:

Where a party is represented by counsel and generates his or her brief by computer, one computer readable disk copy of the brief must be filed with the clerk, and a second computer readable disk copy served on each party separately represented by counsel. The disk must contain nothing more than the brief....The brief must be on a 3.5 inch disk. If available, the court greatly prefers the use of WordPerfect 5.1 or greater to insure compatibility with our systems.

5TH CIR. R. 31.1 (2002). The First and Eighth Circuits have similar local rules. *See* 1ST CIR. R. 32, 8TH CIR. R. 28A. *See also* 7TH CIR. R. 31(e) (requiring a companion electronic submission, but not limited to submissions on a 3.5-inch disk). State courts are beginning to follow suit, as well. For example, the North Dakota Supreme Court requires a brief on disk to accompany all paper briefs. A standard 3.5-inch disk can hold up to 300 pages of word-processed text. Starting in October 1997, and becoming mandatory in 1999, the North Dakota Supreme Court required disks to enable judges easier access to briefs. *See* Bradley J. Hillis, *Electronic Briefs in Trial and Appellate Courts* (Apr. 20, 2000), at <http://www.jurist.law.pitt.edu/courttech3.htm> (last visited Jan. 17, 2003) (describing how briefs on disk can be a "back-door" way to get to e-filing).

60. *Id.*

submissions.⁶¹ Finally, while not requiring electronic brief submissions, two federal circuits, the Federal Circuit and the Eleventh Circuit, have promulgated local rules that contain detailed guidelines for electronic brief submissions.⁶² While not mandating electronic submissions, these local rules encourage attorneys to submit electronic briefs by providing specific guidelines for the submissions. Some state courts are also using this approach. Under a proposed new rule of appellate procedure, the Washington Supreme Court states that "corresponding briefs, filed as companions to printed briefs are allowed and encouraged..." provided that there is adequate notice to the court and that general format rules are followed.⁶³ Similarly, the Second Appellate District of the California Court of Appeals issued an "Invitation to File Electronic Records and Briefs."⁶⁴ In its pilot program, the court

61. Michael D. Fibison, *CD-ROM Brief Foreshadows the Electronic Courtroom: The Visual Power of a Good Witness Can Sway a Judge's Decision*, U.S. BUS. LITIG., May 1997, at 17.

62. In the Eleventh Circuit, attorneys can file electronic briefs in three ways: on a 3.5-inch floppy disk, on CD-ROM, or as an Internet upload:

(a) *IBM-formatted, 3.5 inch floppy disk*. An electronic brief provided on floppy disk shall be enclosed in an appropriate holder and fastened securely to the last page of each copy of the paper brief filed with the court. Appendices need not be included in the electronic brief. Hypertext links to cases, statutes, and other reference materials which are publicly available on the Internet are authorized. Each disk shall be labeled with the following information: appeal docket number, short style of the appeal, type of brief (e.g., appellant's, appellee's, appellant's reply, etc., with or without hypertext links), and the document format (PDF unless otherwise approved in advance by the clerk in writing). One copy of such disk shall also be served on counsel for each party separately represented as well as on each *pro se* party. The certificate of service shall indicate service of the brief in both paper and electronic formats.

(b) *ISO Mode 1 (yellow book) CD-ROM*. An electronic brief provided on CD-ROM shall be enclosed in an appropriate holder and fastened securely to the last page of each copy of the paper brief filed with the court. Appendices need not be included in the electronic brief. Hypertext links to cases, statutes, and other reference materials which are publicly available on the Internet are authorized. In addition, documents referenced in hypertext links may also be included on the CD-ROM itself provided the materials are in PDF format and there is no infringement of copyrighted works. Each CD-ROM shall be labeled with the following information: appeal docket number, short style of the appeal, type of brief (e.g., appellant's, appellee's, appellant's reply, etc., with or without hypertext links), and the document format (PDF unless otherwise approved in advance by the clerk in writing). One copy of such CD-ROM shall also be served on counsel for each party separately represented as well as on each *pro se* party. The certificate of service shall indicate service of the brief in both paper and electronic formats.

(c) *Internet Upload*. An electronic brief may be provided by uploading the brief to the court's Web site at www.ca11.uscourts.gov. Prior to uploading the first brief, the uploading party shall obtain an upload account name and password from the clerk. This account name and password may be used for providing future electronic briefs only....Hypertext links to cases, statutes and other reference materials which are publicly available on the Internet are authorized. As part of the upload process, the uploading party must provide the appeal docket number, short style of the appeal, type of brief (e.g., appellant's, appellee's, appellant's reply, etc., with or without hypertext links), and the document format (PDF unless otherwise approved in advance by the clerk in writing). Because the documents are publicly available on the Internet to all parties, the electronic brief need not be served on counsel or *pro se* parties in the appeal. The certificate of service shall indicate service of the brief in paper format and shall also indicate the date and time that the Internet upload was completed.

11TH CIR. R. 31-5 (2002). See also FED. R. APP. P. 32(e) (2002) (limiting electronic briefs to CD-ROMs and prohibiting any hypertext links to materials outside the CD-ROM itself. "A corresponding brief must be self-contained and static.").

63. WASH. SUP. CT. R. APP. P. 10.9 (proposed rule available from author).

64. California Court of Appeals, Second Appellate District, *Invitation to File Electronic Records and Briefs in the Second District Court of Appeal* (2002) (available from author) [hereinafter *Invitation to File*].

hopes to evaluate the "usefulness of electronic media and the appropriate procedure for their acceptance."⁶⁵

The experience in the federal circuits and in the state courts reflects the variety of options for electronic briefs. At the most simple level, paper briefs can be scanned in at the clerk's office to comply with electronic filing requirements.⁶⁶ Increasingly, however, the courts demand more sophisticated electronic submissions. This is evidenced by the growing number of courts that specifically prohibit scanned submissions and require hypertext links between the table of contents and the argument.⁶⁷ As the technology becomes more accessible, courts are increasingly ready to accept more sophisticated electronic submissions.

The Administrative Office of the U.S. Courts recommends that documents for electronic submission "should be captured in electronic form at the earliest practicable time."⁶⁸ This electronic "capture" poses two concerns for the practicing lawyer. First, there is more than one way to create a brief: an attorney could use WordPerfect, Word, Portable Document Format (PDF), HTML, or a combination of any of these methods. Second, there are different delivery platforms. An attorney could submit the electronic version of the paper brief on a 3.5-inch floppy disk, on a compact disc read-only memory (CD-ROM), or upload the brief via the Internet to the court's web site. With all these choices, an attorney might be understandably reluctant to experiment with electronic capabilities such as hyperlinks for fear of submitting a brief in an electronic form that does not meet the needs or technical capabilities of the judge or court.⁶⁹ However, to a limited extent, local rules promulgated thus far have provided some guidance.

65. *Id.*

66. For example, many of the electronic briefs filed in the North Carolina and Florida court web sites are merely scanned versions of the paper brief. See CM/ECF, Clerk's Office at your Desktop, *infra* note 191.

67. See, e.g., 1ST CIR. R. 32.1(f)(6), (h) (2002) ("Whenever possible, documents shall be prepared through direct conversion from the word processor, not through scanning"). Scanned submissions are often not searchable and cannot be "cut and pasted" into another electronic document, such as the court's opinion. See also 7TH CIR. R. 31(e)(3) (2002) ("PDF images created by scanning paper documents do not comply with this rule").

68. Mechem, *supra* note 16, at 19. The report further recommends, "To maximize electronic filings, attorneys and other potential filers could be required or encouraged to use the appropriate electronic format when creating and maintaining documents (e.g., discovery requests and responses, litigation-related correspondence) that subsequently might be used as a trial exhibit or attached to a motion or other filing." *Id.*

69. Some attorneys may be reluctant to submit an electronic brief that is too easily accessible, to avoid losing the brief to a public "brief bank." Both Lexis and Westlaw are trying to obtain access to electronic documents and already offer U.S. Supreme Court briefs within their databases. See Ashby Jones, *West and Lexis Compete Over Electronic Dockets*, AM. LAW. MEDIA, Mar. 18, 2002, available at <http://www.law.com/service/ContentServer?pagename=OpenMarket/Xcelerate/Preview&c=LawArticle&cid=1019508858176>. Other Internet companies, such as "BriefServe," have been collecting briefs filed electronically and allowing users to search for a brief by keywords and then download the brief for \$25.00 each. See BriefServe, at <http://www.briefserve.com> (last visited Jan. 15, 2003). One practitioner, Carolyn Elefant, has questioned whether briefs are copyrightable and urges that

at a minimum, broad and inexpensive (or free) access to legal briefs for research and client representation remains available....In addition, courts should not enter into any exclusive arrangements with outside vendors to file or store electronic briefs unless such vendors agree to make any compiled databases of briefs available to competitors for their respective use.

Carolyn Elefant, *Are Legal Briefs "Copyrightable": Yes or No and Why It Matters*, 2 No. 4 E-FILING REP. 8, Mar. 2002, available at Westlaw 2 No. 4 GLEFILR8.

1. Submitting a brief on disk in Word/WordPerfect⁷⁰

At the most basic level, an electronic submission may consist of a computer disk containing the document file of the brief.⁷¹ Local rules in the First and Fifth Circuits that require this type of electronic submission state a preference for document files in WordPerfect.⁷² In addition, local rules require that this type of submission be identical to the print submission.⁷³ Requiring attorneys to submit their briefs on disk along with a paper submission is a viable option for many courts because attorneys frequently use computers and word processing software to prepare documents, and some jurisdictions have followed this path in their local rules.

2. Submitting a brief on disk in Portable Document Format (PDF)⁷⁴

Rather than deal with the competing word processing programs (Word and WordPerfect), many jurisdictions require that electronic brief submissions be in PDF.⁷⁵ Courts requiring electronic submissions to be prepared using the PDF format may require attorneys to provide a disk with the brief in the required format, or to file the PDF brief through an existing electronic filing system.⁷⁶ Within the last few years, the PDF format has become the format of choice within the courts, especially the federal courts,⁷⁷ although the majority of PDF documents filed thus far fail to exploit the format's technical enhancements, such as hypertext.⁷⁸

70. For further description of Word/WordPerfect disk briefs see discussion *infra* part III.A.

71. The First Circuit U.S. Court of Appeals requires that any brief exceeding ten pages must include a computer readable disk in addition to the paper copy. 1ST CIR. R. 32 (2002). At the state level, the New York Court of Appeals now allows "companion" records, appendices, and briefs on CD-ROM to be filed in addition to the currently required number of printed paper copies. N.Y. R. APP. P. 500.1 & 510.1 (2000); see also N.Y. R. CT. APP. 500.1 at <http://www.courts.state.ny.us/cdrules.htm> (last visited Jan. 15, 2003).

72. 1ST CIR. R. 32 (2002); 5TH CIR. R. 31.1 (2002).

73. "The disk must contain nothing more than the brief." 5TH CIR. R. 31.1 (2002). See also 8TH CIR. R. 28(A)(d) (2002).

74. For further description of Portable Document Format see discussion *infra* part III.B.

75. "The preferred document format for electronic filings is text in a Portable Document Format (PDF) file....Electronic exhibits and images not available in text form should be embedded within the PDF document." *Proposed Technical Standards & Guidelines for Electronic Filing in the United States Courts*, Guideline G1, at www.uscourts.gov/casefiles/app-b.pdf (last modified Mar. 1997). In its commentary, the guidelines note, "PDF is a widely accepted document exchange standard which provides a rich environment for representation of formatted text documents, including pictorial information, such as images. PDF files can also carry audio and video information." *Id.*

76. In North Carolina, attorneys are required to process completed documents through Adobe Acrobat software to convert the documents to a PDF file and then submit the PDF file through an electronic filing system. See Deborah Leonard Parker, *Electronic Filing in North Carolina: Using the Internet Instead of the Interstate*, 2 J. APP. PRAC. & PROCESS. 351, 357 (2000) (describing the North Carolina electronic filing project). The briefs are then available for viewing at the Document Library at the Supreme Court of North Carolina Electronic Filing Site, at <http://www.ncappellatecourts.org> (last visited Feb. 7, 2003).

77. The federal courts have turned to Adobe PDF files for the following reasons: (1) the electronic archive of documents in PDF format is easily accessible on the Internet; (2) documents in PDF provide the "precise fidelity" necessary for public documents; (3) the electronic archive of documents in PDF reduces storage costs and requirements and allows for simultaneous multiple use of a document; (4) conversion to PDF format is relatively easy for attorneys and results in reduced costs and increased efficiency; and (5) courthouse staff can use Acrobat Capture to convert any other paper documents to PDF format for consistency and completeness of the electronic case file. U.S. COURTS, at <http://www.uscourts.gov> (last visited Jan. 15, 2003). PDF format is required in many jurisdictions such as the First, Seventh, and Eleventh federal circuits and in state courts (North Carolina, Texas, and New York).

78. As explained in part III *infra*, documents submitted in PDF format can use the program's inherent navigational features to create a viewable table of contents that allows a reader to move around a document on screen by clicking on different parts of the table of contents.

3. Submitting a brief on CD-ROM⁷⁹

The use of hypertext in electronic brief submissions has gathered more attention within another electronic medium, the CD-ROM. Current technology permits more sophisticated submissions that contain hypertext links to the record and cited authority.⁸⁰ Thus, a hypertext brief is a self-contained collection of electronic files including the brief, record, exhibits, and legal authority. Three federal circuits specifically address the use of hypertext in a brief: the Federal Circuit, First Circuit, and Eleventh Circuit.⁸¹ In the Federal and First Circuits, the local rules specifically restrict hypertext links to locations and files contained on the CD-ROM (*e.g.*, the appendix, legal authorities, and table of contents). Only the Eleventh Circuit permits briefs to link to “cases, statutes and other reference materials which are publicly available on the Internet.”⁸² While this new brief form is often referred to as the “CD-ROM” brief, the distribution media is less revolutionary than the availability of hyperlinks in the briefs. Therefore, while a more accurate label for this new brief form is a “hypertext” brief, this type of brief is often referred to as a CD-ROM brief.⁸³ The capabilities of the CD-ROM brief were of sufficient interest to cause at least three federal circuits to develop local rules to assist lawyers practicing in their circuits to file this type of electronic brief.

C. The Evolution of Electronic Submissions

While state courts began to experiment with simple PDF briefs in the mid-1990s, the most notable first attempts at electronic submissions with hypertext occurred in the federal courts. After some unsuccessful attempts,⁸⁴ in February of 1997, the U.S. Supreme Court agreed to accept, in an unofficial capacity, a CD-ROM amicus curiae brief in *Reno v. ACLU*.⁸⁵ The brief argued that the provisions in the Communications Decency Act of 1996 criminalizing “indecent” and “patently offensive” speech on

79. For further description of CD-ROM briefs see discussion *infra* part III.C.

80. See Plotkin, *supra* note 14. When a brief is submitted on CD-ROM, the attorney is providing the court with a brief that takes up less physical space and is in a format that is easier for judges and their clerks to use.

A CD-ROM with 650 megabytes of storage capacity holds 20,000 images or 100,000 word-processed pages. The main advantage is granted by hypertext linking cases, statutes, and cites to the appendix or exhibits in the brief. The final product is an integrated filing that enables the judge or clerk to move easily through the brief and referenced materials with the click of a mouse instead of wading through a huge pile of paper.

Hillis, *supra* note 59.

81. FED. R. APP. P. 32(e)(2) (2002); 1ST CIR. R. 32.1(g) (2002); 11TH CIR. R. 31-5(a)-(c) (2002).

82. 11TH CIR. R. 31-5 (2002).

83. See, *e.g.*, Joanne M. Snow, *CD-ROM Briefs: Must Today's High Tech Lawyers Wait Until the Playing Field Is Level?*, 17 J. MARSHALL J. COMPUTER & INFO. L. 615 (1999); Marilyn Devin, *CD-ROM Briefs: Are We There Yet?*, 2 J. APP. PRAC. & PROCESS 377 (2000); Current Developments—Emerging Issues, *CD-ROM Brief Struck Down but Guidelines Provided*, 14 COMPUTER L. 5, 18 (1997).

84. In 1995, Stanford Law School Professor Joseph Grundfest attempted to file a hypertext brief with the U.S. Supreme Court. His electronic submission was refused because the court was not equipped to view it. Wendy R. Leibowitz, *When High-Tech Is Over the Top: Is CD-ROM Brief Fair or Foul?*, 19 NAT'L L.J. Mar. 3, 1997, at 27.

85. 520 U.S. 1102 (1997). The electronic brief filed in this case was prepared by Carl Solano, a partner in the Philadelphia office of Schnader Harrison Segal & Lewis LLP. For further information about Mr. Solano and his work on the brief, see http://www.schnader.com/schnader/NEWEST_4_02/site%20Files/attorneys/attorney Bio.asp?attyID=301# (last visited Mar. 7, 2003).

the Internet were unconstitutional. The brief included images within the document, such as works by Michelangelo and other artists, that would violate the Communications Decency Act. In addition to these colorful images, the brief also contained links to actual materials available on the Internet, including video and music clips, that would be barred under the statute.⁸⁶ While the impact of this electronic submission on the Court's ultimate decision finding the Communications Decency Act unconstitutional is unknown, the brief used the electronic media innovatively by integrating links to the Internet to address a law criminalizing some aspects of Internet speech.

Soon another hypertext brief was presented in the federal courts.⁸⁷ Although the proffered brief was ultimately rejected, this time the Federal Circuit addressed the issue of electronic brief submissions directly and offered future guidelines.⁸⁸ In the landmark case *Yukiyo, Ltd. v. Watanabe*,⁸⁹ the court rejected the proffered hypertext brief but left the door open for future submissions by explaining the circumstances under which this type of electronic submission would be appropriate.

In *Yukiyo*, the plaintiffs attempted to file a CD-ROM counterpart brief in a patent infringement case.⁹⁰ The CD-ROM brief was identical to the paper filing but also included hyperlinks within the text of the brief linking to case and statutory authority, as well as links to documents and a videotape in the joint appendix.⁹¹ The brief clearly did not meet the format requirements of the Federal Rules of Appellate Procedure.⁹² Because the Federal Circuit had not yet promulgated any local rules to govern electronic submissions, the court found that the plaintiff should first have filed a motion for leave to file the brief.⁹³

Before offering guidelines for future electronic submissions, the court addressed the opposing party's concerns that the CD-ROM brief gave the plaintiff an unfair advantage because the defendant lacked the technical equipment to view the brief and because the brief contained complete copies of the trial transcript and a video of an entire deposition.⁹⁴ The court agreed that the defendant's inability to access the

86. See *E-Commerce Practice*, under Carl A. Solano's biography at http://www.schnader.com/schnader/NEWEST_4_02/site%20Files/attorneys/attorneyBio.asp?attyID=301 (referencing brief) (last visited Jan. 15, 2003). Mr. Solano is an attorney with the law firm that submitted the amicus brief to the U.S. Supreme Court in *Reno v. ACLU*. *Id.* See also Appellate Practice at http://www.schnader.com/schnader/NEWEST_4_02/site%20Files/practiceAreas/practicearea.asp?id=79 (last visited Jan. 15, 2003) (referencing brief).

87. See *Yukiyo, Ltd. v. Watanabe*, 111 F.3d 883 (Fed. Cir. 1997).

88. See Francis X. Gindhart, *Paperless Federal Litigation?*, 45 FED. LAW. May 1998, at 42, 42-43 (noting that the author is an attorney with Fish & Richardson, P.C. of Washington, D.C., the firm involved in the *Yukiyo* litigation and arguing that CD-ROM briefs are more efficient for the judge and more likely to encourage civility between parties because they need to cooperate to create a CD containing all briefs and the joint appendix).

89. 111 F.3d 883 (Fed. Cir. 1997).

90. *Id.* at 884.

91. *Id.* at 885.

92. FED. R. APP. P. 32 (2002).

93. 111 F.3d at 885.

94. *Id.* In an interview concerning the case, the attorney opposing the CD-ROM brief, John P. Sutton of the San Francisco firm of Bryan Hinshaw Ruben Cohen & Barnet, described in greater detail how he felt his client had been prejudiced by the CD-ROM filing:

The rules of the court provide absolutely no information about what [technology] the court has....By hiring the clerk of the court, [Francis Gindhart, a former Federal Circuit clerk who joined the firm of Fish & Richardson after eleven years at the court and prepared the *Yukiyo* brief], Fish & Richardson was able to take advantage of inside information.

brief did prejudice the defendant, and the problem might have been avoided if the plaintiff's attorneys had conferred with opposing counsel before submitting the CD-ROM brief.⁹⁵ The court rejected the defendant's argument that the CD-ROM brief was prejudicial because it contained complete trial transcripts and even a videotaped deposition.⁹⁶ The court in *Yukiyo* urged the court's Advisory Committee on Appellate Rules and the Federal Circuit Bar Association to propose procedural rules and gave lawyers a clear signal that future CD-ROM briefs would be welcome.⁹⁷

The court suggested two guidelines for electronic brief submissions. First, the party seeking to file an electronic brief should seek prior consent of the other parties. This prior consent would be a "substantial factor" in the court's decision whether to permit the brief.⁹⁸ Second, the party must seek leave of the court before filing the electronic brief, and in the motion, the filing party must delineate the technical requirements for viewing the brief.⁹⁹

The *Yukiyo* decision paved the way for more hypertext briefs. Within a year, in the case of *In re Berg*, the first hypertext brief was officially filed in the Federal Circuit.¹⁰⁰ Even though the court had yet to approve local rules to address hypertext briefs specifically, counsel for the filing party argued that it would be in the court's best interest to allow the brief, and further, that the parties had cooperated to make the CD-ROM brief a joint effort.¹⁰¹ Finally, in April 2000, the U.S. Supreme Court also accepted a hypertext brief in *Harris v. Salomon Smith Barney*.¹⁰² The briefs were approved in advance and filed as a joint effort of the parties.¹⁰³

Since the *In Re Berg* acceptance of a hypertext brief, the courts seem willing to accept hypertext briefs, although use of such briefs has been somewhat limited. While "[t]here is no official roster of every case in which CD-ROM briefs have been accepted across the country," the number appears to be at least two dozen.¹⁰⁴

Leibowitz, *supra* note 84. Apparently Mr. Gindhart was aware that the court had just upgraded their computers to Pentium computers with CD-ROM drives and sound cards. *Id.*

95. 111 F.3d at 886.

96. *Id.* The attorney for Watanabe admitted that he did receive a printed copy of the brief and that he had copies of all the exhibits, but stated, "I have no ability to read or hear or do anything with what they filed. Maybe I'm too old a dog to learn these new tricks, but there's nothing in the rules that says I need to learn these tricks before next week, when my brief is due." Leibowitz, *supra* note 84. The Watanabe attorneys were forced to hire a contract attorney to view the CD-ROM. *Id.*

97. 111 F.3d at 887.

98. *Id.* at 886.

99. *Id.*

100. *In re Berg*, 43 U.S.P.Q.2d (BNA) 1703, 1997 U.S. App. LEXIS 38578 (Fed. Cir. 1997).

101. The parties argued in their motion to submit the CD-ROM brief

(1) that it is abundantly obvious that we will all have to get used to working with hypertext briefs in the next few years, (2) that it would be a good idea to "get our feet wet" on cases such as this one, and (3) that it would be advantageous for the court to experiment with different versions of hypertext briefs before issuing a new rule governing hypertext briefs.

Devin, *supra* note 83, at 381 n.20.

102. 530 U.S. 238 (2000).

103. See Devin, *supra* note 83, at 379.

104. *Id.* at 378-79. Devin lists the following cases in which CD-ROM briefs were accepted by the court: *Harris Trust & Savings Bank v. Salomon Smith Barney Inc.*, 120 S. Ct. 2180 (2000); *Reno v. ACLU*, 520 U.S. 1102 (1997); *U.S. v. Dakota*, 197 F.3d 821 (6th Cir. 1999) (brief filed by Stuart Friedman, solo practitioner, Ann Arbor, Mich.); *Digital Biometrics, Inc. v. Identix, Inc.*, No. 97-1208 (9th Cir.); *Renishaw P.L.C. v. Marposs Societa Per Azioni*, 158 F.3d 1243 (Fed. Cir. 1998) (brief for appellees filed by the law firm of Dickstein, Shapiro, Morin & Oshinsky); *Rodime P.C.*

Attorneys may be reluctant to create a CD-ROM brief because of the perceived high cost of such a submission; however, experts argue that the technology is really quite accessible and should become more common.¹⁰⁵

Whether the court has required electronic filing or just encouraged electronic submissions in addition to traditional print-based submissions, electronic media presents the practitioner with many choices. Although the federal judiciary seems to acknowledge that electronic submissions have significant benefits,¹⁰⁶ only the First, Seventh, and Eleventh Circuits have provided needed guidance through their local rules. Instead, only a few attorneys seem willing to attempt more sophisticated electronic submissions and to explore the possibilities of the electronic media.¹⁰⁷

Even as electronic brief submissions become more common under growing e-filing requirements, with some notable exceptions, lawyers are doing little more than "dumping" a traditional print brief into electronic format. Few attorneys submit briefs that take advantage of hypertext or are tailored to the electronic media. Attorneys unaware of the differences inherent in the electronic media may create less than effective briefs, particularly when courts are urging "paperless" case management and greater reliance on electronic access to case documents. Although

v. Seagate Tech., Inc., 45 U.S.P.Q.2d 2023 (Fed. Cir. 1998); In re Berg, 43 U.S.P.Q.2d 1703 (Fed. Cir. 1997) (brief filed by the law firm of Oblon, Spivak, McClelland, Maier & Neustadt); Glendale Fed. Bank, F.S.B. v. U.S., 43 Fed. Cl. 390 (1999) (defendant's post-trial brief); U.S. v. Rockwood, 52 M.J. 98 (Armed Forces App. 1999) (amicus brief); Alavarado v. H&R Block, Inc., No. WD 57230 (W.D. Mo.) (brief filed by Bryan Cave in Jan. 2000); Doe v. Church of the Holy Redeemer, Inc., No. 95,450 (Fla.) (brief filed by Robert Glazier's law firm, Miami, Fla.); Christian v. Christian, 985 S.W.2d 513 (Tex. App. 1998) (filed by Mark I. Unger, San Antonio, Tex.); Aluminum Co. of Am. v. Aetna Cas. & Sur. Co., 998 P.2d 856 (Wash. 2000); United Water Conservation Dist. v. County of Los Angeles, No. 239324-RDR (Cal. Super., Kern County).

Devin, *supra* note 83, at 379, n.10. In addition, RealLegal lists CD-ROM briefs it has prepared and that have been subsequently filed in court. See <http://www.reallegal.com/ebrief.asp> (last visited Jan. 15, 2003). In addition to the cases just listed, RealLegal created CD-ROM briefs in the following cases: *United States v. McVeigh*, 157 F.3d 809 (10th Cir. 1998) (appellant's brief) and *Caterpillar, Inc. v. Deere & Co.*, 224 F.3d 1374 (Fed. Cir. 2000).

105. In a recent article, attorney David Masters provides step-by-step instructions on how to create a CD-ROM brief using Adobe Acrobat to assemble the brief. *WordPerfect Feature Guide*, *infra* note 186. See also Howard J. Bashman, *Technology and Appellate Litigation: What, If Anything, Has Changed?*, at <http://www.bipc.com/articles-s-z/techandappellate.htm> (last visited Jan. 15, 2003). On several different Internet discussion lists for appellate attorneys and judges, individuals have argued that the cost of a CD-ROM brief is not nearly as high as one would expect. In several messages, the cost for the creation of "in-house" CD-ROM briefs has been estimated to be between \$500 and \$600.

106. Judicial encouragement of electronic submissions is becoming increasingly common as judges are eager to experiment with ways that electronic submissions can bring innovation to their courts. As one judge noted,

Many judges and staff have become so dependent on technology that they are demanding and locally developing their own innovative ways to use technology in chambers, offices, and courtrooms. I hope that the judiciary will continue to adopt newly matured and emerging technologies, unafraid to take acceptable risks in order to gain great advantage. In that respect, I view our local courts and court units as laboratories that are ideal for innovation, experimentation, and development that should be encouraged.

IT Advantage, *supra* note 22.

107. Attorney Stuart Friedman actually used the technology when asking the Sixth Circuit Court of Appeals for permission to file a CD-ROM brief. *United States v. Dakota*, 197 F.3d 821 (6th Cir. 1999). The motion itself was submitted on a CD-ROM and allowed the court to experience firsthand the benefits of a CD-ROM brief. Motion for Permission to File CD-ROM Companion Brief. *U.S. v. Dakota*, 197 F.3d 821 (6th Cir. 1998) (No. 97-2256), at <http://www.crimapp.com/Dakota/motion.pdf> (last visited Jan. 15, 2003). See also Todd H. Flaming, *Electronic Briefs: The Time Has Come*, 88 ILL. B.J. 233 (2000) (advocating the use of PDF format when creating an electronic brief, with basic instructions for doing so).

the courts send a message that they are eager for electronic submissions, with only minor exceptions,¹⁰⁸ their local rules offer little guidance.¹⁰⁹ In this environment, conducive to experimentation, the practicing bar needs to look elsewhere for guidance on how to best craft an electronic submission. Composition theory and new studies analyzing electronic communication can offer that needed guidance.

II. THE NEW RHETORIC MEETS TECH-RHETORIC: FOCUSING ON THE READER IN AN ELECTRONIC ENVIRONMENT

As the legal community experiments with different methods of electronic communication, composition theorists are also grappling with what impact digital media has on the composition process. The current generation of composition theorists embraces a process-oriented theory of composition referred to as "New Rhetoric."¹¹⁰ Under this process theory of composition, the writer considers the purpose of the communication as well as the needs of the intended audience.¹¹¹ Legal writing specialists also tend to follow this process approach and urge their students to be especially mindful of the different audiences involved in diverse legal writing tasks.¹¹² The effectiveness of the written product is judged by how well the writer has anticipated the needs of the audience. Legal writing, particularly brief

108. See 1ST CIR. R. 32 (going into extensive detail on the requirements for CD-ROM briefs and the use of hypertext within a brief).

109. See Michael K. McChrystal et al., *Laptop Litigation: The Impact of Technology on Litigation*, WIS. LAW. SEPT. 1999, at 15 (providing an overview of how technology can be used in day-to-day litigation and advocating the need for new regulations).

110. Traditional notions of rhetoric are concerned "with the inter-relationships among a speaker or writer, his message, and his audience." See Edward P.J. Corbett, *Rhetoric, the Enabling Discipline*, reprinted in THE WRITING TEACHER'S SOURCEBOOK 26 (Edward P.J. Corbett et al. eds., 4th ed. 2000). Corbett's essay, originally published in 1972, unleashed a major transition in composition theory from product to process. Rather than focus on the finished product, these theorists urged writers to focus on the writing process to achieve more effective communication results. This process-oriented model focuses primarily on the "fundamental triad" of writer, message, and audience. *Id.* at 34. This re-emergence of rhetorical principles is often referred to as "New Rhetoric." See Elizabeth D. Rankin, *Revitalizing Style: Toward a New Theory and Pedagogy*, reprinted in THE WRITING TEACHER'S SOURCEBOOK 374, 375 (Edward P.J. Corbett et al. eds., 4th ed. 2000). See also James A. Reither, *Writing and Knowing: Toward Redefining the Writing Process*, reprinted in THE WRITING TEACHER'S SOURCEBOOK 286-93 (Edward P.J. Corbett et al. eds., 4th ed. 2000) (arguing that within the process of writing more attention needs to be dedicated to understanding the knowledge base within the discourse community—just advocating "process" without substance is counter-productive. "The goal has been to replace a predictive pedagogy...with a descriptive discipline whose members study and teach 'process not product.'").

111. Corbett argues that "audience is often the chief determinant of the means that the speaker or writer chooses to effect his purpose." Corbett, *supra* note 110. See also Douglas B. Park, *The Meanings of "Audience"*, reprinted in THE WRITING TEACHER'S SOURCEBOOK 310 (Edward P.J. Corbett et al. eds., 4th ed. 2000). See also Teresa Godwin Phelps, *The New Legal Rhetoric*, 40 S.W. L.J. 1089 (1986); Michael Frost, *An Introduction to Classical Legal Rhetoric: A Lost Heritage*, 8 S.CAL. INTERDISCIPLINARY L.J. 613 (1999); Linda L. Berger, *Applying New Rhetoric to Legal Discourse: The Ebb and Flow of Reader and Writer, Text and Context*, 49 J. LEGAL EDUC. 155 (1999).

112. Most legal writing scholarship now focuses on evolving concepts of New Rhetoric. See Berger, *supra* note 111, at 167-68. See also Teresa Godwin Phelps et al., *From Product to Process: Evolution of a Legal Writing Program*, 58 U. PITT. L. REV. 719 (1997); Neil Feigenson, *Essay Review: Legal Writing Texts Today*, 41 J. LEGAL EDUC. 503, 516-18 (1991); LAUREL CURRIE OATES ET AL., THE LEGAL WRITING HANDBOOK: ANALYSIS, RESEARCH AND WRITING 259-63 (2d ed. 1998) (noting that without a good understanding of audience and purpose, a legal writer is unable to make good decisions about what to include and exclude); DEBORAH A. SCHMEDEMANN & CHRISTINA L. KUNZ, SYNTHESIS: LEGAL READING, REASONING, AND WRITING 197-205 (1999) (describing the importance of audience and purpose in the appellate brief).

writing, is "reader-centered" writing.¹¹³ The legal writer, especially the brief writer, seeks to educate and persuade the court. As the communication platform shifts from print to electronic media, many experts recognize a concurrent shift in the needs of the reader. Thus, with respect to the trial or appellate brief, while the purpose has not changed, current research suggests that the reader within an electronic environment has different needs and expectations. To achieve a brief's goals of education and persuasion, a legal writer needs to understand the unique characteristics of the online reader. First, the legal writer must know how readers react generally in an online environment, and second, what impact an electronic environment has on the judicial reader.

A. Readers' Reaction to the Online Environment

As information migrates from the print environment to the electronic environment, theorists have studied the reader's ability to understand and use information within an electronic environment. First, these studies have focused on what impact, if any, the electronic environment has on the cognitive process, the readers' ability to understand what they have read. Second, experts examine the ergonomic characteristics of the electronic environment and have developed guidelines for constructing information within an electronic environment that is both accessible and understandable. Together, these studies offer a framework to judge the effectiveness of past electronic submissions and to guide future electronic submissions.

1. Online Communications and the Cognitive Process

The unique characteristics of the electronic environment can affect not only how a brief is viewed and used but, more importantly, how well it is understood. "Comprehending a written text involves cognitive processes that range from decoding individual words to abstracting the 'gist' of the text as a whole...[I]f writers want to produce texts that can be read and understood easily and accurately, they must understand the cognitive processes used for reading and the textual features that facilitate those processes."¹¹⁴ Reader comprehension studies have learned that after reading a number of texts with similar structures (e.g., fairy tales, newspaper articles, legal briefs), readers create "generalized, abstract patterns or frameworks, called 'schemas,' which they call on as they encounter new texts of the same type."¹¹⁵ These "schemas" allow the reader to order and analyze the information in a cognitive process that results in comprehension.

113. SCHMEDEMANN, *supra* note 112, at 104-05.

114. BRUCE K. BRITTON & SHAWN M. GLYNN EDS., *COMPUTER WRITING ENVIRONMENTS: THEORY RESEARCH, AND DESIGN* 19 (1989) (describing the progress being made toward the creation of ideal computer writing environments that support all of the cognitive processes fundamental to good writing).

115. Davida Charney, *The Effect of Hypertext on Processes of Reading and Writing*, in *LITERACY AND COMPUTERS—THE COMPLICATIONS OF TEACHING AND LEARNING WITH TECHNOLOGY* 245-46 (Cynthia L. Selfe et al. eds., 1994). "People often rely on the structure of the text and the expectations raised by schemas to decide which aspects of the texts are most important and, accordingly, where to allocate their time and attention during reading." *Id.* at 246.

A major premise of most reading theories, consistently supported by empirical studies, is that, as people read, they build a hierarchically structured mental representation of the information in the text. As they read successive sentences, they link the ideas or propositions expressed in them to their developing hierarchical representations by means of chains of repeated concepts (or arguments). To the extent that the sentences—or larger units—of the text reuse, develop, elaborate on, and interrelate the same arguments, the text is more cohesive. The more cohesive the text, the easier it is for readers to create a well-structured, meaningful, and useful mental representation.¹¹⁶

Cognitive scientists note that the schema for any given text is activated

either by the context in which the text is found...or by characteristics of the text itself. Once a particular schema is activated, readers expect the text to have a certain structure, and they search the text for the propositions that fill pre-established positions in that structure. If the text is structured as the schema suggests, comprehension is facilitated. If not, comprehension is impaired.¹¹⁷

Certain characteristics of electronic communication, especially hypertext, significantly impact how readers understand text.

Hypertext documents create new challenges for the cognitive process. A hypertext document "is an assemblage of texts, images, and sounds—nodes—connected by electronic links so as to form a system whose existence is contingent upon the computer."¹¹⁸ While print documents can have nonlinear features such as footnotes, glossaries, and appendices, these nonlinear features are not as easily accessed as similar components in an electronic document. As a result of the increased burden associated with accessing nonlinear features in a print environment, some theorists believe that readers are less likely to read these features in a print environment.¹¹⁹ In contrast, a hypertext document presents readers with a new way to approach a document. In this networked environment of nodes and links, the reading process is often referred to as "browsing" or "navigating" instead of just "reading."¹²⁰ Thus, a hypertext document "makes users feel that they can move freely through the information, according to their own needs."¹²¹

Some theorists suggest that hypertext "reconfigures the constructs of text, reader, and writer."¹²² If a reader can move freely both within the document and to access

116. *Id.* at 243.

117. See Corbett *supra* note 110, at 21.

118. See HYPERTEXT HANDBOOK, *supra* note 3, at 56. Theodor Holm Nelson is credited with coining the term "hypertext" in the mid-1960s. *Id.* at 55. However, the concept had its roots in a 1945 article in *Atlantic Monthly* by Vannevar Bush. Bush claimed that the progress of research was stymied by the inability of researchers to quickly locate and access relevant information. He proposed a microfiche-based system of documents and links that featured fast access to information and the ability to annotate. His system is considered by many as the "advent of hypertext." *Id.* at 13.

119. See JEAN-FRANÇOISE ROUET ET AL., EDS., *HYPERTEXT AND COGNITION* 14 (1996). In traditional printed texts, upon reaching the footnote marker, the reader decides "whether to continue reading the primary stream of text or to branch off to pursue the footnote." JAKOB NIELSEN, *MULTIMEDIA AND HYPERTEXT—THE INTERNET AND BEYOND* 2 (1995).

120. *Id.*

121. *Id.* at 2-3.

122. Alysson Troffer, *Writing Effectively Online: How to Compose Hypertext*, COMPUTERS AND COMPOSITION, at <http://corax.cwrl.utexas.edu/cac/online/01/troffer/htintro.html> (last updated Aug. 27, 2000).

information outside the document, the reader is empowered to shape a document to his or her own needs. The reader can choose the order in which to read individual nodes and whether to follow links. In this sense, hypertext allows a writer to reach an "unlimited array of audiences."¹²³ The writer can use hypertext to craft a single document that meets the needs of readers at different levels of sophistication and interest. Readers only need to follow the hyperlinks that interest them. This freedom, however, is a double-edged sword.

Electronic communication can sometimes disrupt the reader's expected schema and thus impede comprehension in two major ways. First, hypertext creates a proliferation of choices for the reader as to what to read and in what order, thus "compounding the difficulties of creating a coherent mental representation."¹²⁴ Because a hypertext document allows a reader to access huge amounts of information, a "cognitive overload" can result. "Hypertext, which is designed to deliver information to readers rapidly, makes it easy for readers to drown in information; at every click of the mouse or keyboard, the reader can access more."¹²⁵ Second, the inherent limits of the computer screen can make it difficult for a reader to envision the structure of a hypertext document. This disorientation results from the inability to view more than one screen of text at a time, or see how topics are related to each other.¹²⁶ In conventional print text, a reader expects the relation between topics to be syllogistic, that is, the reasoning is deductive and progresses from the general to the specific. In contrast, the logical connection between links is primarily associative; that is, the link often takes the reader to related information that represents a diversion from the main content.¹²⁷

Cognitive scientists believe that comprehension problems in the electronic environment will improve as online writers make better use of the electronic media and as readers become more comfortable with the online environment.¹²⁸ In the meantime, however, to combat cognitive overload, experts recommend that a hypertext environment adhere to the guiding principle of providing "details on demand."¹²⁹ This strategy means providing just enough detail at each stage of the

123. *Id.* (noting that the hypertext document can "efficiently and effectively address the needs of multi-leveled audiences").

124. See ROUET ET AL., *supra* note 119, at 245. "While hypertext may change which sequences are available—and may well impose more frequent decision points for which sequence to follow—it will not change our basic mental architecture." *Id.* at 261, n.3.

125. See HYPERTEXT HANDBOOK, *supra* note 3, at 147.

126. *Id.*

127. *Id.* (citing research done by John M. Slatin).

128. As one expert notes, "hypertext efficiency involves a trade-off between the power of linking and search tools it provides and the cognitive demands or costs these tools impose on the reader. The power/cost ratio can be improved in two major ways; first, by providing structural cues that make hypertext look more like traditional text structures readers rely on, and second, by improving the readers' hypertext literacy, that is by helping readers become 'hyper-readers' or experts in the use of nonlinear text." ROUET ET AL., *supra* note 119, at 20.

129. See HYPERTEXT HANDBOOK, *supra* note 3, at 149-50. To determine what constitutes "just enough," the following design principles are helpful:

1. Identify the domain of the discourse so that a context is established.
2. Identify pre-existing knowledge that the individual needs for complete understanding. Make such knowledge available through links so that the reader can access it and process the remainder meaningfully.
3. Present the information in logical sequence so that the information that comes first provides context for the information that follows.

analysis so that the presentation has no “conceptual gaps” that can impair comprehension, or unnecessary details that can overwhelm the reader.

To integrate the material successfully with existing cognitive structure, the reader must understand which existing concepts the new materials relate to. Therefore, the presentation must identify relevant concepts in terms the reader can understand. If there are prerequisite concepts which the reader may not already know, they should be available through links so the reader can view them before proceeding on to the details.¹³⁰

This strategy requires the writer to clearly communicate what the major concepts are so that the reader understands the need to follow an explanatory link.

To avoid reader disorientation, experts urge hypertext writers to focus closely on the structure of written text and to encourage the use of a hierarchical structure.¹³¹ In a hierarchical structure, the reader has initial access to “high-level generalities and overviews” that offer a preview of the analysis that lies below.¹³² The various levels within hierarchies “can be based on importance, frequency of use, or complexity.”¹³³ This recommended online hierarchical structure manifests itself most commonly as a “clickable” table of contents in which a reader can repeatedly return to the top level to view the available topics. This review can help readers visualize the entire document structure, which supports the ongoing cognitive process, and helps readers maintain an adequate level of orientation within the document.

2. Ergonomic Considerations in Electronic Communication

To the extent that legal writing is “reader-centered,” it is imperative to consider not only the cognitive effects of electronic communication but also the ergonomic characteristics of electronic media. Closely connected to accommodations to assist with the cognitive process, the field of ergonomics or human factors also suggests ways to make online text more effective. The ergonomic approach views electronic communication as an interaction between a user and a complex device.¹³⁴ Strategies can be directed towards the user or the device to improve the communicative interaction. For example, the success of the interaction may depend on factors within the user’s control, such as training, cognitive abilities, and expertise in the subject area of the communication.¹³⁵ Characteristics of the communication media, including the hardware, the software, and the design properties of the text, can also impact the effectiveness of the communication. To a certain extent, some of these variables are outside the author’s control in an electronic communication. While the

-
4. Identify details that the individual can obtain to elaborate the information in the initial presentation. When constructing a detail level, apply these same rules to it.

Id.

130. *Id.* at 149.

131. Hierarchical structures are thought to be the optimal form of hypertext documents. See BRITTON, *supra* note 114, at 23.

132. See Troffer, *supra* note 122.

133. *Id.*

134. See ROUET ET AL., *supra* note 119, at 5.

135. See NIELSEN, *supra* note 119, at 16 (“A hypertext system works in collaboration with the user, who has the intelligence to understand the semantic contents of the various nodes and determine which of its outgoing links to follow.”).

author may select the development systems involved to create the electronic communication, she lacks control over the delivery platform for the communication. The author cannot control the screen on which the communication will be viewed (including the size and resolution of text) or the capability of the computer to run the programs needed to view the communication. Therefore, the author of an electronic communication must design the communication with "the physical configurations of both the development and delivery systems in mind."¹³⁶

Jakob Nielsen, the leading expert in the usability of electronic communication, particularly hypertext systems, offers a widely accepted model to evaluate a system's effectiveness.¹³⁷ According to Nielsen, the acceptability of a system depends on whether the system can be used to achieve some desired goal; a system must have both social and practical acceptability.¹³⁸ Practical acceptability is measured in terms of usefulness, utility, and usability. Useful systems meet cost constraints, are compatible with other concurrent systems, and are reliable.¹³⁹ Utility concerns "whether the functionality of the system in principle can do what is needed" and usability concerns "how well users can use that functionality."¹⁴⁰ Thus, within the realm of the American court system, issues of cost, privacy, reliability, and accessibility are understandably heightened when evaluating the functionality of any electronic communication system.

As readers interact with electronic media, experts have observed common themes that may also play a role in the media's effectiveness. The emerging habits of the online reader indicate that electronic authors should consider reading speed and content navigation in the electronic media. In keeping with the "reader-centered" perspective in legal writing, here too it is helpful to understand the process involved in these human factors and make design decisions accordingly.

In early studies, researchers found that reading from a computer screen was approximately thirty-percent slower than reading from paper.¹⁴¹ The reasons offered for this phenomenon were system-based for the most part and usually concerned screen resolution and glare.¹⁴² The most current studies, however, have found that

136. See HYPERTEXT HANDBOOK, *supra* note 3, at 145.

137. See NIELSEN, *supra* note 119, at 280.

138. *Id.*

139. *Id.*

140. *Id.* at 281. Usability has the following five indices:

- (1) *Easy to Learn*: a user can quickly understand basic commands and navigation options.
- (2) *Efficient to Use*: when users want to find specific information, they can either quickly find the information or know that the information is unavailable. At any point in the information base, the user can orient themselves to where they are in the information base and how it relates to other parts.
- (3) *Easy to remember*: after being away from the system, the user can come back and still remember how to use it.
- (4) *Few errors*: users rarely interact unsuccessfully with the media (e.g., follow a link, only to find it does not take them where they expected to go).
- (5) *Pleasant to use*: users prefer the system to paper and are rarely frustrated with the system.

Id. at 279-84.

141. See NIELSEN, *supra* note 119, at 154.

142. Letters on a computer can appear coarse or grainy, causing eye strain. Often, the screen size is smaller than the printed page. Reading speed can also be hampered by time spent waiting for a screen of text to appear on the computer screen. Access speeds can be a significant problem for materials accessed over the Internet. In contrast,

when a high-resolution screen with "anti-aliased" text was used, the reading speeds between paper and computer screen were equivalent.¹⁴³ Recent studies have also made recommendations as to the type and size of font that should be used for optimal reading.¹⁴⁴ The two most common types of fonts currently used are "serif" fonts (e.g., Times New Roman) and "sans serif" fonts (e.g., Arial).¹⁴⁵ Earlier studies found that serif fonts, which have "ornamental strokes at the tip and base of each letter," are easier to read on paper.¹⁴⁶ However, serif type fonts do not always enjoy the same advantage in an online environment. In the most recent study, there was a slight advantage for 12-point Arial font over 12-point Times New Roman font, when reading on the web.¹⁴⁷ The preference for the Arial font was heightened when the font was anti-aliased. The study also noted that when the size of the Times New Roman font was ten or less, its legibility online was severely compromised.¹⁴⁸ Despite studies that indicate that sans serif type fonts are more readable, some courts still advise lawyers to continue to use fonts commonly used in paper briefs. In its "suggestions for making your briefs more readable," the Seventh Circuit advises lawyers to [u]se typefaces that were designed for books."¹⁴⁹ Although usability studies recommend font guidelines specifically designed for the online environment, lawyers continue to face court guidelines intended for the print environment.

Thus, the "fix" for slowed online reading speed requires more than just user and system intervention. In addition to a high-resolution screen and readable font, courts

materials accessed from a CD-ROM have a major advantage in access speeds. Higher end CD-ROM drives available in 1995 delivered data almost four times as fast as a T3 line (one of the fastest connections to the Internet used primarily by business users). See NIELSEN, *supra* note 119, at 163.

143. See ROUET ET AL., *supra* note 119, at 111. Aliasing, when referring to online fonts, describes the manner in which diagonal and curved lines appeared under old dot matrix systems. For example, drawing a diagonal line on a low-resolution display yields an undesirable "staircase" look, making the text harder to read. An "anti-aliased" font automatically "smooths out" the jagged edges and creates a more readable font. In another interesting study comparing how people read news in print versus online, the study found that users read about seventy-five percent of article text online—far more than in print, where only twenty to twenty-five percent of an article's text gets read on average. See The Poynter Eyetrack Study, at <http://www.poynter.org/eyetrack2000> (last visited Jan. 22, 2003). See also Jakob Nielsen, *Eyetracking Study of Web Readers*, at www.useit.com/alertbox/20000514.html (last modified May 14, 2000) ("The most common behavior is to hunt for information and be ruthless in ignoring details. But once the prey has been caught, users will sometimes delve in more deeply.").

144. Thomas S. Tullis, Jennifer L. Boynton & Harry Hersh, *Readability of Fonts in the Windows Environment* (1995), at www.acm.org/sigchi/chi95/proceedings/intpost/tst_bdy.htm (last visited Jan. 15, 2003) (finding that to optimize reading speed and accuracy online writers should use sans serif fonts larger than 9.0 points).

145. Michael Bernard & Melissa Mills, *So, What Size and Type of Font Should I Use on My Website?*, at <http://wsupsy.psy.twsu.edu/surl/usabilitynews/2S/font.htm> (last modified Jan. 17, 2002).

146. *Id.*

147. *Id.* The researchers in this study noted that the serif type font (Times New Roman) may have done as well as it did in the study because the majority of the participants used 12-point Times New Roman as their normal font default and they were therefore more accustomed to reading that font. Despite this familiarity with the serif fonts, the researchers noted that some of the participants had Times New Roman as their default font but chose Arial as their preference after the study. *Id.*

148. *Id.*

149. *Practitioner's Handbook for Appeals to the U.S. Court of Appeals for the Seventh Circuit* (2002), XX. Requirements and Suggestions for Typography in Briefs and Other Papers, at <http://www.ca7.uscourts.gov/Rules/handbook.htm> (last visited Jan. 22, 2003). This handbook also advises practitioners to use serif fonts (such as New Century Schoolbook) and suggests that sans serif fonts (such as Arial and Helvetica) only be used in headings and captions. *Id.* This advice flies in the face of usability studies that advise online writers never to mix serif and sans serif fonts within text because it decreases reading speed. See Research-Based Web Design & Usability Guidelines: Font/Text Sizes, Use Readable Font Sizes, at <http://www.usability.gov/guidelines/fonts.html> (last visited Jan. 22, 2003).

may also need to be more accepting of the special needs of the online environment. Even when reading speed remains slower, studies have found that users may still prefer an electronic system over paper if the media allows the user to find relevant text faster and allows the reader to extract key information without having to spend time reading unnecessary background information.¹⁵⁰ Such benefits are usually found in a hypertext system.

A user will forgive an electronic environment that is less than optimal for reading, if the environment is structured to facilitate navigating the document. Perhaps because of the nonlinear attributes of hypertext, a user "navigates" a hypertext system, rather than simply "reads" it. The author should do everything possible to ensure a successful journey.

This metaphor of navigation highlights the active, strategic role taken on by the reader who engages in a hyperdocument. It is the reader, not the hypertext author, who charts a course through the sea of information. The reader is at the helm, making the decisions to either access or circumnavigate the islands of content in the hyperdocumentary sea. As the chartmaker must be aware of the sea's vastness and depict the various ways to sail it, so the hypermedia designer must understand the program's enormous content and provide readers with tools and other aids for easy access. The designer, like the chartmaker, defines not the course, but the possibilities. The navigator, ultimately, will be on his or her own.¹⁵¹

Usability experts, therefore, suggest that navigation can be improved through clear organizational structures and well-designed content.

In the print environment, a reader can thumb through the document to get a sense of its length and organization. Obtaining this type of overview can be more difficult in the electronic environment and may be even more complicated in a hypertext system. If a series of clicks takes the reader to unknown points within the document or even outside the primary document to another document, the reader can quickly become disoriented.¹⁵² Even in small documents that could be read within an hour, a study found that "users experienced the 'lost in hyperspace' phenomenon as exemplified by this user comment: 'I soon realized that if I did not read something when I stumbled across it, then I would not be able to find it later.'"¹⁵³ As a result of the disorienting effects of the online environment, experts stress the importance of providing the reader with a clear and readily accessible organizational plan.¹⁵⁴ This organizational plan should not only be visual, but an integral part of the navigational scheme of the electronic document. As one observer notes, "There is no reason for a reader to be stranded in a single screen of text and lost in relation to

150. See NIELSEN, *supra* note 119, at 156.

151. See HYPERTEXT HANDBOOK, *supra* note 3, at 271-72.

152. See Nielsen, *supra* note 119, at 262, n.7 (noting that disorientation results because readers "consciously choose to look at something (i.e., by clicking a button), because new information may displace other information on the screen, and because making such a choice may make it harder to get back where the reader started").

153. Of the respondents in this study, fifty-six percent agreed with the statement: "When reading the report, I was often confused about where I was..." NIELSEN, *supra* note 119, at 247.

154. "Ultimately, your goal is to make your document structure simple and easy to navigate." Troffer, *supra* note 122. Troffer suggests that online writers achieve this goal by organizing documents "according to a simple and meaningful pattern." Even in complex documents, the organization should still appear simple. *Id.*

the whole document. Unless you have a good reason to do otherwise, you should share your navigational plan with the reader."¹⁵⁵ Thus, while experts on the cognitive process explain the need for an organizational plan generally, experts in ergonomics emphasize the need to make the organizational plan an explicit and defining element in crafting an electronic document.

In addition to the importance of a strong and visible organizational plan, many experts also recommend the judicious use of links and other hypertext features. Within a hypertext system, links are generally of two types: navigational and associative.¹⁵⁶ Navigational links connect the various parts of a document network. They can lead the reader to different portions of a single document, or link to another document within the network of documents. Associative links, much like footnotes, are "intended to enrich the document's content."¹⁵⁷ While both types of links can cause reader disorientation, associative links are more likely to disrupt comprehension. The "enriching" text may be in an entirely different document, with a different author or style. Following the link may be like sending the reader "to a foreign land without a guide."¹⁵⁸ When using hypertext links, experts agree that "less is more." Nielsen observes,

If you add every conceivable link to your hypertext, readers will benefit less than if you add only those links that are truly important and relevant. Every extra link is an additional burden on the user who has to determine whether or not to follow it. And if there are too many links leading to uninteresting places...then readers will quickly become disappointed and learn not to trust your judgment.¹⁵⁹

Thus, in designing an electronic document, navigational links should operate logically and intuitively, while associative links should be used sparingly.

In addition to good link design, other features in a hypertext system, such as bookmarks, history lists, and backtrack capabilities, also facilitate efficient navigation.¹⁶⁰ These latter features are outside the author's control and can vary among different software programs. Thus, if a hypertext system is used, the author

155. Christopher B. Daly, *Introduction to Hypertext Writing Style*, at <http://www.bu.edu/cdaly/hyper.html> (last modified Jan. 8, 1998).

156. See Troffer, *supra* note 122.

157. See *id.* (suggesting that associative links are used to cross-reference related materials, provide detailed background information, annotate an argument with supporting details or definitions, or provide references, akin to the purpose of footnotes).

158. *Id.*

159. See NIELSEN, *supra* note 119, at 321. Moreover, the actual language used in the links is also important. One design handbook advocates including the article title in the link to create "navigational landmarks" and help avoid disorientation. "Thus, most of the links a...reader selects look like the name of the destination node." *Id.* at 152. See also Troffer, *supra* note 122 (noting that "by writing effective link text, you can help readers understand where the links lead without clicking on them").

160. Some hypertext systems allow users to create a list of bookmarks of specific points in the document that the reader wants to return to, or to generate "history lists" so the reader can view where they have been in the document. See, e.g., Adobe Acrobat 5.0. See also NIELSEN, *supra* note 119, at 249-57 (explaining in general terms hypertext features). Nielsen further argues that the backtrack capability is a critical feature but notes that different hypertext systems are not consistent in how this feature is offered, thus making the feature less beneficial. *Id.* When a reader does understand how to use the backtrack feature, it is "a lifeline for the user who can do anything in the hypertext and still be certain to be able to get back to familiar territory by using the backtrack. Since backtrack is essential for building the user's confidence it needs to fulfill two requirements: It should always be available, and it should always be activated in the same way." *Id.* at 249.

should choose a system that offers clear navigational cues and features. However, the navigational tools can only go so far; “[w]e should...be careful to distinguish *intrinsic* navigation problems from those caused by sloppy, careless, or inept writing.”¹⁶¹

The effectiveness of electronic communication may also depend on the writing style and the visual design of the content itself. Online readers benefit from content design that considers the constraints of the computer screen. According to Alysson Troffer, a technical writing expert specializing in online communication, electronic communication should adopt an “effective online style.”¹⁶² Troffer recommends an online writing style that is “concise and direct” and uses short paragraphs to accommodate the limits of a computer screen. While many of her suggestions have been voiced before by legal writing specialists, these suggestions are even more important if a document is to succeed in an electronic environment.¹⁶³ Within this online writing style, paragraphs are viewed as “chunks” of information that should contain “coherent, self-contained topics.”¹⁶⁴ “The basic unit of composition remains the paragraph. The reason the paragraph remains serenely in place on its literary throne is that it still has such a vital chore to do: to express a unified collection of thoughts. Happily, most paragraphs will fit into one computer screen.”¹⁶⁵ Online usability experts describe “chunking” information into small manageable pieces: “In some instances, chunking merely means breaking up longer paragraphs into shorter ones. This strategy provides more white space and makes screen reading more palatable.”¹⁶⁶ This strategy can lead to well-structured, concise writing in the print medium as well as in the electronic medium.

At a sentence level, accuracy becomes a premium. An unclear pronoun reference or an ambiguous internal reference (*e.g.*, as discussed earlier) may confuse and mislead the reader even more so in an electronic medium, where content is limited to available space on the computer screen. The electronic author also needs to consider whether the document can even be read in an online environment. The chosen font or a scanned document may be so grainy and fuzzy as to be unreadable. Writers should use standard, easily read symbols and avoid special characters that may not display consistently. Some usability experts suggest that small words, (*e.g.*, a, an, and or) should be capitalized in an online environment to ensure accuracy.¹⁶⁷

Taken as a whole, the unique needs of the online reader, both in a cognitive and ergonomic sense, mandate a new rhetoric, a tech-rhetoric.¹⁶⁸ If writers fail to consider the principles that underlie successful hypertext documents, they risk not reaching their full communication potential. While electronic communication

161. See HYPERTEXT HANDBOOK, *supra* note 3, at 288.

162. See Troffer, *supra* note 122.

163. For example, Troffer advocates that online writers prefer the active voice and avoid nominalizations and unclear pronoun references. See *id.* Similarly, noted legal writing expert Bryan Garner, offers almost identical advice. BRYAN A. GARNER, LEGAL WRITING IN PLAIN ENGLISH 17-49 (2001).

164. Troffer, *supra* note 122. Troffer advises that each chunk “should address only one main idea, and not require that the reader has previously seen any other part of [the] document.” *Id.*

165. Daly, *supra* note 155.

166. Troffer, *supra* note 122.

167. *Id.*

168. *Id.* (“Because of the differences between hypertext and print authoring, some even argue that hypertext requires its own rhetoric.”).

requires many of the same skills used in preparing paper texts, electronic communication “demands new knowledge and skills, in effect, a new literacy.”¹⁶⁹ This need for new skills is especially strong when communication vehicles can encompass much more than just printed text. The electronic context lends itself to the inclusion of more types of media, including more sophisticated graphics and animations, video, photographs, and sound.

The role of the writer is expanding. The job of writing will once again encompass many of the skills it involved in the days before the elaborate division of labor that characterized the industrial era. Once again, writers must think about design, layout, appearance, typeface, illustrations and the like...In the end, good hypertext will come from the same source as good writing in any discipline—from a combination of good materials and good technique.¹⁷⁰

B. The Impact of the Electronic Environment on the Judicial Reader

In addition to the general characteristics of the online environment and its impact on the reader, the judicial audience has even more specific needs that make drafting electronic submissions challenging. Almost twenty years ago, James Stratman designed “reader protocol” studies to learn how judges read and respond to briefs.¹⁷¹ Since that time, many legal writing text authors have focused on the needs of the judicial audience.¹⁷² One author describes the five main characteristics of the judicial reader:

First, the reader must make a decision and wants from you exactly the material needed for the decision—not less and not more. Second, the reader is a busy person, must read quickly, and cannot afford to read twice. Third the reader is aggressively skeptical and—with predatory instincts—will search for any gap or weakness in your analysis....Fourth, the reader will be disgusted by sloppiness, imprecision, inaccuracy, or anything that impedes the reader's decision-making process or hints that you might be unreliable. And fifth, the reader will be conservative about matters of grammar, style, citation form, and document format.¹⁷³

As busy judges increasingly rely solely on briefs to assist in the decision-making process and as dockets continue to grow, any steps the brief writer can take to

169. *Id.*

170. Daly, *supra* note 155.

171. James F. Stratman, *Studying the Appellate Brief and Opinion Composing Process: The Cognitive Processes of Legal Writing*, JURIS, Winter 1984, at 12 (discussing the gap between modern composition research and legal writing textbooks and the lack of attention to the legal writing process as opposed to the finished product).

172. RICHARD K. NEUMANN, JR., *LEGAL REASONING AND LEGAL WRITING: STRUCTURE, STRATEGY AND STYLE* (4th ed. 2001). See also DEBORAH A. SCHMEDEMANN & CHRISTINA L. KUNZ, *SYNTHESIS: LEGAL READING, REASONING, AND WRITING*, 104-05 (1999) (describing the importance of “reader-centered” writing); FREDERIC G. GALE & JOSEPH M. MOXLEY, *HOW TO WRITE THE WINNING BRIEF I* (1992) (“[T]hanks to the research of scholars in the fields of linguistics, cognitive psychology, and composition and rhetoric, we now understand that writing allows us to do much more than communicate: writing is a generative, thought-provoking process.”); MARY BETH BEAZLEY, *A PRACTICAL GUIDE TO APPELLATE ADVOCACY* 2-4 (2002) (noting that writers must consider the time constraints facing judges today. Even under a conservative estimate, the average judge reads 18,000 pages per year or approximately seventy-five pages per day.).

173. NEUMANN, *supra* note 1, at 52.

construct an effective electronic submission are well worth the effort.¹⁷⁴ Considering the constraints facing judges today, there are significant differences between the traditional paper brief and an electronic submission both in how effective the brief is in getting its message across and in how accessible the brief is to assist in the decision-making process.

When a judge receives a paper brief, the tacit assumption is that the brief can be picked up, read, and annotated. Generally, the brief will be read in a linear fashion; if the judge wants to review any references in the brief, this will require putting the brief down and locating the reference. If the judge wants to incorporate any points made in the brief in an opinion, someone will have to re-type the text from the brief into the opinion. In contrast, an electronic brief has the potential to offer its judicial audience more options. If the text is too small to be read comfortably, it can be enlarged. If the brief includes hyperlinks, the judge can verify a reference to the record or to a cited authority with a mouse click.¹⁷⁵ If the electronic format permits, portions of the brief can be copied into other documents or into an opinion.

Despite the advantages electronic briefs offer the judicial reader, the demand for electronic briefs is not widespread. This lack of enthusiasm may be the result of a number of factors. Either the individual judge or the court system itself may not have the expertise or necessary equipment to access electronic briefs. Attorneys may be hesitant to try a new delivery method for their briefs when courts offer no clear standards for such briefs and if the cost of producing them is perceived to be greater than traditional paper briefs.¹⁷⁶ Finally, both the courts and attorneys may simply experience a common aversion to change. Nonetheless, more courts continue to pursue electronic filing projects and none has retreated from the decision to receive electronic filings.¹⁷⁷

174. Commentators have noticed how the legal writing landscape has changed:

Writing has changed more in recent decades than in any other period in the past few centuries. In other eras, when the pace of life was slower, writing could be more stylized and pieces longer. Now attention spans have shortened, and communicators have to get to the point far more quickly than they once did...lawyers do not have to pander to this desire, but they do have to acknowledge that it exists.

STEVEN D. STARK, *WRITING TO WIN: THE LEGAL WRITER* xiv-xv (1999).

175. Judicial acceptance of hypertext is a logical extension of the skills developed over time in using the West Digest System and reading cases published by West Publishing. Since the 1800s, West has published cases with a synopsis, headnotes, key numbers, and now, star pagination that in essence creates a manual "link" to different parts of an opinion. See Francine Biscardi, *The Historical Development of the Law Concerning Judicial Report Publication*, 85 L. LIBR. J. 531, 534 (1993); *West Publishing Co. v. Mead Data Central, Inc.*, 799 F.2d 1219, 1221-22 (8th Cir. 1986) (describing West's efforts to develop the interrelationship between the headnotes and the Digest). Indeed, one commentator has noted, "The entire process of legal argument is ideally suited to hypertext and the Web...much of the law is based on precedent, and the Web allows these precedents to be made an integral part of a legal document." Hillis, *supra* note 59 (quoting Stanford Law Professor Joseph Grundfest).

176. In a recent discussion on the CounselWeb online discussion list for appellate lawyers, David Masters refuted the claim that electronic briefs would add several thousand dollars to the cost of representation. See Masters, *infra* note 187. He estimated the additional cost to be under \$500.00 for most electronic briefs. *Id.* Indeed, the typical law office would enjoy the same benefits from electronic filing touted by the courts: more security; easier access for partners, associates and paralegals; and savings in storage costs.

177. *E-Filing Projects in the U.S.*, at www.wendytech.com/efilingprojects.htm (last visited Nov. 5, 2002). The only reason that pilot projects in Maryland, Colorado, and California were discontinued was because of a change in e-filing vendor or e-filing system. *Id.* These courts remain committed to e-filing. *Id.*

III. TECH-RHETORIC AND THE ELECTRONIC BRIEF: EVALUATING THE OPTIONS

Recognizing that courts are willing to accept, and even encourage, electronic brief submissions, brief writers must consider how current electronic submissions achieve their purpose within the online environment. In viewing existing examples of electronic briefs, it is possible to construct guidelines and suggest strategies for the future of electronic briefs. While the impact on the reader is a paramount concern, the options among the different electronic media also have related benefits and disadvantages for the writer as well. Current electronic briefs generally fall within the following technological continuum: (1) the word processing file on disk, (2) the PDF brief, and (3) the CD-ROM brief.

To differing degrees, these electronic briefs effectively use the online environment to educate and persuade the court. Their effectiveness in large part determines to what extent the judicial community plans to access the brief in the electronic format. If the court merely prints out every brief that is filed electronically, an attorney would have little motivation to develop the most effective electronic filing; however, as the judicial community becomes technologically more sophisticated, it is likely that they will begin to rely less and less on the paper brief and be more open to the advantages of the electronic brief. If the interest at judicial conferences on court technology is any indication,¹⁷⁸ judges are well on their way to a general acceptance and use of electronic briefs. In discussions with court staff at those remaining federal circuits that have not yet developed local rules concerning electronic briefs, almost every circuit is currently considering what local rules should be implemented. As that transformation takes place, a new tech-rhetoric is born.

A. *The Brief on Disk*

Because attorneys frequently use computers and word processing software to prepare documents, submitting the disk along with the paper submission is a relatively simple step. The potential advantages of a disk requirement are significant. Including a disk with the paper submission costs nearly nothing to implement and opens a world of benefits from using electronic documents: the ability to store large numbers of briefs on a laptop makes them portable for traveling judges, font sizes can be increased, and text-to-voice software can enhance judicial efficiency.¹⁷⁹

178. See, e.g., The Court Technology Laboratory, at <http://ctl.ncsc.dni.us> (last visited Jan. 22, 2002) (describing a variety of court technology conferences); see also JudgeLink, at <http://www.judgelink.org> (last visited Jan. 22, 2003).

179. See Hillis, *supra* note 59.

Some jurisdictions already encourage or require¹⁸⁰ attorneys to submit the word processing file of a brief on a disk. Although many of these jurisdictions state a word processing preference in their local rules,¹⁸¹ failing to state a preference can cause uncertainty. Briefs may have been created in Word or WordPerfect, and the transition between the two word processing systems is not always smooth. Without knowing which word processing format is preferred or even which version the court uses, attorneys may be hesitant to submit a brief on disk.

Beyond the uncertainty over which word processing program to use, the option of filing a brief on a disk, while the easiest to implement, is the least effective within the online environment. Because the file is the "blueprint" for the paper submission, decisions concerning formatting and structure will be tied to traditional print presentations and conventions, which may or may not translate well in the online environment. When reading the paper brief, the judge has little problem in turning to the table of contents to get an overview of the brief. The schema while apparent in the paper copy, may be less apparent online to the judicial reader. (See Figure 1.) At most, all the reader will know is what page of the document she is on.

In addition to these potential problems, submitting a disk along with the paper copies also presents some risks that the attorney may be exposing more than just his legal arguments. Word processing documents contain "metadata" or embedded information about the document itself. According to Microsoft, metadata is used "to enhance the editing, viewing, filing, and retrieval of Office documents."¹⁸² Metadata includes innocuous information such as the author of the document, when it was first created, and when it was last modified, but can also include text that was deleted from the document, past revisions, and private internal comments. Thus, an attorney submitting a disk to the court should be aware of exactly what information might be contained on the disk and take measures to avoid unwanted disclosures.¹⁸³ These precautions are even more important if the disk copy can be uploaded to a court server, where the document is available to opposing parties as well as, in some cases, the general public.

Although the "brief on disk" option may present online comprehension problems and potential security risks, this option does offer convenience for the court. A disk is certainly more portable than a paper brief and can be saved on a computer hard

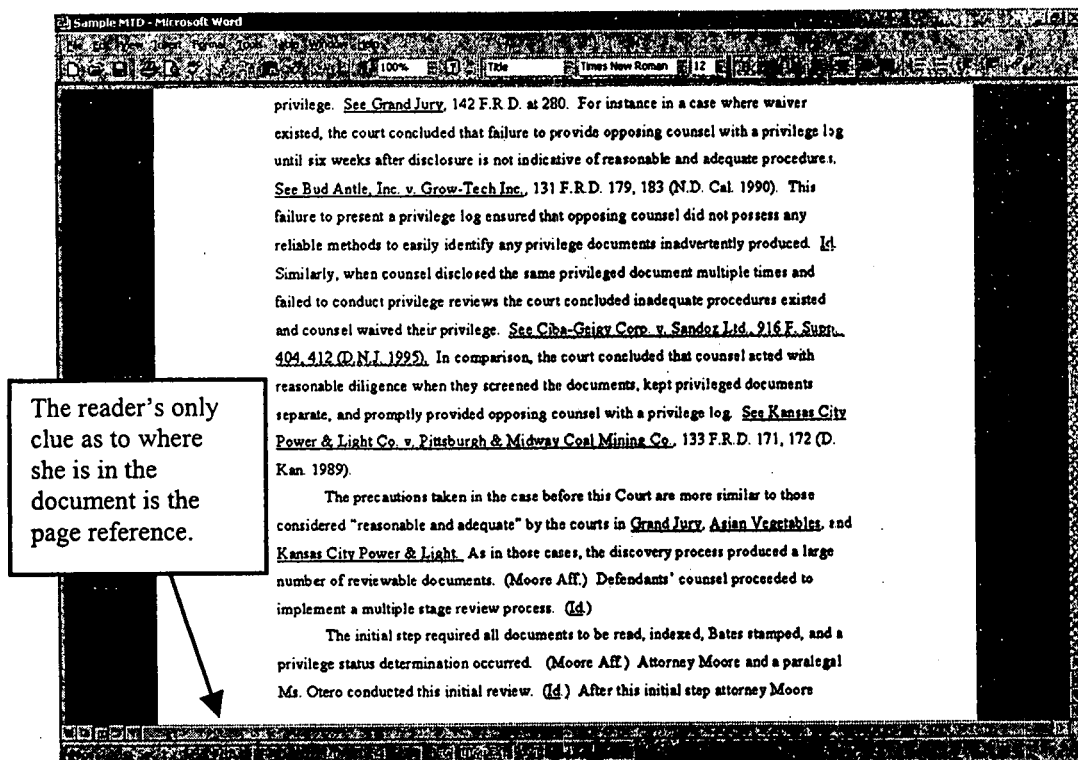
180. For example, under Local Rule 32 for the First Circuit Court of Appeals, "all papers exceeding 10 pages in length" must be submitted on a 3.5-inch computer disk in WordPerfect, along with nine paper copies of the brief. 1ST CIR. R. 32. In the Fifth Circuit, under Local Rule 31.1 a party has to file one computer disk copy with the court along with the paper copies only when the brief was generated by computer. 5TH CIR. R. 31.1. The Fifth Circuit also requires a party to serve a disk copy on each party separately represented by counsel. *Id.* Although the Fifth Circuit does not require a particular word processing program, it "greatly prefers the use of WordPerfect 5.1 or greater to insure compatibility" with their system. *Id.*; see also 8TH CIR. R. 28(A)(d).

181. See, e.g., 8TH CIR. R. 28(A)(d).

182. Microsoft addresses metadata in its online product support service. See WD2000: How to Minimize Metadata in Microsoft Word Documents (Q237361), at <http://support.microsoft.com/default.aspx?scid=kb;EN-US;q237361> (last reviewed Jan. 22, 2003).

183. See "...Shares Well with Others..." *Coping with Metadata Issues*, at http://www.microsystems.com/Shares_Well.htm (June 2000); Larry Anders, *Do you know what your invisible ink says?* at http://www.tpcug.org/newsletter/nl_2000/november2000/newsletter_frameset.htm (last visited Feb. 7, 2003). The potential embarrassment inherent in metadata came to light when metadata revealed that the 1999 Microsoft Annual Report was created on a Macintosh computer. See Richard M. Smith, *Was the Microsoft 1999 Annual report Produced on a Macintosh?*, Oct. 4, 1999, at <http://computerbytesman.com/privacy/msftar99.htm> (last visited Feb. 7, 2003).

FIGURE 1
(Sample brief submitted on disk in Word)



drive. With access to the electronic file, the court could integrate arguments made in the briefs more easily into the final opinion. Therefore, while electronic briefs submitted in this form may be more convenient for the court, attorneys should be aware of the risks: the court may have more trouble reading the electronic counterpart to a paper brief and this electronic counterpart may inadvertently expose more information than the paper brief.

B. PDF Briefs

Briefs prepared and submitted as Portable Document Format¹⁸⁴ (PDF) files may be perceived as requiring somewhat more technical expertise; however, the technology is really quite accessible. Briefs filed in PDF format are exact replicas

184. When a document is submitted in PDF format, the reader must use Adobe Acrobat software to open and view the document. This viewing software is free and allows a document to be viewed electronically as a "snapshot" of the original document. Courts favor submitting electronic documents in PDF format because it maintains the integrity of the document; when accessed, the document cannot be altered or modified. In addition, regardless of whether a document was originally created in Word or WordPerfect, the document can be viewed as the writer intended with its format intact. Word processing programs such as WordPerfect use printer-specific formatting, which means that a document may look different on different printers. Not only might court personnel view a slightly different document because of a different printer, but the document might also be inadvertently closed and saved with the unintended changes, which could impact features of the document such as page numbers.

of the paper version of the brief and often contain no hyperlinks (although in the latest versions of Adobe Acrobat, hyperlinks can be included).¹⁸⁵ The PDF format for electronic submissions has many proponents because the technical requirements for creating and reading PDF files are minimal.¹⁸⁶ The party creating the PDF document will typically already have the word processing software that created the original document (Word or WordPerfect) and will only need Adobe Acrobat software to convert the files to PDF files.¹⁸⁷ Documents not created by the party can be scanned and then, with Adobe Capture, converted into PDF files.¹⁸⁸ For many briefs filed in PDF format, the main advantage to the court is electronic access and the ability to conduct a word search in the brief; however, these same advantages exist for briefs submitted on disk in Word or WordPerfect format. The only real advantages of the PDF format over more common word processing software are the consistent accessibility of PDF files from any computer (regardless of what word processing program, if any, is on the computer) and the heightened security of PDF files from unauthorized changes to the file.¹⁸⁹ Newer versions of the PDF software have additional secure user enhancements, such as the ability to annotate the document and cut and paste text from the PDF document to another document.¹⁹⁰

A court is much more likely to require that briefs be filed in PDF format when the court is committed to electronic filing. The preference for PDF stems from the security needs for court documents. Because PDF maintains the integrity of the document, it is the preferred format in courts that participate in electronic filing projects, such as CM/ECF¹⁹¹ and state e-filing initiatives.¹⁹² This preference for PDF

185. See, e.g., the briefs contained in the North Carolina court web site at http://www.ncappellatecourts.org/nc_main_1.nsf (last visited Jan. 22, 2003). See also the briefs available in the federal courts using CM/ECF and accessed through the PACER system. See PACER, *supra* note 24.

186. Corel, the owner of WordPerfect, has licensed the Adobe technology in its 2000 and 2002 suites (WordPerfect 9 and 10), including the ability to publish a WordPerfect document in PDF format without any additional software. *WordPerfect Feature Guide*, at http://www.corel.com/enterprise/pdfs/legal/WPO2002_Standard_FeaturesGuide_NorthAmerica.pdf (May 2001) (last visited Jan. 15, 2003).

187. The Adobe Acrobat program and the free Adobe Acrobat Reader should not be confused. To convert a word processing document into a PDF file, the full Adobe Acrobat program is required. Adobe Acrobat ® can be purchased online from Adobe at www.adobe.com and through retail outlets. To merely view a PDF file, all that is needed is the free Acrobat Reader. It is also important to understand the distinction between a "scan" and a "capture." Adobe Capture is not a scan utility; it is an OCR conversion tool that takes scanned (i.e., imaged) documents and tries to convert the character images into electronic text that can be recognized and manipulated by Acrobat. See David L. Masters, *Electronic Filing: Beyond the Basics*, 31 COLO. LAW. 61 (2002) (providing an explanation of how to create an electronic brief in PDF format).

188. *Id.*

189. For more information about PDF files generally, see <http://www.adobe.com/products/acrobat/legalsolutions2.html> (last visited Jan. 15, 2003). See also <http://www.planetPDF.com> and www.PDFzone.com (last visited Jan. 15, 2003) for additional information concerning the creation of PDF files.

190. Text from a PDF file created with Adobe Acrobat 5 can be saved into Rich Text Format (RTF), HyperText Markup Language (HTML), or extensible Markup Language (XML). See <http://www.adobe.com/products/acrobat/legalsolutions2.html> (last visited Jan. 15, 2003).

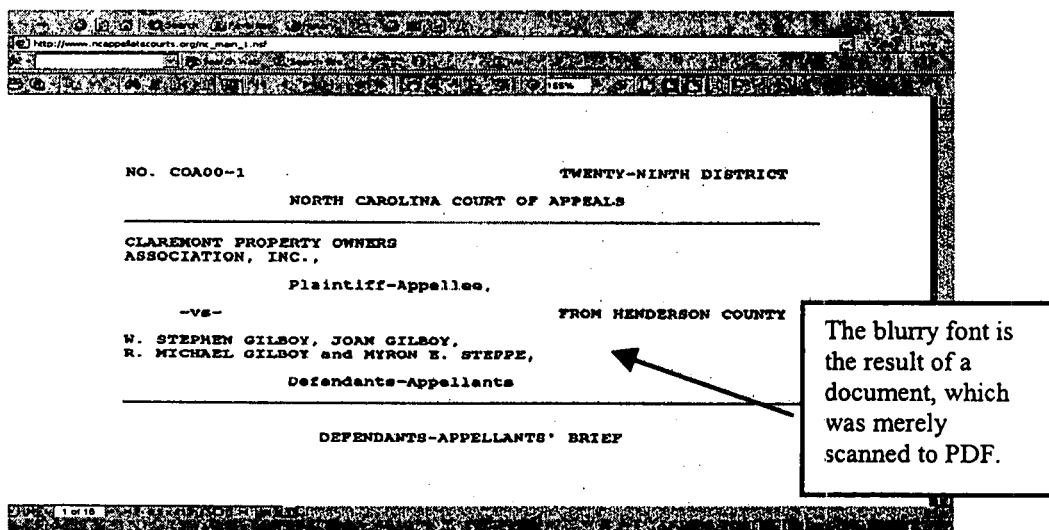
191. CM/ECF, Clerk's Office at Your Desktop, at <http://pacer.psc.uscourts.gov/cmecf/index.html> (last visited Jan. 22, 2003).

192. State courts also rely on PDF format. See, e.g., North Carolina Appellate Courts, at http://www.ncappellatecourts.org/nc_main_1.nsf (last visited Jan. 15, 2003); Florida Supreme Court, at www.flcourts.org/sc/clerk/briefs/index.html (last updated Jan. 14, 2003); the Texas Supreme Court, at <http://www.courtstuff.com/Sc/eBrief/files/20010079.htm> (last visited Jan. 15, 2003). While the Texas Supreme Court does not require PDF format, it "greatly prefers the use of searchable Portable Document Format Files (Adobe PDF), because files in this format generally may not be altered under normal circumstances." Supreme Court of Texas, *Submission of Electronic Briefing in Granted Cases*, at <http://www.courtstuff.com/Sc/eBrief/index.html> (last visited Jan. 15,

seems to have more focus on preserving the brief as an archived document and little concern for the usability of the brief in the electronic format. As a result, many electronic submissions fail to tap the features in the Adobe Acrobat program and produce electronic documents that are ineffective in the electronic environment. (See Figure 2.) Moreover, because many briefs are merely scanned into a PDF format, the briefs often appear grainy and of poor visual quality.¹⁹³ It appears that many briefs are merely submitted in paper format, scanned, and converted to PDF format.¹⁹⁴

When the conversion to PDF is done in the clerk's office, there is no guarantee that the brief that was intended is the brief that the court will see online. Under these circumstances, it is possible for formatting to be lost or the typeface to appear blurred as a result of the scanning process.¹⁹⁵ This results in an electronic brief that

FIGURE 2
(Recent PDF brief filed in the North Carolina Court of Appeals)



is not only difficult to read, but also a brief that cannot be integrated into a judicial opinion. Even if the document is viewed in a readable size typeface, the reader is

2003). Documents submitted in Word or WordPerfect are converted to searchable PDF by the Clerk's office. *Id.*

193. See North Carolina Court of Appeals web site, at http://www.ncappellatecourts.org/nc_main_1.nsf (last visited Jan. 22, 2003) (providing examples of electronic briefs).

194. See Rothman, *supra* note 39.

195. Some technical experts have been critical of the reliance on PDF for legal documents such as briefs: A standard document, created in 12-point type using a portrait orientation, produces an awkward page under PDF. If it is displayed at a resolution large enough to read it, only half the page can be viewed at a time. If it is displayed in "Fit Page" view, the typeface is usually too small to be readable.

Using Large Format PDF, at www.courts.net/usepdf.pdf (last visited Jan. 15, 2003). In addition, lawyers must be careful to use embedded fonts in their documents to preserve the intended pagination of the document. *Id.* If an attorney uses a font that is unavailable to the reader, the reader's system will automatically replace the font and may, as a result, disrupt the pagination of the document. *Id.*

often left with a reading environment that is difficult to navigate because the brief fails to use the navigational features available for PDF documents.

Within a PDF document, the author of the document has the option to use the "navigation pane."¹⁹⁶ The navigation pane opens a frame where the author can include a table of contents to the document called the "bookmarks." These bookmarks can serve as both navigational and associative hypertext links within the brief.¹⁹⁷ A reader can open the navigational pane, click on the bookmarks tab and see a table of contents that appears to the left of the document text. The reader can click on different levels of the table of contents and be taken to that point in the document. Some courts already recognize the value of the navigational pane. At least two jurisdictions now request that electronic briefs use the bookmark feature to link the table of contents to the argument section of the brief.¹⁹⁸ In addition to the "bookmark" tab, there is also a "thumb-nail" tab that orients the reader with the entire document and allows the reader to view "thumb-nails" (graphical representations of each page in the document). The reader can then click on the "thumb-nail" to navigate to different points in the briefs.

Although these features are relatively easy to incorporate in an electronic brief, the majority of briefs submitted electronically in PDF fail to use any of these features. (See for example Figures 3 and 4.) The lack of organizational clues in these briefs makes it easy to get "lost" in the document. When coupled with the blurry typeface that is common in scanned PDF documents, it becomes clear that using PDF format for its archival benefits sacrifices the benefits possible within an electronic environment.

In stark contrast, electronic briefs that take full advantage of the navigational features in the Adobe program are more readable and allow the court to access the text.¹⁹⁹ Thus far, the only briefs found that use the navigational pane are CD-ROM briefs. There appears to be a misconception that these features are only available for complex briefs. Even in the simplest brief, the brief would be much more effective in the electronic medium if it provided internal, organizational aids for the reader so that the reader would have a clearer sense of where she was in the brief and how to quickly move to different parts of the brief. (See Figure 5.)²⁰⁰

When these features are limited to an internal hypertext system, the reader is only moving within one document and is not linking to other documents and sources. While these features greatly enhance the usability of a document in an online environment, they are "hidden" in the paper document. Therefore, even in jurisdictions that require that the electronic submission appear the same as the print

196. See the Adobe web site, at www.adobe.com/acrobat (last visited Jan. 15, 2003) (providing a more complete explanation of these features).

197. See *Ergonomic Considerations in Electronic Communication*, *supra* part II.A.2.

198. See, e.g., FED. R. APP. P. 32(e)(7) (2002), 1ST CIR. R. 32.1(h) (2002).

199. See Texas Supreme Court web site, at <http://www.courtstuff.com/Sct/eBrief/files/20010079.htm> (providing available briefs); and Florida Supreme Court web site, at <http://www.flcourts.org/sct/clerk/briefs/index.html> (last updated Jan. 21, 2003).

200. This is the electronic brief submitted in *United States v. Dakota*, 197 F.3d 821 (6th Cir. 1999), available at <http://www.crimapp.com/Dakota/motion.pdf> (last visited Jan. 15, 2003).

FIGURE 3
(PDF brief fails to incorporate navigational links)

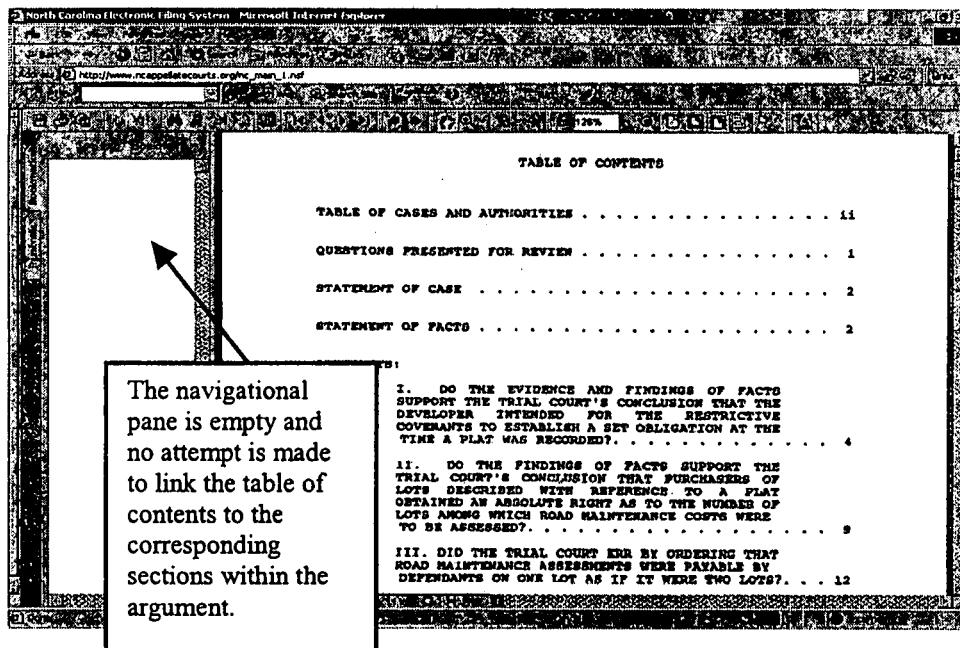


FIGURE 4
(PDF brief fails to incorporate associative links)

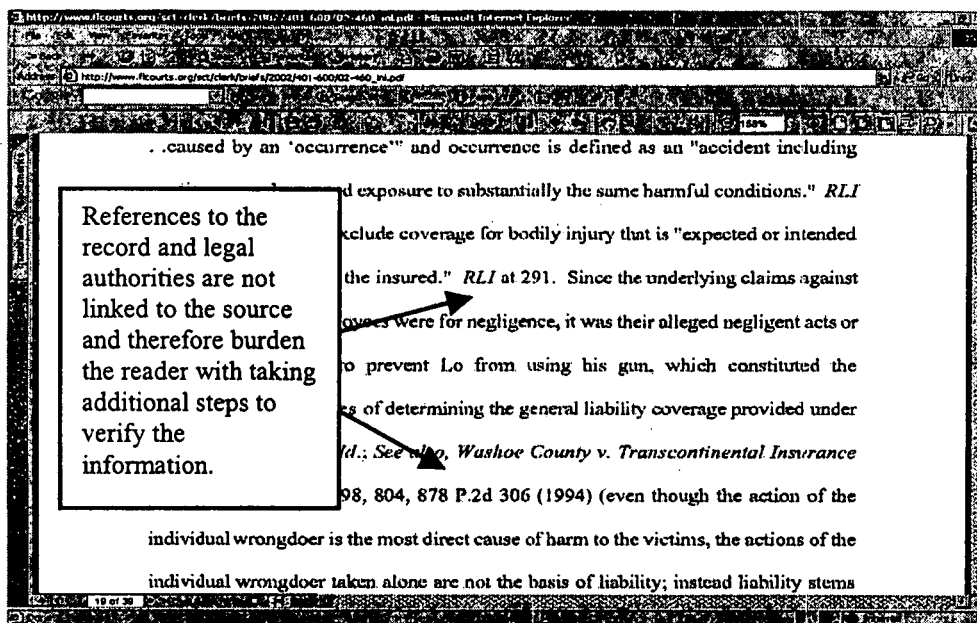
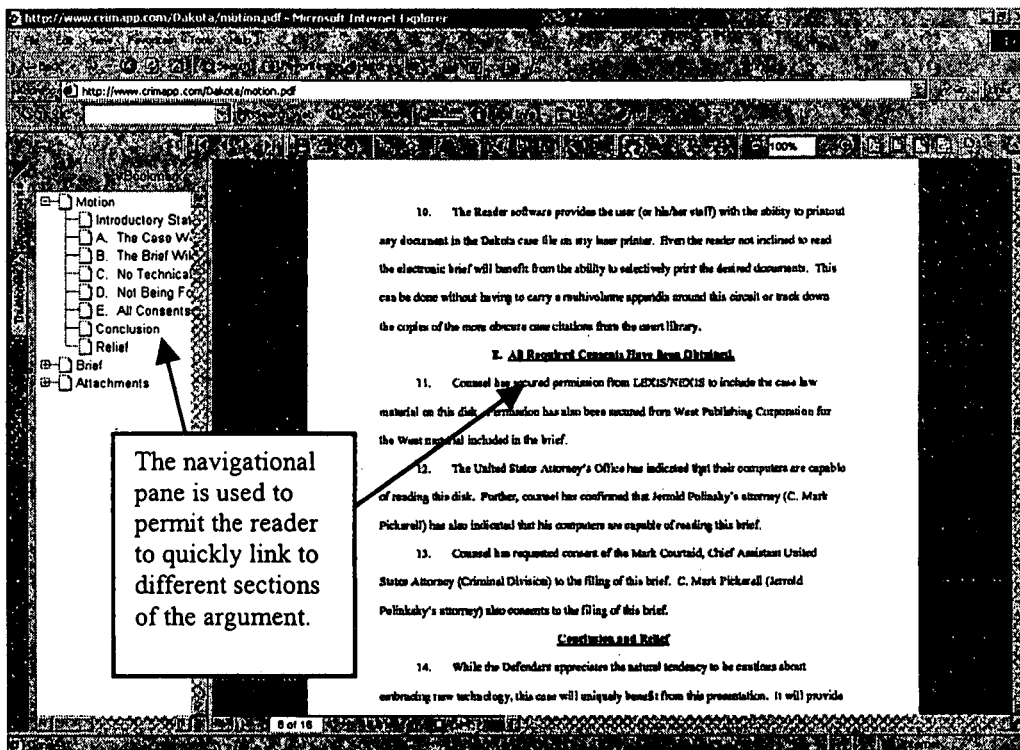


FIGURE 5
(PDF brief using navigational features)



submission, using these PDF features would still be in compliance with local filing rules. The printed version of the brief would have the same content and appear the same as the electronic file. Using the navigational features would not impact the paper brief and would enhance the electronic brief. Thus, although the PDF format for electronic briefs has emerged as the leading format, the failure to use all the available features often results in briefs that are not easily read, understood, or used in an electronic format. As the legal writer and reader better understand these features, the quality of electronically filed PDF briefs should improve dramatically.

C. The CD-ROM Brief

Through existing technology, an electronic brief with hypertext links can be posted on a court website or recorded on a CD-ROM.²⁰¹ Hyperlinks add a new

201. See Francis X. Gindhart, *Hypertext Briefs: Interactive Appeals—Make Your Case Better, Stronger, Faster*, 217 NEW YORK L.J. 75 (1997). The Eleventh Circuit Court of Appeals allows hypertext briefs to be uploaded via the Internet to the court's web site. 11TH CIR. R. 31-5. To record a CD-ROM, instead, for submission to the court, the party will need a CD-R or CD-RW drive, CD burning software, blank CD-R media, CD labels, and a printer to print the labels. See Rothman, *supra* note 39. The difference between CD-R and CD-RW disks is that CD-RW allows the user to write to the disk many times, thus allowing the file to be over-written. CD-R disks permit writing to the disk only once but unlimited reading of the disk. Using a CD-R disk is therefore a more secure process

dimension to electronic communication because "true hypertext can only exist online."²⁰² The act of reading text on a computer screen, clicking on a link and moving instantaneously to text in another document, has no comparable equivalent in paper media.²⁰³ Instead of stopping and digging through piles of documents (*e.g.*, exhibits, appendices, etc.) for a reference in the brief, hypertext allows the user to have instant access to the transcript; video, audio, and text exhibits; and legal authority (including case law and statutes). A click on a hyperlink opens the referenced source; another click returns users to their place in the brief.²⁰⁴ Hypertext becomes a central defining feature of "electronic communication."

As technology has advanced, hypertext has become available within different electronic word processing programs. Hypertext was first developed as an authoring program for the World Wide Web on the Internet. Referred to as Hypertext Markup Language (HTML), this encoding method adds formatting codes and hyperlinks to web-based text.²⁰⁵ Both Microsoft Word and Corel WordPerfect can convert a regular text document into HTML for viewing on a web browser and allows the author to insert hyperlinks for internal linking within a document and external linking to other documents.²⁰⁶ Hypertext capabilities are also available in PDF documents and in other proprietary formatting programs.²⁰⁷

The newest addition to hypertext authoring is Extensible Markup Language (XML).²⁰⁸ The Legal XML group is currently creating standards for a variety of legal documents. The focus on XML is more related to electronic filing projects because XML offers a web-based standard that works well with court documents on the Internet.²⁰⁹ Therefore, HTML and XML are generally used for documents that need to be accessed on the Internet with a web browser (such as Internet Explorer

because, once the hypertext brief is burned onto the disk, the documents and video or audio images cannot be changed, even if the hypertext brief is copied onto a hard-drive. For this reason, eventually CD-R disks may take the place of paper filings. "New compact disc drives that allow users to create their own compact discs may signal 'the beginning of the end' of the era of paper briefs." Crowell, *supra* note 46, at 11.

202. HYPERTEXT HANDBOOK, *supra* note 3, at 143.

203. See Francis X. Gindhart, *Documents, Transcripts, Exhibits Are on Hand in Hypertext Briefs*, 217 NEW YORK L.J., 71 (1997) (describing the advantages in hypertext briefs). "If required to pinpoint errors made at trial for the appeals judges, the hypertext brief allows the lawyer not only to describe them but to show them. There may never be a better, more natural vehicle than appellate litigation to demonstrate the incredible power of [hypertext]." *Id.*

204. A judge will no longer need to put down a printed brief to pull a lawbook from a library shelf or to dig through a multi-volume appendix to find a documentary exhibit. Nor will it be necessary to set up a VCR to play a videotaped excerpt of testimony or a live or animated filmed exhibit. By sitting at a desktop computer in chambers or using a laptop computer anywhere, the appellate judge can work on the hypertext brief undistracted by needing additional references not readily at hand.

Id.

205. See NIELSEN, *supra* note 119, at 191-99 (giving a general explanation of HTML).

206. See Devin, *supra* note 83, at 388.

207. *Id.*

208. There are several good sources of information on XML. A good starting point is the Legal XML web site at <http://www.legalxml.org> (last visited Jan. 15, 2003). See also Charles F. Goldfarb, *XML in an Instant: A Non-Geeky Introduction*, at <http://www.xmlbooks.com/press/nongeeky.htm> (2000) (last visited Jan. 15, 2003).

209. See Plotkin, *supra* note 14 (noting the advantages of XML for legal documents.). XML allows documents to be searched more quickly and accurately. For example, a search of a court's database for documents filed by attorney John Smith would only extract those documents where Smith actually was the filing attorney, and not any and all documents where the name "John Smith" appears. *Id.* Several court XML filing projects are currently underway in Georgia, Utah, and New Mexico. See COURTS.NET, *supra* note 8.

or Netscape Navigator). While documents using PDF or other proprietary methods²¹⁰ can be viewed through the Internet, they are more commonly associated with CD-ROM submissions.

With the use of hypertext technology, a party's written argument would provide the court with access to the brief, the authorities cited, and the record, all within a single CD-ROM.²¹¹ This ability to include hypertext links in a brief radically departs from traditional briefs.

CD-ROM briefs are really a misnomer since their defining feature is that they use hypertext technology and are created with the intention that the brief will be read and used in an online environment.²¹² While PDF briefs have underutilized the features available, CD-ROM briefs can focus too much on the technology and as a result generate other problems. Hypertext features, while functional within the CD-ROM platform, may face serious obstacles in the CM/ECF infrastructure due to the inability to preserve all the links. The need for the actual CD-ROM to preserve the functionality of the hypertext brief may also appear to contradict the "paperless" goals of electronic filing projects. Although the CD-ROM (and all the data that it can hold) would certainly require less storage space than multiple copies of paper briefs and the record or joint appendix for a case, the CD-ROM is nonetheless a tangible product that would have to be stored, inventoried, and maintained. In that sense, the CD-ROM brief acts as a mere "placeholder" for paper submissions.

Moreover, when taken to extremes, hypertext can lead a legal reader to places they may not want to go or it can lose a reader along the way. (See Figure 6.)²¹³ In some cases, the CD-ROM brief may use such sophisticated technology that it may intimidate the reader.

Despite these potential problems, a growing number of attorneys are constructing their own "home-grown" CD-ROM briefs and acting as strong advocates for this choice of electronic media.²¹⁴ In addition, a cottage industry is emerging of commercial providers who craft CD-ROM briefs.²¹⁵ The CD-ROM brief's appeal

210. Several companies have emerged ready and willing to create CD-ROM briefs. These firms include companies such as Record Press, Inc., RealLegal, and Counsel Press, LLC. "Their enthusiasm in gearing up to provide this service demonstrates their faith that it is going to be a lucrative and burgeoning field." Devin, *supra* note 83, at 383. The proprietary methods these firms use is usually a cross between HTML and PDF and is installed on the CD-ROM to allow the hypertext brief to be viewed. RealLegal describes its method as a "proprietary electronic publishing software created specifically for legal publishing." See RealLegal E-Brief, at <http://www.reallegal.com/ebrief.asp> (last visited Jan. 22, 2003).

211. Currently, a CD-ROM can store up to 700 megabytes of data. This translates to nearly 2000 3.5-inch disks, 275,000 pages of text, eighty-one minutes of audio, or over 5000 images. See Snow, *supra* note 83, at 619.

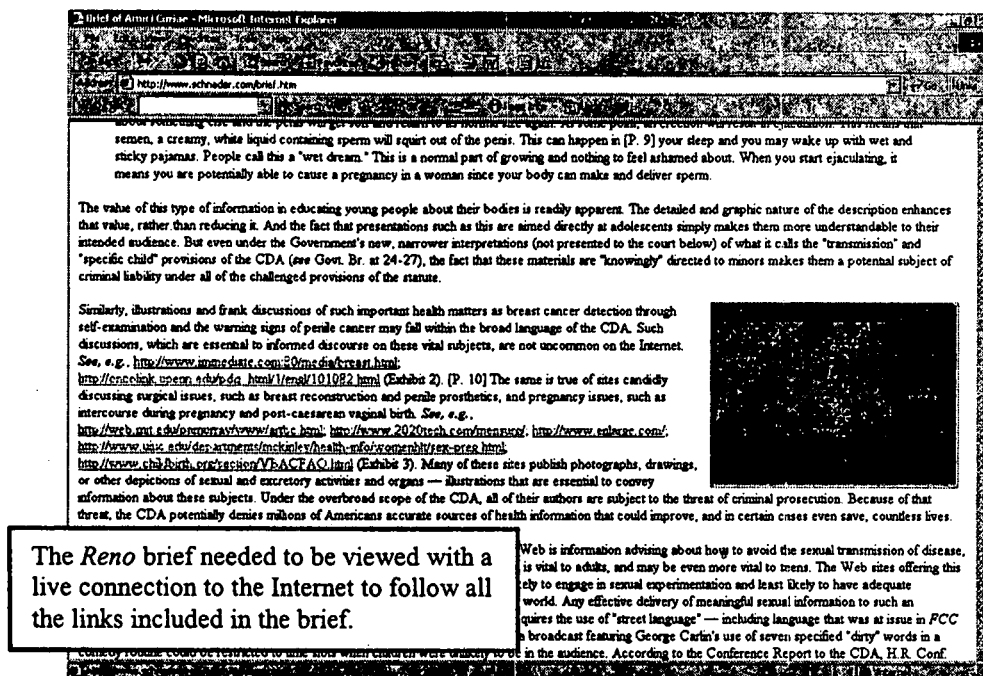
212. See discussion *infra*, part I.B.3.

213. This brief in *Reno v. ACLU* contained links to Internet sites. While reading the brief, it would be possible to completely leave the brief and become involved in surfing the Internet. Especially in appellate briefs, judges are limited to the record below, and it would be clearly improper to direct the reader outside the record. Because of this problem, most jurisdictions that allow hypertext in a brief specifically prohibit links outside documents related to the appeal. See, e.g., 1ST CIR. R. 32.1 (2002) (describing in complete detail what files and links are permitted on the CD-ROM).

214. See Masters, *supra* note 187 and accompanying text.

215. See, e.g., RealLegal at <http://reallegal.com/ebrief.asp> (last visited Jan. 22, 2003); CaseStat at <http://www.casestat.com/services.htm> (last visited Jan. 22, 2003); THEMISLegal at <http://www.themislegal.com/services/ebrief.html> (last visited Jan. 22, 2003). See also Snow, *supra* note 211 and accompanying text.

FIGURE 6
(CD-ROM *amicus* brief for *Reno v. ACLU*)



is understandable because it follows the traditional conventions of appellate briefs. At the same time, the CD-ROM brief is, in essence, a "package" of all the materials the court will need to make a decision.²¹⁶

Sample CD-ROM briefs from commercial vendors demonstrate the potential effectiveness of the CD-ROM brief and how as a medium it reinforces theories involving online cognition. As the cognitive research shows, CD-ROM briefs can increase the ability to educate and persuade by the successful integration of hypertext technology within recognizable schemas that flow from well-drafted point headings and a clear and accessible organizational plan. The commercial CD-ROM briefs are characterized by their strong emphasis on employing navigational schemes that make the structure of the brief and where the reader is in the brief easily discernible. (See Figure 7.)²¹⁷ Their drawback, however, is that the vendors are not consistent in their navigational cues, thus forcing the reader to learn different systems. For example, in some commercially prepared CD-ROM briefs, the frame with the table of contents is on the right instead of the left as is more commonly found in PDF files. (See Figure 8.)²¹⁸

216. For example, under the First Circuit's Rule 3, a CD-ROM submission may include briefs and appendices of all the parties, briefs of amicus curiae, the entire record on appeal (or portions thereof), materials cited by the parties in the submissions, and documents from prior submissions. 1ST CIR. R. 3.

217. 530 U.S. 238 (2000). The CD-ROM brief is available as a sample brief from RealLegal.com at www.reallegal.com/ebrief.asp (last visited Jan. 15, 2003).

218. See RealLegal.com, at <http://www.reallegal.com> (last visited Jan. 15, 2003) (providing a sample CD-ROM brief that has been redacted for public distribution.).

FIGURE 7
(CD-ROM brief in *Harris Trust & Savings Bank v. Salomon Smith Barney Inc.*)

PETITIONER'S BRIEF ON MERITS	
AND RULE 29.6 STATEMENT	1
TABLE OF CONTENTS	1
TABLE OF AUTHORITIES	1
OPINIONS BELOW	1
JURISDICTION	1
STATUTES INVOLVED	1
STATEMENT	1
A. Statutory Background	1
B. The Facts Underlying This Case	6
C. Proceedings in the District Court	9
D. Proceedings in the Court of Appeals	11
SUMMARY OF ARGUMENT	13
ARGUMENT	15
I. ERISA AUTHORIZES CIVIL ACTIONS SEEKING RESTITUTION FROM NON-FIDUCIARY PARTIES IN INTEREST THAT ENGAGE IN PROHIBITED TRANSACTIONS WITH A PLAN	15
A. ERISA Authorizes Actions Seeking "Appropriate Equitable Relief" For "Any Act Or Practice Which Violates Any Provision Of Title I"	15
B. A Prohibited Transaction Between A Plan And A Party In Interest	16

The navigational links within the Table of Contents are embedded colored links in the page numbers.

FIGURE 8
(CD-ROM brief from *Microsoft Corp. v. United States*)

Microsoft Corporation v. United States of America (No. 95-1300) (Supreme Court)	
C. No Causal Link Was Shown between the Allegedly Anticompetitive Acts and the Maintenance of a Purported Monopoly.	115
To establish a monopolization claim, the plaintiff must demonstrate that the defendant in fact acquired [or maintained] monopoly power as a result of unlawful conduct. <i>Act'n for Intercollegiate Athletics, 733 F.2d 854</i> . Areeda explains:	
To find that a monopolist's act may improperly impair rivals' opportunities does not say how substantial a contribution that act has made or may make to achieving or maintaining the monopoly. The effect may in fact be marginal or even inconsequential.	
III. AREEDA, 733 F.2d at 77. The plaintiff [thus] has the burden of pleading, introducing evidence, and presumably proving by a preponderance of the evidence that reprehensible behavior has contributed significantly to the achievement or maintenance of the monopoly. <i>Id.</i> 733 F.2d at 67 (emphasis added). Indeed, the requirement of a causal link between the challenged conduct and the maintenance of monopoly power is inherent in the <i>Grainell</i> test. 384 U.S. at 472-73; see also <i>PSC Repair Service, Inc. v. Honeywell, Inc.</i> , 194 F.2d 811, 822 (5th Cir. 1957) (no showing that defendant's conduct "allowed [defendant] to achieve and maintain monopoly power in the [relevant] market").	
Plaintiffs have never contended that Microsoft acquired monopoly power unlawfully. To the contrary, the DOJ's own economist in 1995, Nobel Laureate Kenneth Arrow, acknowledged that "Microsoft appears to have achieved its dominant position in its market as a consequence of good fortune and possibly superior product and business acumen." <i>EX-247</i> at 11. As a result, even assuming it possesses monopoly power, Microsoft, "no less than any other company, is permitted and indeed encouraged to compete aggressively on the merits." <i>Foreman Pro Color, 733 F.2d at 244</i> . As Judge Posner explained, "with lawful monopoly power has no general duty to help its competitors, whether by holding up price umbrellas over their heads or by	
B. Appellant's Brief	115
C. TABLE OF CONTENTS	115
D. TABLE OF AUTHORITIES	115
E. GLOSSARY	115
F. WITNESSES AND DEPOSITION	115
G. JURISDICTION	115
H. STATEMENT OF THE ISSUES	115
I. STATEMENT OF THE CASE	115
J. SUMMARY OF ARGUMENT	115
K. ARGUMENT	115
L. Microsoft's Design of Windows	115
M. Microsoft Did Not Maintain a Monopoly	115
N. Microsoft Does Not Possess a Monopoly	115
O. Microsoft Did Not Engage in Unlawful Conduct	115
P. Microsoft Did Not Attempt to Monopolize	115
Q. Microsoft Did Not Attempt to Monopolize	115
R. The District Court's Summary Judgment	115
S. The District Court's Summary Judgment	115
T. The District Court's Summary Judgment	115
U. The District Court's Summary Judgment	115
V. CONCLUSION	115
W. Addendum to Appellant's Brief	115

Note the navigational pane on the right side along with the use of blue colored text to indicate associative hypertext links to the authorities cited within the brief.

The CD-ROM brief and its capability to evolve with emerging technologies has the most potential to revolutionize the legal brief. When combined with the attributes of clear and cogent prose, CD-ROM briefs have a strong potential as a persuasive tool.²¹⁹ Future briefs could be tailored to the preferences of each judicial reader by font, organization, or even an audio option so that a judge could listen to a brief rather than read it. Under some circumstances, the CD-ROM as a delivery platform outperforms network access both in terms of speed and reliability.²²⁰ It is not unrealistic to consider the CD-ROM as the most viable replacement for paper submissions. Rather than just existing as a "companion brief," the CD-ROM brief would be the "hard copy" of the brief.

If the CD-ROM brief and the technology that goes along with it becomes pervasive, courts may have other concerns to deal with. As the CM/ECF project is developed, judges may demand a system that accommodates the ability to maintain links between the brief, the record, and the legal authority. This increased technical sophistication, both to create and access these briefs, may lead to increased litigation costs.²²¹ Who will bear these costs and how will they be borne? In Washington and California, state courts are already advising parties that technology costs may not be recoverable.²²² The use of CD-ROM briefs also raises serious questions within the appellate context and the appropriate standard of review. If a CD-ROM includes video and audio clips of the evidence submitted to the trial court, the appellate courts might become inappropriately involved with determining the credibility of the evidence. Moreover, the capability of inserting particularly shocking or disturbing images within a brief could be viewed as overly manipulative.²²³

To date, however, the CD-ROM brief has been limited to relatively complex cases where the court infrastructure is ready to accommodate the medium and the parties either have the technical expertise in-house or can afford the private vendors ready and willing to transform traditional briefs. In contrast, the majority of

219. Courts are eager to see more use of the available technology. In *Alcoa v. Aetna Casualty & Surety Company*, the court made its enthusiasm for the technology clear:

The record in this case was vast, covering 57,000 pages of Clerk's Papers and a Report of Proceedings of over 12,000 pages. The parties agreed to bear the cost of scanning the record into an electronic format. The parties also submitted their briefs in CD-ROM form with hyperlinks to the record and the cases cited. We express sincere appreciation to the parties for doing this, as it greatly enhanced our ability to handle this case. The savings to the Court in time-motion efforts alone enabled us to retrieve and examine relevant parts of the record with ease, and made the record far more accessible than it would have otherwise been. The materials in this case occupy about 50 banker's boxes. We note that there is no reason why parties in more routine appeals to this Court should not seriously consider submitting the record and briefs to us in a similar format.

998 P.2d 856, 861 n.1 (Wash. 2000).

220. See *supra* note 141 and accompanying text.

221. *Contra* McChrystal, *supra* note 109, and Biscardi, *supra* note 175 (citing an estimated cost of an In-House CD-ROM brief as being between \$500 and \$600).

222. See, e.g., proposed WASH. SUP. CT. R. 10.9(f) ("The costs incurred in preparing and filing corresponding briefs are not recoverable costs under Title 14 or as attorney fees under Title 18 of these Rules."). In the Second Appellate District of California, parties are urged to cooperate in filing a single CD-ROM and are warned, "Counsel should not assume that the cost of preparation will be recoverable." *Invitation to File*, *supra* note 64.

223. See Michigan State Appellate Defender Office web site, at <http://www.sado.org/ebrief/ebrief1.htm> (last visited Jan. 15, 2003) (providing a sample brief that contains graphic pictures, which the trial court had allowed to be shown). On appeal, the defense argued that the probative value of the pictures was low compared to the picture's high prejudicial effect. *Id.* The recurring images did indeed show that a picture is often worth a thousand words. *Id.*

electronic briefs submitted thus far appears to be conservative, and even tentative, in their use of available technologies. However, as the technology becomes increasingly pervasive and accessible, the courts and the parties will expect and demand the hypertext capabilities common in CD-ROM briefs.

CONCLUSION: THE FUTURE OF ELECTRONIC COMMUNICATION IN THE COURTS

Whether motivated by cost considerations or a growing acceptance of electronic media, court interest in electronic communication will continue to grow. During this period of transition, as more courts implement e-filing projects, courts cannot disregard the characteristics and potential of electronic communication. Current insistence that an electronic brief mirrors the paper brief unnecessarily stymies electronic communication. Advances in PDF technology and in other electronic authoring systems can enhance the ability of the electronic brief to educate and persuade. Continuing to rely upon a procedural framework that was constructed for a paper world creates uncertainty and frustrates effective electronic communication.

Some courts are beginning to pave the way for future electronic submissions through evolving procedural rules. Although a "disk requirement" can be a starting point for many jurisdictions, the security problems involving exposed metadata, as well as potential problems with system compatibility, make this option less than satisfactory. At most, this option can help a court become accustomed to working with electronic files prior to implementing a full-blown e-filing system. Instead, crafting flexible procedural rules that can accommodate different abilities and levels of technical sophistication offers more promise. If a court is prepared to accept a computer disk, a CD-ROM, or an electronic file over the Internet, it should clearly articulate these options in its local rules.²²⁴

As the surge toward e-filing at both the state and federal level continues, local rules can and should accommodate and encourage the use of hypertext. At a minimum, more courts need to insist that PDF submissions use the navigational tools within that authoring system. Within a brief, the court should have the advantage of a bookmarked table of contents and thumbnail representations to navigate the brief. Although some judges will continue to rely upon the paper "chambers copy," an increasing number of judges will access briefs electronically. These simple navigational tools will make those electronic submissions more effective.

The use of hypertext to link to sources outside the brief presents a more difficult problem. As currently established, the CM/ECF infrastructure and state e-filing initiatives are not designed to preserve hypertext links between the brief and the record, exhibits, or legal authorities; thus, CD-ROM briefs may not function in an e-filing environment. Nonetheless, although the hypertext functionality may be inoperable in the e-filing process, the CD-ROM brief may well become the preferred "chambers copy."

In response to an increasingly technologically sophisticated judiciary, the practicing attorney must understand the advantages and constraints of the electronic

224. See, e.g., 11TH CIR. R. 31-5.

environment. Because the outline of the brief's argument may well become the brief's key navigational tool, logical and concise point headings are more vital to the brief's effectiveness. In addition to providing the reader with a clear organizational scheme, the brief itself must be attentive to the constraints of online reading. The online reader needs efficient and focused paragraphs, clear sentence structures, the judicious use of links, and a favorable online reading environment. A writer's ability to craft an effective legal argument in an electronic media will depend upon time-tested advocacy skills coupled with a keen understanding of the capabilities of the online environment.

As the legal community continues to experiment with the role of technology in the court infrastructure, the judiciary, the parties, the lawyers, and the public can all benefit from the reasoned and effective use of electronic communication in the courts. Although the initial motivation for electronic communication was a concern for efficiency and the need for storage space, the electronic platform is increasingly becoming the media of choice where briefs will be read and evaluated. As the judicial community becomes more acclimated to this electronic platform, the legal community must respond with electronic submissions that effectively tap into the resources of the technology and meet the needs of the judicial reader. This means providing a clear and pervasive organizational blueprint for the brief. It means using hypertext effectively to aid both in navigation and to access materials outside the document as needed. It means writing in a style that understands both the constraints and the possibilities inherent in the technology. It means the birth of tech-rhetoric.