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The Recording on Appeal: Minnesota's Experience with Videotaped Proceedings

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I. INTRODUCTION

The American legal system depends on an accurate record of all trial proceedings. An attorney may use the daily copy of the record to assess testimony and prepare for the next court day. During a trial, an attorney may ask a court reporter to repeat a question asked of an evasive witness. Trial judges use the record to evaluate proposed jury instructions and to make evidentiary rulings. The record is particularly critical when an appeal is contemplated. Appellate attorneys rely on the transcript to determine whether a case merits appeal and, if so, upon what grounds the appeal should be taken. The record constitutes the sole source of factual information on appeal.
In the nineteenth century, American court reporting methods were based on shorthand language systems. The use of the pen-writer, however, ended in 1910, when court reporter Ward Stone Ireland invented the first shorthand machine—the Stenotype. Though many companies have developed stenographic machines, all require the typing of shorthand symbols on a 21-key pad. A court reporter then translates the paper tape and retypes the contents for use by a judge or attorney.

Computer-Assisted Transcription (CAT) was the next major improvement in stenographic court reporting. Personal computers enable a CAT reporter to transmit the stenographic machine’s data to the computer. Software translates the symbols into English, and the information is preserved on a computer disk.

Improved technology has also provided courts with the ability to record proceedings using electronic equipment. Electronic Court Recording (ECR) utilizes microphones and an audio tape recorder to capture the activities in a courtroom. If the proceedings require a printed transcript, a court reporter transcribes the tape. ECR, while common in administrative hearings in Minnesota, has also been used in some district courts outside the metropolitan area.

In the 1980s, the possibility that courts might desert stenographic court reporting became a reality with the introduction of inexpensive video recorders. Nationally, court systems moved beyond ECR to investigate the use of videotape for making the trial record. Kentucky was the first state to embrace the use of “video courtrooms,” with the videotape as the official record on appeal. Michigan introduced videotape in place of court reporters but required preparation of a printed transcript from the tape where a case was appealed. Several other states, including Minnesota, have experimented with videotaped records in the past five years.

The Minnesota experiment involved three video courtrooms in Moorhead, Rochester, and St. Peter. From the fall of 1989 through December 1991, all proceedings in these courtrooms were videotaped. Appeals taken from trial proceedings followed the Kentucky model, making the videotape the record

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on appeal. During the pilot program, trial attorneys, appellate attorneys, judges, and court personnel were asked to evaluate the technology and its impact on the legal process. An evaluation committee, appointed by the Minnesota Supreme Court, assessed the results.3

This article first examines the nation-wide interest in videotaped records and describes the status of this technology. Second, this article presents the results of the Minnesota experience with videotape and discusses its reception by the bench and bar. Third, this article analyzes the issues surrounding the videotaped record and assesses its impact on the practice of law and the structure of the judicial system.

II. THE NATIONAL EXPERIENCE

Interest in video recording as the verbatim record of court proceedings dates back to the early 1970s. The Franklin County Court of Common Pleas in Columbus, Ohio and the Hamilton County Criminal Court in Chattanooga, Tennessee experimented with video recording from 1973 to 1975.4 These early efforts were unsuccessful, requiring expensive equipment, special lighting, and camera operators.5

Renewed interest in courtroom video recording coincided with the introduction of the home video recorder in the early 1980s and the development of voice-activated camera switching technology.6 The first operator-free video recording system was installed in a Louisville, Kentucky circuit courtroom in 1984.7 This first installation received favorable reviews from many of Kentucky's judges and administrators and led Kentucky to install twelve more systems by the end of 1987.8

4. Hewitt, supra note 2, at 3.
5. Id.
6. Voice-activated camera technology allows a computer to send the camera's video output and the microphone's audio output to the video recorder. This video output is triggered by the person who is speaking into a microphone. The picture will remain on the speaker until the speaker stops talking. If no one speaks for a given time, the video will switch to a designated camera shot. If two people speak at once, the video image will be retained by the one who spoke first. Id. at 6.
7. Id. at 3.
8. See id. at 3-4.
Kentucky's commitment to video technology resulted from problems with court reporters who were often unavailable and were “decades behind the rest of the nation in terms of their skill and techniques,” and who were poorly paid in comparison to other reporters around the country. Court administrators in Kentucky also believed a video system would pay for itself within a few years by eliminating court reporters' salaries.

Since 1984, Kentucky has steadily increased its use of video recording. By 1992, forty-six of ninety-one Kentucky circuit court judges used video recording in their courtrooms. When a verdict from one of these courtrooms was appealed, the appellate court would receive the videotape as the trial court record. Under the Kentucky Rules of Civil Procedure, a videotape of trial court proceedings is the official record on appeal. Parties to an appeal may also include, as part of the appellate record, an optional evidentiary appendix consisting of a transcript of the videotape. If filed in the court of appeals, the transcript may not exceed twenty-five pages; in the supreme court, the filing may not exceed fifty pages. According to Kentucky court administrators, the video system provides timely, accurate, and reliable recordings that are superior to traditional transcripts in “contextual richness.”

Most of the negative comments about Kentucky's system, however, pertain to the difficulty of using videotape for appellate review.

In 1987, Michigan was the second state to explore video technology. Michigan courts had a large backlog of unprepared transcripts, despite the use of up-to-date reporting techniques. Even with court reporter salaries equal to or above national averages, court reporter job positions remained vacant. In response, Michigan instituted the use of videotape to make the record.

Unlike Kentucky, Michigan requires that a videotape be tran-
scribed if it is to be used as the record on appeal. Videotapes are transcribed by an in-house court reporter or an independent transcription service contractor. Michigan also discovered that the use of videotape allowed better management of a court reporter's time. An evaluation of the Michigan system revealed that transcription services produced a transcript more quickly than it typically took a court reporter to prepare a transcript from notes.

Positive results in Kentucky and Michigan have led an increasing number of state and federal courts to embark on video courtroom projects. These states include Alabama, Arkansas, California, Florida, Hawaii, Maryland, Minnesota, New Jersey, North Carolina, Oregon, Utah, Vermont, Virginia, and Washington. Federal projects include the District of Columbia, the northern district of California, the eastern district of Louisiana, the eastern and western districts of Pennsylvania, and the eastern district of Texas.

III. THE MINNESOTA EXPERIENCE

The Minnesota Legislature provided the impetus for using video recording technology in the courtroom. In 1988, the legislature directed the State Court Administrator to study the costs and benefits of using video or audio tape recording of civil litigation and administrative hearings. In response, the Administrator appointed a Court Record Study Committee, comprised of judges, court administrators, and court reporters. The committee worked with the National Center for State Courts to undertake a national literature search and analysis of evaluations of alternative court reporting technologies completed in other jurisdictions.

In February 1989, the committee issued its report. The report reviewed use of the stenograph machine, ECR, video re-

16. Id. at 73-75.
17. Id.
19. 1988 Minn. Laws ch. 686, art. 1, § 3.
20. 1 Report of the Court Record Study Committee on Court Reporting Technologies (Feb. 3, 1989) (unpublished report, on file with the Clerk of the Appellate Courts, 245 Minnesota Judicial Center, 25 Constitution Avenue, Saint Paul, MN 55155) [hereinafter Court Reporting Technologies].
cording, CAT and the Computer-Integrated Courtroom (CIC)\(^2\) in twenty-one jurisdictions. The committee concluded that no one technology was "clearly superior in all circumstances and environments."\(^2\) Nevertheless, the committee believed that technological advancements held promise "for more expeditious and less costly production of the court record and warrant[ed] continuing examination."\(^3\) The committee recommended that the legislature fund a pilot project using video recording and another pilot using the CIC concept.\(^4\)

The legislature moved quickly and appropriated funds for the installation of video recording systems in three Minnesota trial courtrooms and the court of appeals. In addition, a CIC was installed in the Second Judicial District in Ramsey County.\(^5\)

In November 1989, the Minnesota Supreme Court established the video record pilot project by administrative order.\(^6\) Courtrooms in St. Peter (Nicollet County), Rochester (Olmsted County), and Moorhead (Clay County) were selected as video record sites. The order also set out special court rules for the project including prohibitions on the use of video recordings by the news media. Following the Kentucky model, the order authorized the Minnesota Court of Appeals to use the videotape of the trial proceedings as the official record. On appeal, a litigant could provide up to fifty pages of printed transcript as a supplemental record, but the video was defined as the official record. If, however, a "video appeal" reached the Supreme Court, the appellant was required to follow the Michigan model by preparing a printed transcript of all of the

\(^2\) Computer-Integrated Courtroom (CIC) technology extends the CAT system into a "real time" transcribing mode. The judge and attorneys have computer monitors and terminals from which they can watch a rough draft of the transcription scroll on the monitor screen and access search procedures using the terminals. In a CIC system, attorneys are able to load computer files, such as depositions and memoranda, into the central processing unit for future access. The system can also retrieve testimony from previous days.

\(^3\) Court Reporting Technologies, \textit{supra} note 20, at ii.

\(^4\) Id.

\(^5\) Id. at 26-27.

\(^6\) 1989 Minn. Laws ch. 335, art. 1, § 3(5). The legislature appropriated $204,000 for the three video pilot sites and $32,000 for the CIC installation in Ramsey County.

trial proceedings. Finally, the court directed the State Court Administrator to prepare an evaluation of the video and CIC pilot projects.

In July 1990, the Supreme Court appointed an Evaluation Committee, chaired by Judge Roger Klaphake of the Minnesota Court of Appeals. The committee included a cross-section of judicial personnel, consisting of judges, court administrators, court reporters, electronic recorders, and an attorney from the Office of the State Public Defender. Several members of the Evaluation Committee had served on the Court Records Study Committee and provided continuity between the two projects. The committee was directed to conduct an evaluation of the video and CIC pilot projects.27

The committee considered several issues during the pilot project period. These issues included the quality of the taped records (audio and video), system reliability, time spent in and out of the courtroom using taped records, and the effects, if any, that videotaping had on the trial and appellate processes. The committee agreed to consider comments from the users of the video systems in evaluating the system. Therefore, trial and appellate attorneys, trial and appellate judges, appellate law clerks, and trial court personnel were surveyed about their experiences in the video courtrooms and their use of the videotape record for appellate review.

A. Video Recording at the Trial Level

The video pilot program began in August 1990. Jefferson Audio Visual (JAVS) of Louisville, Kentucky installed the systems in St. Peter, Rochester, and Moorhead and conducted an orientation for court personnel. The cost of the system was approximately $62,000 per site and included five fixed color cameras, ten microphones, five hi-fidelity video recorders, and an audio-video switching system. One camera was located in the judge's chambers, while other cameras were fixed on the judge, the witness box, and counsel tables. The juror box was not covered by a camera because the Supreme Court order prohibited coverage of jurors.28


Before court went into session, a court employee loaded two blank videotapes into the recorders and began recording when the judge entered the courtroom. A court employee in the courtroom kept a log of the proceedings, noting the times when significant activities took place. At the close of court each day, the tapes were stored in the court administrator's office. The next day, two new tapes were loaded into the recorders. Two additional video recorders, installed in the system, allowed attorneys to bring a blank tape into court to obtain a record immediately.

Use of the video programs at the three sites varied. The St. Peter courtroom, with only one sitting judge, used the video courtroom for all court proceedings. In Rochester, three judges used the video courtroom primarily for contested matters. In Moorhead, three judges used the video courtroom on a regular basis for a full range of proceedings.

Following a design evaluation, based on a recently completed national study by the National Center for State Courts, the committee sent a questionnaire to every attorney who appeared in one of the three video courtrooms. The questionnaire probed the attorney's background, the attorney's experience with court reporting and transcripts, reactions to the video equipment, the dependability and faithfulness of different court reporting methods, the attorney's preferences, and the usefulness of video for other non-record-making purposes. The committee posed a similar set of questions to judges and court personnel.

Responses from the questionnaire revealed that videotape was an effective means of making the record at the trial level. Attorneys, judges, and court personnel generally agreed that video produced a faithful record and a genuine rendering of the events of the proceeding. Several persons, however, noted that the camera did not record non-verbal responses of

29. The cameras were directed by the voice activated switching system. The system would activate a camera, triggered by the speaker's voice. Mute buttons were installed on the bench and counsel table, allowing off the record conferences. Throughout the court session, the video recorders stamped the date and time on the videotape. This established the time reference needed for locating portions of testimony and for citation in appellate briefs.

30. Hewitt, supra note 2, at 3.

31. Evaluation Committee Report, supra note 3, at 8. On the issue of accuracy, 74% of the trial attorneys rated video recording faithful, with 23% reporting no basis to answer. Id.
witnesses. Since sound triggered the switching of the camera, the videotapes did not record a nod or head movement. Likewise, when two persons talked at the same time, the camera fixed only on one person, making it difficult at times to understand what was being said.

The video equipment proved dependable and allowed the court to make the record on a regular basis without equipment breakdown. Most trial attorneys rated the system very dependable or somewhat dependable, while judges and court personnel were generally very positive about the technical aspects of the system. Insufficient training resulted in operator error in several instances.

The survey also examined the intrusiveness of the system. Only nine percent of trial attorneys thought the video recording system was intrusive to them and twenty-one percent thought the system was intrusive to others. Trial judges and court personnel agreed that video was not intrusive and did not affect the trial process.

The only major concern with video recording at the trial level involved videotape review. Finding specific parts of testimony was difficult and time consuming, while transcribing from the tape was inefficient. This problem was of little concern to trial attorneys but dominated the responses from trial judges and court personnel. Although a date-time stamp was placed on the tape, finding an exact spot took some effort because the court log only listed general events, such as direct examination of a witness or an introduction of an exhibit.

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32. Id. at 9.
33. Id.
34. Id. at 9-10.
35. Id. at 10.
37. Id. at 10-11. One reason for the lack of intrusiveness is that the camera seems invisible. The "invisibility" of the cameras was probably due to their compactness, their installation on walls and ceilings, and their automated switching. Unlike a television news camera, the system did not require a camera operator. Once the courtroom proceedings began, participants quickly forgot the cameras were recording. Id. at 11.
38. Id.
39. See id. Only 22% of trial attorneys surveyed had the need to review a tape as part of their advocacy. Id. at 11.
40. Jefferson Audio Visual, the vendor the Minnesota's video recording systems, has since introduced a computer-video interface that allows a judge or clerk to type the log into a computer. The date-time stamp recorded on the video is recorded on
Trial court personnel found that it took two to three times longer to prepare a transcript from videotape than from other methods. While the delay was due, in part, to unfamiliarity with the transcribing video recorder, serious technical deficiencies in the transcribing equipment also produced time lags. Further, the audio quality of the tapes was poor. The video recorder had two-channel stereo, which mixed all microphone signals on the same tracks. Consequently, tracks could not be isolated when “speak overs” occurred.

At the conclusion of the pilot project, the judges in Rochester and St. Peter, who used ECR technology before the installation of the video equipment, noted a preference for the ECR rather than for video, finding the transcribing capabilities of ECR superior to videotape.

B. Use of Videotape as the Record at the Appellate Level

Chief Judge D.D. Wozniak of the Minnesota Court of Appeals agreed to follow the Kentucky model and use the video record on appeal, with no more than fifty pages of selected printed transcript to supplement the video. If a case was appealed, the court administrator sent one copy of the videotape to the Clerk of Appellate Courts. Upon receipt, the Clerk of Appellate Courts sent a notice to the parties informing them that the transcript was deemed complete for the purposes of Rule 131.01 of the Minnesota Rules of Civil Appellate Procedure. Rule 131.01 required receipt of the appellant's brief within thirty days from the date of the notice. The case was assigned to a three-judge panel, and the videotape was pro-

the computer log. To find the testimony of a witness, for example, the operator can now call up the entry on the computer log and enter a search command. The computer turns on the recorder’s fast forward or reverse switch and directs the recorder to the date-time event on the computer log. While locating general events has improved, the technology cannot search for a specific part of the proceeding of special interest to the judge or attorney.

41. Evaluation Committee Report, supra note 3, at 11-14. It should be noted, however, that the trial courts’ need for printed transcripts was primarily limited to sentencing transcripts that are sent to the Department of Corrections to inform the department about the terms and conditions of the sentence. Some judges have dispensed with the sentencing transcript and now prepare a sentencing order, which serves the same purpose as the transcript.

42. MINN. R. CIV. APP. P. 131.01. Rule 131.01 states that the “appellant shall serve and file a brief and appendix within 30 days after delivery of the transcript by the reporter . . . .” Id.
vided to the assigned law clerk for review.43

Even though the Minnesota Court of Appeals agreed to use videotaped records, the court made no other modifications to its internal procedures. Law clerks were expected to review the entire video record as they would a printed record, to spot problems not cited or clearly articulated in the briefs, and to prepare their own statement of facts. Thus, Minnesota's procedure required a wholesale review of the record and placed a heavier burden on the appellate court as contrasted with the review required in Kentucky. The Kentucky appellate courts placed the burden on attorneys to raise all pertinent issues and to cite the applicable record. On review, the law clerks and judges looked only at the record cited in the briefs. Neither judges nor law clerks routinely reviewed the entire record.

Attorneys who had participated in an appeal to the Minnesota Court of Appeals and had used the video record were also surveyed by questionnaire. The limitations of the video record on appeal were revealed in the survey and interview responses. Appellate attorneys spent more time reviewing the tape than they would have spent reviewing a printed transcript.44 The median time for reviewing a taped record was eleven hours, while the median for the printed transcript was four hours.45 Analyzed further, review time was much longer for attorneys who did not handle the case at the trial level. The median time for attorneys who had represented their client at trial was five hours, but, for those who had not represented the client at trial, the median time was thirteen hours.46

The necessity of reviewing a tape in "real time," meaning that a six-hour trial required watching a six-hour videotape, contributed to negative attitudes toward using the video record on appeal. For those attorneys who did not handle the case at trial, ninety-one percent had a negative attitude. For those who did represent the client at trial, fifty percent had a

43. The law clerk reviewed the tape using a video recorder that could play back the tape at twice the normal speed. This system used digital signal processing to alter the audio track, making a person's speech faster and higher pitched. The appellate briefs contained citations to the record based on the number of the videotape and the month, day, year, hour, minute, and second where the reference began on the videotape.

44. Evaluation Committee Report, supra note 3, at 14. Forty percent of appellate attorneys surveyed also represented their client at trial. Id.

45. Id.

46. Id.
negative attitude.\textsuperscript{47} One attorney commented that using a video transcript to write a brief "was an arduous, clumsy, time-consuming, frustrating experience."\textsuperscript{48}

For appellate attorneys who did not represent their clients at trial, eighty-three percent preferred printed transcripts, whereas fifty-seven percent of attorneys who appeared at trial preferred them.\textsuperscript{49} Sixty-three percent of appellate attorneys stated that the use of videotape increased their costs.\textsuperscript{50} An experienced appellate attorney noted that a critical piece of testimony was not recorded clearly on the audio track. The witness said either "would," "should," or "could."\textsuperscript{51}

Law clerks' responses mirrored the concerns of appellate attorneys. Law clerks reported taking two to three times longer to review a videotape, having to stop the tape frequently to write or to dictate verbatim portions of the record. Law clerks also had the same difficulty as trial judges in locating specific testimony cited in the briefs.

The shift from print to video in reviewing the record required a different type of review. Law clerks, like appellate attorneys, could not skim a printed transcript or mark pertinent pages. The video record shifted transcription from the trial court report to the appellate attorneys and law clerks.\textsuperscript{52}

The Evaluation Committee made five recommendations based on the findings at the trial and appellate court levels. First, the committee recommended that video recording technology be endorsed as an acceptable technology for making the court record. The in-court performance of the video equipment demonstrated that it made a faithful record, was dependable, and was not intrusive.\textsuperscript{53}

Second, in recognition of the burden placed on attorneys, judges, and law clerks by the video record on appeal, the committee recommended that typed transcripts be prepared from

\textsuperscript{47} Id. at 15, fig. 8.
\textsuperscript{48} Letter from Cooper Ashley, attorney, (December, 1992) (on file with the Clerk of the Appellate Courts, 245 Minnesota Judicial Center, 25 Constitution Avenue, Saint Paul, MN 55155).
\textsuperscript{49} Evaluation Committee Report, supra note 3, at 15.
\textsuperscript{50} Id.
\textsuperscript{51} Letter from Eric Magnuson, appellate attorney, to the author (November 30, 1992) (on file with the Clerk of the Appellate Courts, 245 Minnesota Judicial Center, 25 Constitution Avenue, Saint Paul, MN 55155).
\textsuperscript{52} Evaluation Committee Report, supra note 3, at 15.
\textsuperscript{53} Id. at 10.
the videotape for both appellate courts. In other words, the committee endorsed the Michigan model over the Kentucky model. In doing so, the committee acknowledged that Minnesota’s legal culture relies on the printed transcript at the appellate level.\(^\text{54}\)

Third, the committee recommended that video recording should be used for cases less likely to be appealed or proceedings that would benefit from this technology.\(^\text{55}\) This recommendation was in response to the current technical limitations of transcribing videotapes. The inability to separate individual microphones on audio tracks and the clumsy tape transport mechanism made transcription more time-consuming. This recommendation acknowledged both the soundness of making the record with videotape and the frustrations of working with a videotaped record on appeal.

Fourth, the committee stressed the need for the court system to improve its methods of utilizing all court reporting resources and technologies.\(^\text{56}\) The committee was not convinced that one method of making the record was superior to all others. The committee noted that “the making of a stenographic record by means of a steno machine in cases where appeal is virtually nil is not a good use of this skill.”\(^\text{57}\) With more stenographic reporters developing work-related injuries, the committee saw the need to re-examine the current method of writing a record.

Finally, the committee noted that technology continues to evolve. The current limitations on video technology will, in all likelihood, be removed with the passage of time. Other recording technologies may arise that hold great potential for the court system. Thus, the committee recommended that the court system continue to monitor and to explore evolving record-making technologies.\(^\text{58}\)

**IV. ISSUES SURROUNDING A VIDEOTAPED RECORD**

Even though Minnesota has not expanded its use of video
recording in the courtroom, judges and court administrators will continue to investigate advancements in technology.\textsuperscript{59} Thus, both the bar and the judiciary should be aware of issues surrounding the videotaped record.

\textbf{A. The Cost of Making the Record}

The cost of making the record will control how the record is made. In a period of shrinking public dollars, judges may view ECR and video technology as viable cost-containment measures. When an average of only 2400 cases are filed in the Minnesota Court of Appeals each year, the making of the record exclusively by stenograph and CAT systems may be seen as a "Cadillac" approach. A creative mix of court reporting technology that responds to various types of cases and their likelihood of appeal could become more common.

This trend may also be mandated as a result of the increasing number of workers' compensation claims filed by official court reporters. In 1992, as part of Minnesota's move to state-funding of the court system, official court reporters moved from the county to the state payroll. Since that transition occurred, an increased number of claims have been filed for repetitive work injuries such as carpal tunnel syndrome and overuse syndrome.\textsuperscript{60} Increased career-ending disability claims placed both a heavy financial burden on the judicial budget and an incentive to reduce work-related injuries. Aside from ergonomic equipment and more frequent rest breaks while in court, stenographic reporters may need to be relieved of high-volume calendars. Stenographic reporters may also need to relinquish the preparation of printed transcripts to transcription services.

As the video study revealed, however, the costs of making the record shift when a video record is used on appeal. In other words, appellate attorneys, judges, and law clerks be-

\textsuperscript{59} District court administrators are exploring the reuse of the two sets of courtroom equipment. It is anticipated that the equipment will be reactivated in the near future.

\textsuperscript{60} There were 40 active workers' compensation claims in fiscal year 1992, with 24 involving upper extremity injuries. Minnesota State Court Administrator, Minnesota Trial Courts: Safety and Workers' Compensation Summary 1-3 (December 1992) (unpublished report, on file with the Clerk of the Appellate Courts, 245 Minnesota Judicial Center, 25 Constitution Avenue, Saint Paul, MN 55155). The average cost per claim in fiscal year 1992 was $6,087. \textit{Id.}
come the "reporters" in the process of viewing the tapes. Time spent reviewing the record increases correspondingly. The Kentucky video model only makes sense if the extent of review by the appellate court is limited to the issues raised by the parties. Otherwise, private attorneys will pass the costs of review on to the client. In addition, government attorneys and public defenders will need additional staff to handle the work load.61

If video record-making follows the Michigan model, attorneys will continue to receive printed transcripts. The cost of a transcript will depend on the level of competition for the transcription services. If, as in Michigan, private transcription services compete for business with official reporters, competitive pressures will probably control costs and enhance timeliness.62

B. Development of Technology

The continued development of technology should be treated as a fundamental assumption. Voice recognition computer systems appear attainable. Voice-activated computers are now marketed to doctors and to attorneys as a means of bypassing secretaries and transcribers. Although these systems require a user to dictate hundreds of phrases so the machine can analyze the voice pattern, engineers are continuing to improve speech recognition. The extraordinary advancements in computer processing power and digital storage media suggest that hardware will be available when voice-recognition software reaches the requisite sophistication needed to instantaneously recognize speech.63


62. Minnesota's Office of Administrative Hearings contracts with private transcription companies to handle the transcribing of ECR audio tapes.

63. International Business Machines Corp. (IBM) has worked on voice-activated computers for twenty years. In 1993, it began marketing its first product, the Speech Server. Kurzweil AI Systems Inc. and Dragon Systems Inc. market similar products. Proponents of this technology believe that within ten years, computers will be available that have a microphone and a mouse but no keyboard. More Computers Are Taking Dictation, WALL ST. J., Dec. 21, 1992, at B1.
As the computer is integrated with the video camera and recorder, video systems will become more easily operated. As the courtroom and the law office become computer-linked, the use of the CIC and CAT will become more common. Attorneys will have less need for hard copies of transcripts as the use of floppy disks increases. Floppy disks will enable attorneys to conduct complex search and retrieval operations that are too costly and time-consuming when done with paper.

C. The Changing Role of the Appellate Judge

The use of a video record on appeal also calls into question an appellate court’s standards of review. An appellate court does not conduct de novo review of a witnesses’ credibility, demeanor of witnesses, nor determine the weight given to their testimony. Appellate courts will uphold a lower court’s factual findings if there is substantial evidence on the record to sustain them.

Appellate adjudication has developed the law “by distancing itself from most of what went on at trial, abstracting those aspects the reviewing court finds relevant to its more general concerns.” The use of a video record would allow the attorneys and judges to immerse themselves in the “atmosphere of the case,” presenting them with the opportunity to “rerun” the trial. The detached process of appellate adjudication could be changed by having appellate courts view the trial proceedings. This is a provocative issue that suggests appellate courts will abandon their traditional deference to trial courts thereby allowing unsuccessful litigants to have their day in court again.

66. The Minnesota Court of Appeals has issued a detailed list of case types and case citations that describe the current standard of review for a particular issue. Minnesota Court of Appeals, Standards of Review (May 6, 1992) (on file with the Clerk of the Appellate Courts, 245 Minnesota Judicial Center, 25 Constitution Avenue, Saint Paul, MN 55155).
67. Id. at 23.
68. Id. at 23, 64.
One commentator argues that "[a]n appellate court cannot reproduce the decision making process if the initial decision was at all dependent upon the decision maker's sensory experience of the hearing or trial." If sensory experience were required, the trial court would be in a "better position" to make the decision.

If an appellate court possesses a videotape of a trial proceeding, is the trial court still better positioned to assess the facts? The recording of any event (a trial, a musical concert, a wedding) is not the event itself. A recording can only capture what is placed before the camera and microphone. The subjective experience of presiding at a first-degree murder trial, for example, will always be more complex and full of nuances than a recording of the trial itself.

However, a videotape of a key witness's demeanor and credibility will be more "real" than a printed transcription of the testimony. Body language, facial tics, and slow or halting responses to questions may reveal more than the simple yes or no answers.

Concerns about appellate judges retrying cases led Kentucky to evaluate a block of cases in its court of appeals. The final report concluded that the Kentucky Court of Appeals did not demonstrate a greater inclination to overrule trial court findings when videotape was used. In addition, the study found that the court was sensitive to credibility and demeanor evidence when it reviewed a video record. In interviews, judges expressed concern that the videotape might affect their interpretation of the facts. It was unclear, however, whether this concern was an overt court policy or an individual response. Though the study was suggestive, its author noted that methodological flaws made it less than authoritative.

The Minnesota pilot program found, however, that concerns about changing the role of appellate judges are overstated. In

70. See id. at 250.
72. Id. at 52-54. The study was weakened by its small sample, by its failure to analyze the opinions in the decisions sampled, and by its failure to develop comparable samples by case type for videotape and printed transcript appeals. Id.
a high-volume court of appeals, judges do not have the time to review the full record, whether it is printed or videotaped. Appellate law clerks are charged with reviewing the record as part of the case research that culminates in the writing of the bench memorandum. In their memoranda, clerks cite portions of the transcript and often attach copies of relevant pages. As the Evaluation Committee report noted, law clerks became transcribers when reviewing the tape. 73 Judges rarely examined the tape, relying instead on the transcriptions contained in the memorandum.

The debate over videotape and standards of review, while provocative, appears to have been blunted by the popularity of the Michigan model. As long as appellate courts receive printed transcripts, generated from stenographic, ECR, or videotape methods, the trial court will remain the trier of fact.

D. Media Access: Cameras in the Courtroom

Finally, the use of a video record places the issue of "cameras in the courtrooms" back on the table. Minnesota's current policy of banning cameras from the trial courts where the judge or any party objects, has effectively prevented television from broadcasting trial proceedings. 74 In Kentucky, the cameras feeding the video recorders also feed a television output circuit. This video feed is available to cable television stations and news organizations. If, as the participants claimed, the video cameras in the three pilot courtrooms were invisible, expanded use of video courtrooms might provide new evidence for proponents of greater media access.

V. Conclusion

The videotape pilot project revealed that new technology is not necessarily better. Though the video camera and recorder were capable of capturing what goes on in a trial courtroom, audio quality and transcription capabilities were not equal to

73. Evaluation Committee Report, supra note 3, at 15.
74. In an Order dated May 22, 1992, the Minnesota Supreme Court reinstated an experimental program for audio and video coverage of trial court proceedings that was originally established in 1983. The program will be in effect until January 1, 1994. Under the rules the judge or any party can "veto" cameras in the courtroom. This has made electronic coverage virtually non-existent. In re Modification of Canon 5A(7) of the Minnesota Code of Judicial Conduct, MINNESOTA CODE OF JUDICIAL CONDUCT Canon 3 (May 22, 1989).
the electronic court reporting technology that has been around for two decades. The question of why ECR has been ignored remains unanswered. Perhaps ECR does not look very "hi-tech" or maybe some states assume that more information—sound and video—is better information. Whatever the reason, ECR appears to offer the benefits of video recording at a much lower cost.

Despite shortcomings at the appellate level, video recording of trial proceedings is a reliable means of making the record. If, as the Evaluation Committee noted, videotape is used for court calendars where the likelihood of appeal is minimal, this technology can become an important component in a mix of court reporting methods. As transcription problems are addressed, video courtrooms can accommodate more complex and contentious proceedings. Minnesota should encourage those district courts that have the desire and the resources to establish video courtrooms.

Courts should continue to evaluate technology and to maintain an open mind. However, courts should involve the bar in investigating technological innovation and strive to assess the impact of change on the day-to-day practice of the law. The interaction between bench and bar is increasingly important as the demands on the judicial system grow.

Legal culture—the written and unwritten rules of the road—becomes ingrained in all who work in the law. It is seductive to think that technology can rescue systemic shortcomings. The reality is that we need to review the legal culture to see if changes in policies, procedures, and standards can improve the system as well.