Revolution in Courtroom Technology Presents Opportunity and Risk

Fredric I. Lederer
William & Mary Law School, filede@wm.edu

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The anguished client seeking a lawyer's help wants a modern paladin, a knightly champion. Like the public image of the knight of old, the modern litigator is sworn to zealously champion the client's cause to victory, subject to the constraints of facts, law, and ethics.

Like the knight of the Middle Ages, the litigator must be expert with "weapons" including legal technology. Lest we forget, knighthood as a military institution was wiped out by new and more dangerous weapons. Although our modern legal knights do not face institutional obsolescence, new courtroom technology threatens them with individual obsolescence and defeat as it provides opportunities for victory. Proper appraisal of these risks and opportunities is an important exercise.

An example of just how rapidly the technology of law is changing is on permanent display at the McGlothlin Courtroom, Marshall-Wythe School of Law, College of William and Mary, in Williamsburg, Virginia. Courtroom 21, a joint project of William and Mary and the neighboring National Center for State Courts (NCSC), demonstrates commercially available courtroom technology that can be used by judges, lawyers, court administrators, and others who are preparing for the future of trial law.

Courtroom 21 complements NCSC's Court Technology Laboratory. As of early fall 1994, Courtroom 21's capabilities included—

- Remote two-way television arrangement and witness examination;
- Dial-up access to LEXIS and WESTLAW legal databases, access to CD-ROM at the bench and counsel tables, and JuriSoft and FolioViews software support;
- Real-time Stenograph court reporter transcription, which allows judges and counsel to mark confidential transcripts and replaces the spoken word for hearing-impaired participants;
- Recorded or real-time televised evidence display with the Doar Presenter and Disk Partner system and the Litigation Sciences bar-code-indexed light-pen-controlled CD-ROM system;
- Built-in video deposition playback facilities;
- Multicamera, multiframe, video recording of trial proceedings using automatic Court Technologies micro-chip-controlled, ceiling-mounted cameras and Shure Microphone voice-initiated switching that allows optional synchronization for the real-time transcript;
- Computer monitors for jury members and wall monitors to display live testimony or images from floppy disks, CD-ROM, or videotapes, including computer animations and graphics;
- Translation of 143 languages using AT&T's LanguageLine;
- ConferenceMate assisted-listening private headphones; and
- Executone automated court sched-
uling and law firm voice-mail for the school’s 13 simulated law firms.

Additional courtroom enhancements are planned, including multipoint two-way video for judges, lawyers, and witnesses, later in the academic year. The Courtroom 21 project has already begun a planned expansion into chambers and law practice technology. 3

As courts are impelled to effect cost-and time-saving measures, and as litigators increasingly confront judges with ad hoc technology that must be understood and controlled case by case, more and more courts will install technology of potential use to litigators. Some of this will be court-oriented technology dealing with administrative matters or the court record. In other cases, courts will install presentation-related technology. Built-in television and computer monitors, for example, are apt to be preferable to the customary rolled-in equipment cart.

Because much of litigation is basically information management, an attempt to sharply distinguish among categories such as litigation support and in-court litigation is dangerously misleading. In-court actions are inextricably linked to all that goes before. 4 Notwithstanding this, three topics merit attention: developments in court records, potential use of computer graphics and animations, and tele/video communications.

Court Records

Other than in Kentucky, where video records are common, the usual trial record in a court of general jurisdiction is the court reporter’s verbatim transcript. Real-time transcripts differ from this traditional transcript only in that the reporter’s stenography symbols are electronically converted so that the resulting transcript is displayed almost immediately to counsel and judge.

So long as the spoken words are in the reporter’s personalized disk dictionary, the computerized stenotype machine immediately produces English. When terms are not in this dictionary, as can occur with scientific or technical expressions not supplied previously by counsel to the reporter, only symbols result. Given a brief recess, the reporter can complete the transcript by translating the steno symbols to English.

In a normal case—without extensive new jargon—a rough transcript that is about 99 percent accurate can be avail-
able at the end of each court session on a computer disk. This provides counsel with an electronically searchable document that can be used to prepare for later witness examinations.

When real-time-compatible reporting is used for pre-trial depositions, the lawyer’s litigation support system is enriched by an immediately searchable transcript.

**Lawyer’s Personal Copy**

When real-time court reporting is accompanied by available in-court computers, counsel can receive a personal copy of the transcript as it is output. If the program permits—as does Stenograph’s Caseview—counsel may mark confidential notations in the transcript. Thus, while a witness’s testimony or judge’s remarks are still fresh in mind, counsel can note points that merit special attention.

The court record need not be confined to a written transcript. When proceedings are videotaped using a multicamera system that can produce a picture-in-picture image, a comprehensive audiovisual record is created. This record can demonstrate to an appellate court, for example, the voice and body language of a biased judge or the contemptuous gestures of counsel.

Given a sufficiently comprehensive audiovisual record, we could theoretically discard the rule that an appellate court must defer to the trial judge’s determinations of fact because of the trial judge’s ability to observe witness demeanor. De novo credibility reviews should be legally possible. This may be pragmatically unlikely if only because appellate courts are overloaded. But in one Kentucky study, the National Center for State Courts found that appeals based on video records were more likely to yield affirmances than those that are based on written transcripts.

**Searchable Videos**

The problem with a video record has always been the difficulty in searching it. Someone—counsel or judge—must go through the record to locate parts that are relevant, for example, to impeachment at trial or to appeal. If, however, the videotaped record is synchronized with an electronic (usually real-time) transcript, the electronic transcript can be used to access and search the video record. With some systems, both the text transcript and the audiovisual image can be displayed simultaneously. When used at trial for impeachment, this combination can be devastating.

Evidence and argument are at the heart of case presentation. To be effective, they must be persuasive.

**Computer Graphics and Animations**

Successful litigators have long used pictures, charts, graphs, and models to enrich their presentations. Modern video and computer technology can be used as a substitute medium for these traditional techniques, often more efficiently and more effectively. A stationary TV camera, for example, permits the advocate to easily display photos, graphics, real evidence, and documents without the necessity of prior preparation.

Modern technology can do far more. Presentation systems based on bar codes and light pens, for example, permit a witness or litigator to single out specific parts of an image for blowup or comparison. Notably, these invaluable technological applications mirror traditional presentation procedures and normally present no legal difficulties in courtroom use. It is only when the information to be presented is uniquely computer-based that the courts seem to be troubled.

One transition between traditional presentation methods and unique computer- and video-originated data analysis and display is the Animated Dissection of Anatomy for Medicine (ADAM). It is composed of over 10,000 medical images seamlessly linked by computer. A witness or litigator can show and expand any part of the body. The image can be augmented, if desired, by emplaced medical devices. An expert using this kind of display can review a complete surgical procedure without resort to specially prepared graphics or videotapes.

It is often more difficult to gain admission for a computerized data model that displays results via animation. Rather than just showing a party’s version of events, this kind of animation takes the alleged facts of a case, evaluates them using scientific and engineering formulas, and then outputs them not only as numerical results but also in a visually compelling animation.

Whether technology-based information presentation may be used at trial depends first on the proposed use of the information. When used in opening statement or closing argument, these presentations are not “evidence” and so are restricted only by the usual limits. Likely objections might be that a presentation is based on information not in evidence or constitutes unreasonable inferences from such evidence.

Perhaps only one concern is unique to computer applications—that of unfair prejudice. It’s conceivable that as technology improves, a Jurassic Park quality animation could be prepared that would be so lifelike that the viewer might subconsciously accept the presentation as actual recorded reality rather than as counsel’s version of events. That a presentation is extraordinarily convincing or persuasive ought not to be objectionable, but if a presentation cannot be understood for what it is, it ought not to be permitted.

Courts have long routinely permitted “demonstrative evidence,” but such a classification is of little help. The basic evidentiary requirement for the admission of any evidence is relevance. So long as evidence is relevant, it is not unfairly prejudicial, and does not violate any other exclusionary evidence rule, the evidence is admissible for the purpose for which it is offered. Whether computer-based graphics and animations are admissible over objection is problematic.

When a presentation is used only as a summary of witness testimony—whether of fact or of scientific, engineering, or medical principles—and the display fairly reflects the factual content of the testimony without the addition of significant other data, there ought not to be difficulty. An animation can thus be used in conjunction with an expert to illustrate the expert’s testimony.

**Scientific Evidence**

When, however, an animation is used itself as admissible evidence—as in an alleged reconstruction based on a scientific computer model that displays the results of certain facts—the rules are far more demanding. Writing on admission of vehicle accident reconstruction simulations, Professors Paul Giannelli and Edward Imwinkelried say that they are admissible with a proper foundation consisting of proof of both the validity of the technology and the reliability of the assumptions about the ac-
cident in question...[and]...[when]...the proponent offers testimony based on a mathematical model, the proponent must identify the formulae programmed into the model and demonstrate that the formulae satisfy [the relevant standard].

It is likely that in this situation the proponent would have to demonstrate that the computer model itself comports with the standards for admission of evidence. Courts are often concerned about the degree to which an animation may be perceived as a "re-creation" rather than merely illustration, and that concern can prove determinative.

When opposing computer-enhanced graphics, counsel should be alert to the fact that editing a visual image destroys the initial image. Any enhanced image should always be compared with the original, and counsel should consider making a best evidence objection.

Will future cases contain only computer- or television-based presentations? This is highly unlikely if only because variety counts, especially in a lengthy presentation. Further, traditional approaches still work well. A huge photo blowup or a physical model may be exactly the right way to get a difficult point across.

Counsel interested in using computer-based graphics and animations can easily obtain software that will produce colorful graphics either on screen or on hard copy. The cautious litigator should note, though, that without extraordinary talent these programs will not equal the quality that can be obtained from a high-end demonstrative evidence firm.

Tele/Video Communications

Legal practice already depends on rapid information flow. Now comes court-oriented information processing. Both automated telephone/computer-based docketing and information retrieval are either here or under consideration. Issuing appellate opinions by computer is not far behind. We have yet, however, to really consider the impact modern communications will have on the courtroom itself.

Online access to LEXIS or WESTLAW in the courtroom is no longer revolutionary. Furthermore, when courts use real-time transcription for their court records, the same basic communications technology that permits dial-up access to legal databases can be adapted to send the transcript immediately to a law office for immediate staff review and assistance.

Advances in videoconferencing are said...
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to be improving corporate productivity and interpersonal relations. Two trial court uses of this technology come to mind immediately: televised appearances for routine matters and remote witness testimony. Remote appearances by counsel and judges for appellate argument are also likely; courts in the United States and Canada are already experimenting in this area. Video appearances hold the promise of freeing counsel from time-consuming trips to the courthouse for brief or pro forma hearings. 13

The second use—remote witness testimony—holds enormous promise. Much time and money can be saved when experts testify without having to fly to the trial court. We already have the technology to use television this way, and expensive satellite transmissions have been used for this purpose. Within the next three years, as telephone-line-based video transmission capabilities improve, the cost should drop.

Courtroom Stations

The level of technology necessary for remote witness testimony before a fact finder is likely to be far more demanding than that tolerated for remote lawyer appearances. For that reason, we anticipate that witness testimony will be transmitted between courthouses.

For truth-telling and credibility purposes, a courtroom video witness room would mirror a standard courtroom, complete with uniformed court officer and flag. Ideally, both the witness room and the courtroom would be equipped with multiframe video so that the judge and jury could see the entire transmission room as well as the witness. They could thus be reasonably confident that the remote witness was not being prompted or otherwise interfered with.

The witness would then also be able to see the judge and the jury.

Technical practicality does not mean, of course, that a given technology is desirable. Before using remote witness testimony, the attorney will want to know whether the judge or jurors are likely to find remote testimony credible. If so, is it more or less credible than in-court testimony? 14

Technology is changing litigation. And technological development can be expected to accelerate in the near future. The wise litigator ought to make it a point to learn what the new technologies can do to assist case preparation and presentation.

Let there be no mistake. Like the knights of yore, litigators will either master the new tools or perish by them.

Notes

1. For a longer analysis of this topic, see Fredric J. Lederer, Technology Comes To The Courtroom, and... EMORY L.J. (forthcoming 1994).
3. Law students in William and Mary's Legal Skills Program spend their first two years in simulateclaw firms where they learn professional ethics, legal research and writing, interviewing, negotiation, drafting, alternative dispute resolution, and basic trial and appellate practice. Much of this work involves simulated client representation, including discovery, motion practice, trial, and appeal. About 45 trials and 45 appeals are held each year. Phase II of the Courtroom 21 project will link the simulated law firms to the "courtroom," judge's chambers, and courtroom.
4. See, e.g., Mike McGuire, Legal Firm KOs Rivals with Multimedia Presentations, PC WEEK, June 27, 1994, at 49 (discussing Howrey & Simon's high-technology litigation support and presentation ability).
7. The Stenograph Discovery Video ZX system, for example, uses a specialized VCR that is computer controlled. When counsel specifies a relevant text, the computer prompts for the necessary videotape, then cues the tape to the right point.
8. See generally GREGORY P. JOSEPH, MODERN VISUAL EVIDENCE (1984); MARK A. DOMBROFF, DOMBROFF ON DEMONSTRATIVE EVIDENCE (1983).
9. E.g., "Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice..." FED. R. EVID. 403.
11. E.g., FED. R. EVID. 702. Depending on the jurisdiction, this will require compliance with either Frye v. United States, 293 F. 1013 (D.C. Cir. 1923) or Daubert v. Merrell Dow Pharmaceuticals, 113 S. Ct. 2786 (1993).
12. Of course, technical simplicity doesn't mean that the court will permit a use. Even if transcription isn't real-time, disk-based or machine-readable transcripts can be sent electronically and can be readily used for litigation support. See Norwood S. Wilner, The Case for Transcription, NAT'L L.J., Jan. 31, 1994, at S18.
13. Interestingly, one judge who visited Courtroom 21 believes that these appearances are undesirable because counsel, no longer hindered by time-consuming and aggravating court appearances, would be less likely to settle.
14. If funding can be obtained, the National Center for State Courts and the College of William and Mary plan to conduct experiments to determine the relative credibility of remote testimony.