TECHNOLOGY FOR THE TRIAL LAWYER[1]

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The electronic courtroom is coming; indeed, in many locales it is already here.[2] The advent of new courtroom technologies provides great opportunities for trial lawyers who are willing to learn the technologies and to take advantage of them. At the same time, it present great challenges and risks to attorneys who jump blindly onto the technology band wagon. The same technology that can save your and your clients' time and money and dramatically enhance the presentation of your case can, if not carefully planned and implemented, quickly consume vast amounts of that time and money without meaningfully adding to the case. As such, technology becomes a cost multiplier -- for good and for bad. In this paper I will discuss reasons why technology considerations are important in an active trial practice today.

SETTING THE STAGE

Trial lawyers are in the communication business. Successful ones do it persuasively. Where in the past a trial lawyer would come to court prepared with an overhead projector, flip charts, chalk boards, or posters, in today's trial environment the trial lawyer must be able to blend the old with the new while

competing in kind with the opposition. Since the electronic courtroom is here to stay, it is important for trial practitioners to be prepared.

There are a number of thoughts that are important in the preparation of any matter for trial.

1. Jurors are visual learners;

2. Lawyers must develop a persuasive theme that is consistent with the jury's decision-making patterns;

3. Complex concepts must be translated simply and memorably;

4. If the message is not carried into the jury room, it fails;

5. Expeditious communication is a goal, but expediency should not replace persuasion, it should enhance it;

6. The lawyer's talent, style, and skill must be blended with technology;

7. The jury's job is to resolve conflict; the lawyer's presentation should make the jury's task easier;

8. Impact persuasion is lasting;

9. Visuals should be on target, clear, appealing, and easily understood; and

10. Technology should be applied appropriately, professionally, and it should not be flashy or slick.

The ultimate goal of the trial lawyer is one of flexibility in the presentation of the case. The "high-tech" case can include electronic document presentation,

digitized editing and presentation of depositions, and computer graphics and animation.[3] Putting the trial lawyer in position to evaluate which of these tools is appropriate in a given case is not a complicated process, simply one that requires some advance planning.

The electronic courtroom is the result of the convergence of several trends. First and most obviously, technology has grown by leaps and bounds. More importantly, technology is now accessible to everyone. Sophisticated graphics and presentations are no longer the exclusive province of expensive vendors. Capabilities that just a few years ago required a small network of computers with operators in the back of the courtroom are easily obtainable by a single person using a laptop computer. As the technology has improved, costs have been reduced and more cases have become candidates for high-tech treatment.

In addition, the public, therefore, the jury, has come to expect a certain level of technological sophistication. Concerns about appearing too "slick" or having too much money are must less justified today than they were just a few years ago. Jurors for whom e-mail, the internet, and multimedia are every day experiences are willing to accept, even expect, litigants to use courtroom technology when it adds to the presentation.

Finally, attorneys themselves are finally able to meaningfully participate in the process. Most lawyers' first experience with courtroom technology was negative. Non-lawyer technology-types would pitch their product, get the assignment, and

then disappear. Often the output that was returned was not what was expected. Many lawyers know the experience of spending more time instructing vendors on how to do the job than it would take to do the job themselves. For the first time, technology, and accessibility, permit lawyers to take charge of the process. Projects that once had to be outsourced to vendors can now be completed by paralegal or by the attorney himself or herself.

These three factors -- the technology itself, the public's acceptance, and the ability to take personal charge of the process -- make it appropriate to reevaluate the electronic courtroom and trial preparation.

THE FUNDAMENTAL RULES

The basic principles that should govern the development of the defense case with an eye toward electronic presentation are very simple, but are often overlooked

Rule Number 1:	Start early
Rule Number 2:	Think upgradable
Rule Number 3:	Know the limitations of the technology
Rule Number 4:	Tailor the technology to your case and your style

The best way to illustrate these fundamental principles of effectively preparing, organizing and presenting a case in the high-tech courtroom is to begin

at the beginning and examine the development of the case. The end result should be that the trial lawyer will have the flexibility to create the most appropriate presentation for the case without having to make heroic last minute preparations.

DISCOVERY AND PRE-TRIAL PHASE

The most effective courtroom presentations are the result of early and thoughtful planning at the outset of the case. Not only does beginning early save many nights at trial time (or allow them to be spent on more substantive matters), it saves money, allows for more client involvement, and results in a superior presentation. This phase of the development of the case is all about the first two rules -- starting early and thinking upgradable.

Thinking upgradable simply means that at every phase of developing the case consideration should be given to those steps that can be taken, with minimal expense, that will facilitate a later decision to enhance the presentation. Stated another way, thinking upgradable means not foreclosing one's options. At its most basic, such simple steps would include things like ordering ASCII copies of depositions as they are taken, and insuring that videotaped depositions are time stamped, or synchronized to the written transcript. These are measures that add little or nothing to the cost of developing the case, but ignoring them might result in a great deal of expense later if the decision is made to utilize technologies that

require such measures. With that in mind, it is appropriate to take a look at a few of the specific issues that trial lawyers will face in the early planning for preparing a high-tech case.

DOCUMENT PREPARATION

One of the easiest, and cheapest, technologies available to practitioners in preparing the defense case is electronic document handling. Unfortunately, up until recently the electronic storage and presentation of documents has been an expensive and uncertain process. In addition, imaging documents is usually associated with the creation of sophisticated data bases, an association that has led many lawyers, and almost all clients, to believe that any type of electronic document handling is prohibitively complicated and costly.

In larger cases, where document imaging and data bases can be expected to take place, regardless of whether a high-tech presentation is contemplated, the issues are fairly simple. One merely needs to verify that the format in which the documents are captured and stored is consistent with whatever trial presentation software is contemplated.

It is the smaller cases, which cannot justify sophisticated electronic document handling because a data base is necessary, that deserve special attention. High-tech presentation of documents can be appropriate in cases with very few

documents. Ironically, it is often the smaller cases that create the last minute headaches in the preparation of a high-tech presentation. Imaging and indexing documents at the last minute can be an expensive process. Planning early on can avoid this problem entirely.

At the outset of the case, the trial lawyer needs to be involved in making some strategic decisions about how the documents should be treated. Unfortunately, this is not a task that most lawyers enjoy. Often it is well into the case before any thought is given at a high level about how the documents should be managed. There are usually more pressing issues that are putting demands on the lawyer's time, and dealing with the minutia of document handling seems relatively unimportant.

The only real solution is to have a system in place to automate, as much as possible, the evaluation and decision making process for document treatment. The earlier questions are considered and answered, the easier the entire process will be. A check list of questions and considerations should be a standard part of the trial lawyer's initial case assessment.

In assessing the creation of document data bases, there are some questions that, as a minimum, need to be addressed early on:

1. Roughly how many documents are expected to be produced by the client, or received from the other parties?

2. How document intensive will the presentation of the case be?

3. Are the issues in the case already well defined, or is it anticipated that theories and issues will change significantly during the case?

4. What is the condition of the documents?

There are obviously many, many such questions that impact on how documents should be treated. Asking these questions at the outset makes it much easier to make a determination as to whether a data base is appropriate, or the tried and true methods of legal pads, post-it notes, and binders are sufficient.

Beginning to consider whether the case is appropriate for electronic presentation at this early stage also offers the opportunity to begin to educate the client and prepare them for any additional expenses that might ensue. The results of this "checklist" analysis of the discovery can be distilled and forwarded to the client, along with recommendations about how to proceed.

A good example of "thinking upgradable" at this stage would be the early imaging of documents. Regardless of whether a particular case is appropriate for a full scale document image data base, documents can be scanned as part of the normal xerox and process. Many vendors and copy services use digital copying technology on standard copy jobs. Obtaining a CD-ROM with the document images is a simple matter. Many vendors will, in connection with standard copy jobs, provide a CD-ROM with imaged copies of the documents for at or below the cost of an additional paper copy.

This is one of the best examples of the benefits of early decision making and thinking upgradable. Obtaining a CD-ROM of document images at 8-12¢ a page as documents are copied for production is far preferable to going back on the eve of trial and paying 50¢ or $1.00 per page for imaging alone. This vendor arrangement requires only a little advance planning. Document images can be saved on CD-ROMs with the file name corresponding to the Bates Numbers of the particular pages. It should be noted that this simplest level of imaging does not provide any search or data base capacity. It does, however, mean that documents (or, more accurately, particular pages) can be imported in trial management software and displayed without having to undertake an entirely new project at a later date. There are some automated systems that will perform basic automated indexing and optical character recognition at an increased cost, and those might be appropriate in a document intensive matter.

One additional advantage of the early analysis of documents, and the adoption of procedures to ready the case for electronic presentation at minimal marginal cost, is that it permits client involvement and approval at an early stage. Clients, most of whom have been burned at one time or another by expensive (and sometimes useless) data bases or trial presentations, are very sensitive to the costs of such projects. An imaging project that can be "sold" to the client as "less than the cost of one additional set of the paper documents" sells itself. The CD-ROMs can be copied and distributed to clients, adjusters, investigators, experts, and others for

virtually nothing. On the other hand, a last minute expensive rush project to image documents on the eve of trial is difficult to explain, particularly at a time when the trial lawyer's energies are better spent preparing for court.

Completing a document management and discovery planning form is one of the most effective means of insuring that clients are onboard with the trial lawyer's case development strategy. The early involvement of clients in this manner not only minimizes the distractions that necessarily result from last minute consultations prior to trial, it can be of great benefit in resolving disputes related to billing.

DEPOSITIONS

Taking the steps that are necessary to insure that depositions are handled in a manner that permits easy importation into trial management software is relatively easy. Most court reporting forms now provide ASCII diskettes along with hard copies of the transcript at no additional charge. Obtaining ASCII diskettes greatly facilitates the process of synchronizing the digitized videotaped deposition excerpts to the transcript. In addition, even without dedicated software such as Summation™ or Discovery ZX™, deposition transcripts can be searched using virtually any word processing software.

Court reporters should be asked whether they offer the capability of time stamping or synchronizing videotaped testimony to the deposition transcript. By far

the most expensive step in preparing digitized videotape deposition testimony for trial presentation is converting the videotape to a digital format and synchronizing the video to the written word.

Of course, if a particular software platform is contemplated for use during the trial preparation, the software documentation vendor should be consulted to guarantee that the court reporting firm is using a compatible format.

TRIAL PRESENTATION FUNDAMENTALS

1. Hardware.

At the heart of any courtroom presentation is the display system. The traditional high-tech courtroom, if there is such a thing, uses televisions and computer monitors to display graphics, depositions, and documents. There are usually monitors for the Judge and each counsel table, with one or more larger monitors for the jury. The downside of this set up is that it is complicated, requiring many components and complicated cabling around the courtroom. Additionally, in many courtrooms, the televisions that were installed that support the display of videotaped depositions do not have sufficient resolution to adequately handle computerized document presentation or graphics.

Computer projection technology has now evolved to the point that it is possible to centralize the presentation and simply run the entire system from a

computer using a standard computer projector. There are several advantages of this approach. A projector system does not clutter the courtroom and require laborious set up and take down each day. Furthermore, a courtroom projector, if set up correctly, can offer a much larger screen size, which makes it more appropriate than a TV monitor for the presentation of documents.

It is critically important that the projector be sufficiently bright and sharp given the ambient lighting in the courtroom. A projector that seems adequate in trial runs at the office may be completely useless in a courtroom with brighter lights, or where the projector is moved further from the screen. If at all possible, the trial lawyer should personally inspect the set up of the courtroom presentation system to insure that the images will be legible and persuasive when viewed from the jury box or the bench. A few minutes invested at this stage is invaluable, because there is nothing worse than finding out in the middle of examining a witness that the high-tech presentation is too dim for the jury to make out.

An additional consideration is that certain colors tend to display differently on computer projectors than they do on computer screens. Graphics and other demonstrative aids that appear dramatic on a lap top, or when printed out, may wash out when projected. All of these problems can be solved with minimal effort, but only if a bit of time is taken prior to beginning trial to look at a dry run.

Without going into a great deal of detail, consideration also needs to be given to what "sources" are going to be plugged into the projection system to display to

the jury, and how those connections should be made. This process is usually the responsibility of the trial support vendor, but as the cost of technology drops, it is not unreasonable for law firms to think about investing in much of the hardware, and taking some of those functions in-house. Essentially, the set up involves using a switch that routes appropriate video signal to the projector. The switch enables the parties to switch between the available sources -- which may include lap tops, VCRs, and document display devices such as an ELMO™ -- without having to constantly plug and unplug cables.

The reason for going into this mundane detail is that at some point it will be the responsibility of the lawyer to make sure that the system being contemplated is acceptable to the trial judge, and is consistent with whatever system may be used by the other side. Not only is it a logistical disaster for both sides to show up on Monday morning with their own, redundant, sets of audio visual equipment, it is possible to save a great deal of money by sharing equipment rental expenses. Some courts even have their own technological infrastructure, complete with monitors, an ELMO™ and VCRs. Care should be taken to make sure that whatever system is contemplated is compatible with the Court's set up. TV monitors, for example, cannot typically display documents in a satisfactory manner so a TV-equipped courtroom may not support a full scale electronic case.

2. Software.

There are so many software options for preparing and presenting a high-tech case that it is not possible to go into any particular platforms, except by way of example. In large part, the software choice will be dictated by what type of presentation is desired and by which vendor, if any, is selected. Some of the software is available off of the shelf, and some is proprietary and limited to particular vendors. Early on some thought should be given to the type of presentation that might be desired. The software platform chosen should support any contemplated presentation style.

The most basic presentations are simple pre-programmed or what might be called "static" presentations. These are presentations that are largely canned, and probably most appropriate for an opening statement or a closing argument. Everyone is familiar with Microsoft Power Point™ or Corel Presentations™, which are two of the most common applications that are used for this type of presentation. These presentations are essentially slide shows. Although both software packages permit some level of random access to the individual slides, in large part the presentation has to be scripted in advance, making it difficult to use this method when examining witnesses, especially hostile witnesses. Slides can be sorted and rearranged, but they cannot be created "on the fly." Thus, while slide shows can be very effective, they require the most advanced planning and preparation of any of the presentation formats. Because they typically consist of graphics and

demonstratives rather than documents and depositions, the assistance of a graphic artist might be required.

Presentation of documents typically requires a different software program. Programs such as Adobe Acrobat™ are well suited to document presentation. The documents are scanned into the computer and accessed using file names or bar codes. The documents can displayed and highlighted, zoomed, and manipulated. The manipulation of the documents can be done "on the fly" or preprogramed.

The most sophisticated and specialized software is necessary to display video depositions. This software almost always requires the support of a vendor at some level. Videotapes of the deposition testimony must be digitized, or converted into digital files and stored on a computer hard drive or CD-ROM. The digitized video file, typically MEG2 format, must be synchronized to the written transcript so that the software can identify which frames of the video correspond to which particular page and line designations.

First and foremost, digitized videotaped depositions can be edited more quickly and more effectively than videotapes. The software permits the creation of a "play list" of video excerpts that then plays seamlessly at Court. Simply by typing in page and line numbers, the corresponding excerpt is immediately played. Everyone has had cases where the playing of videotaped depositions was an awkward process because it is not always possible to obtain rulings on the entire set of designations sufficiently far in advance to completely edit the videotape.

Pausing and fast forwarding the tape, or playing a portion of the videotape without sound, are the only ways to deal with last minute objections or editing errors. This is not only distracting to the jury, it highlights the fact to the jury that they are only being shown bits and pieces of the testimony. Digitized editing can be done in a matter of minutes the night before, or even the day of, the showing of the deposition. The play list is simply a list of page and line designations. An example of software that is available for this purpose is FTI's TrialMax II™ package.

Also, most deposition software permits more flexibility in the presentation of the deposition itself. Deposition exhibits can be shown in a split screen along with the testimony so that the jury can read the document being used as an exhibit along with the witness. Some software packages permit closed captioning of the deposition, so that the written transcript scrolls beneath the videotape. This can be particularly helpful when a witness is difficult to understand.

One final benefit is more subtle. Editing a digitized video is so much more precise and efficient that it is possible to make the deposition to appear almost seamless, even if there are significant edits. The appearance of "cherry picking" from a deposition is something that should be avoided if possible. Digital edits are much "cleaner" than videotape edits. If the witness doesn't change position dramatically between edits it may not be apparent that an objection or cough or non-responsive answer has been edited out. The entire presentation has a more professional, more complete appearance. Finally, given this capability it is possible

to do more editing than would otherwise be possible without creating too much distraction. Awkward pauses, side bar commentary, and other such interruptions can be removed when it might not otherwise be possible to do so. One can even edit out the delay in translating a question if the witness is being deposed through an interpreter.

Digitizing depositions is an expensive process, relative to the other types of electronic presentations. Typically, the digitizing and synchronizing process is proprietary, and vendors charge $200 to $300 per video hour for this service. Advance work with the vendor, including a preferred provider type of relationship, can sometimes significantly reduce this cost.

3. Integration.

One additional advantage of software platforms that are dedicated to trial presentations is that they usually offer the capability to handle many different types of presentations. One approach is simply to use different software packages for graphics, documents, and depositions. The advantage of this approach is that it probably permits more independence from vendors and perhaps can reduce expenses since it permits more reliance on off the shelf software. However, switching between platforms at trial can be awkward.

Integrated packages can switch seamlessly between graphics, documents, and deposition testimony. Slides can be created in Power Point™ or

Presentations™ and then exported as an image to the trial presentation system. With the exception of some animation features that are only possible from within the original program, the presentation software can mimic the appearance of the original slide show.

4. Staffing.

Well before the trial begins, decisions need to be made about who is going to be involved in the preparation of the presentation. Obviously, the trial lawyer needs to be involved at every stage, although such involvement need not be terribly time consuming. The nature of the high-tech presentation requires that as much work as possible needs to be done in advance. The preparation needs to be coordinated, and the important decisions need to be centralized.

One consideration that needs to take place well in advance is who will actually run the presentation in the courtroom. Many of us are familiar with the massive productions that have accompanied high-tech presentations in recent years. One or more of vendor's representatives sit in the back of the courtroom surrounded by computers, cables, and monitors. The presentation is relatively scripted and the lawyers simply ask for demonstrative aids, documents, or deposition excerpts to be displayed. This can be effective, but it is expensive.

Technology has progressed to the point that it is no longer necessary to have a set up that looks like the flight deck of the space shuttle to coordinate a

presentation. Almost every aspect of a presentation can now be controlled by a single lap top computer hooked to a projector. This gives the trial lawyer the ability to control the presentation, or delegate the task to an associate or paralegal, and leave the expensive vendors at the office. A simple lawyer-controlled presentation is far more impressive and persuasive than the vendor's light show.

However, it is critical that the decision about who runs the presentation be made far enough in advance that whoever is running the presentation has time to learn the system and practice. Good trial presentation systems, and certainly the standards like Power Point™ and Presentations™, are designed to be user friendly and simple to execute. While the preparation of the presentation, the creation of the graphics, etc. might be beyond the technical capabilities of most users, the actual control of the final product probably is not. It is, however, critical to spend the time to learn the presentation side of a software thoroughly.

TRIAL PRESENTATION STRATEGY

Most of the "rules" that should govern the preparation and presentation of the high-tech case are self evident, and at first glance probably do not seem worth repeating. However, more often than one would expect, trial lawyers, having made the decision to embark upon a high-tech presentation process, tend to get carried away with the technology and lose sight of the larger goal.

1. Keep it simple.

The new presentation technologies offer so much capability that the temptation is almost overwhelming to take advantage of all of the features that are available. Just as in the traditional presentation of any case, simple is usually better. Technology makes it much easier to gild the lily, and requires a bit more self restraint than may be evident at first.

Additionally, the expense associated with preparing the high-tech case can create pressure to overuse the technology. Expensive demonstrative aids and models tend to get used even when not necessary, and the same is true for their electronic cousins. Client pressures, also, can result in pressure to put on more of a case than is otherwise advisable.

One example of this phenomenon that occurs with some frequency relates to the use of video deposition excerpts. While one very effective tactic is to use digital video excepts to impeach witnesses or support a closing argument with the actual words from the horse's mouth, the technique is often overused. Showing clips as impeachment, or using them in closing arguments, can be devastating on a critical issue, but it is also very time consuming and not every impeachment or portion of argument needs to be supported by videotape.

2. Don't let the presentation overwhelm the theme.

This suggestion is part and parcel of the "keep it simple" rule. Too much complexity in the presentation distracts from the message. There are times

that the trial lawyer wants the jury to be focused on his or her words, and there are times that the jury should be focused on the words of the witness. Rarely is it appropriate for the jury to be focused on the presentation alone. The best example of this phenomenon are the commercials shown during the Super Bowl. Advertisers pay for the most entertaining and impressive commercials money can buy. Yet, at the end of the day, most of us remember the creative and humorous ads, but cannot remember what products were being sold.

3. Adapt the presentation to your style.

This fundamental principle speaks for itself. Technology should be used to enhance, not replace, the tactics and techniques that work for particular lawyers. The best way to incorporate technology into courtroom presentation is to do so gradually. At its most basic level, the high-tech presentation is simply another way of showing the jury what they would see if they looked at a hard copy of the document, or a poster board demonstrative. More complex techniques, including the interactive split screening of documents, and orchestrated presentations, should probably wait until there is a basic comfort level in using the presentation system.

Not every portion of the case is equally amenable to electronic presentation. Certain exhibits are much more effective in hard copy, or blown up to poster board. There is nothing more impressive or memorable to a jury than an exhibit that is created by the lawyer and/or a witness in front of their eyes. A time line that is central to the case might be better on a large poster board that sits in front of the

jury day after day, than in an electronic format that is briefly flashed before them intermittently through the case.

4. Cost minimization.

The high-tech courtroom presentation need not be the tremendously expensive and complicated undertaken that it might appear to be. Keeping the fundamental rule of starting early and with an eye toward upgrading will go a long way towards keeping costs in line and clients happy. There are, however, some specific things that a trial lawyer can do to make low cost, high-tech, presentations an option for most every case.

First and foremost, the trial lawyer must stay involved at every step of the process. Technology and the background work necessary to support it are extensive propositions. Associates, legal assistants, and vendors all have roles to play in preparing for the high-tech presentation, but there must be a constant direction and theme to the work that is being done. Preparing the case is not, at least the first few times, a turn-key proposition. Without guidance along the way, the work product that comes back to the lawyer will not be satisfactory, and is very expensive to redo. For example, drafts of graphics and demonstratives should be checked at an early stage, before significant and expensive fine tuning is done on a dead end concept.

Second, tight control needs to be maintained over vendors and service bureaus, if they are used. Equipment rental is expensive, so is having vendor representatives on stand-by when they are not needed. Concrete estimates and pricing structure should be agreed upon in advance. Nothing is harder to explain

to a client than an excessive charge for the lengthy rental of equipment that was not necessary. It should be made clear to vendors who is permitted to authorize additional work. Too often in the heat of battle, it is tempting for a legal assistant or associate to authorize work by vendor without fully appreciating the cost-benefit analysis, or understanding the implications for the client. It is too easy to say, "Yes, let's go ahead and image the rest of those documents." Those decisions need to come from the person who will have to explain the bill.

Third, opportunities to economize must be recognized and seized. The folks that are doing much of the work to prepare the case, especially vendors, often have a great reluctance to make a decision to scale back the effort. Yet, even in the largest of cases it is not necessary to have the capability to do everything 100% electronically. Some of the things that should be considered include the following:

(1) What documents really need to be imaged and accessible? It may be that in a case where exhibit lists are exchanged in advance it is more appropriate to limit the imaging project to the pre-marked exhibits rather than to every document produced in the case. It may also be that entire categories of documents can be omitted. In a personal injury case if all of the medical testimony is going to be by deposition, there may not be any need to have medical records imaged and available for electronic display.

(2) Which depositions need to be digitized? Certain deposition videos may not benefit greatly from being digitized. Expert video depositions, for example, can usually be edited well in advance, especially if objections are being ruled upon with sufficient time to enable traditional editing. Additionally, there may not be any reason to digitize the direct examination of the other side's witnesses, since it is likely that only the cross examinations will be played during the trial.

(3) Demonstrative aides can be standardized. Vendors often like to show off a bit by creating unique and impressive demonstratives, either in hard copy or for electronic presentations. If a standard template is used for each exhibit, clients can avoid paying for a graphic artist to design background layers and formatting the exhibit's layout. The template is essentially an empty picture frame. It is a simple matter to fil in the frame in a few minutes and create a new exhibit without much additional expense.

As the trial lawyer and the other members of the trial team become more familiar and comfortable with trial presentation options the cost can be reduced substantially. Vendor involvement can be reduced or, eventually, eliminated.

CONCLUSION

The high-tech courtroom is a reality. Computerized presentations which were once the exclusive province of wealthy parties with unlimited amounts to spend on litigation costs are now available and cost effective for almost any size case.

Incorporating this technology into the preparation and presentation of the case is not so difficult as it might appear. Planning ahead in a manner that keeps all options open will go along way toward minimizing costs and insuring that the ultimate product results in a significantly improved presentation.

[1] The predominant portion of this paper consists of shameless plagiarism from papers presented at the Spring 2000 of the Association of Defense Trial Attorneys in Tucson, Arizona. The first paper is *Preparing the Defense Case for the Electronic Courtroom*, by Joseph G. Thompson, III, of Fulbright & Jaworski LLP , in Houston; the second paper is *Hang 'Em High: Demonstration of Case in the Electronic Courtroom*, by W. P. Womble, also of Houston. Much of the original thought expressed herein is that of Mr. Thompson or Mr. Womble.

[2] The Administrative Office of the U.S. Courts has developed a Case Management/Electronic Case Files (CM/ECF) System that uses internet technology to give the federal judiciary a new mechanism for information handling. The system allows pleadings to be filed via a Web browser, and Judges, staff, and attorneys have immediate access to court file documents and information. The pilot project has been implemented in district courts in Missouri, New York, Ohio, and Oregon, and in bankruptcy courts in Arizona, California, Georgia, New York, and Virginia. At the same time, more and more courtrooms today are being built or remodeled to incorporate technology, including monitors for Judge and jurors, and presentation systems.

[3] Animation is perhaps the most compelling use of modern technology in the courtroom. It allows jurors to see what they normally would not see, to become virtual eyewitnesses to relevant events. Because of the powerful effect, great care must be taken to insure accuracy.