

Visual Communication: Preparing for the Courtroom of the Future

BY BRIAN J. CARNEY

CHANGING TIMES

VISUAL COMMUNICATION has always been a skill possessed by the finest trial attorneys. The great trial lawyers of the past were the best actors and orators. They recognized the unparalleled power that visual information has to influence the human thought process. Now more so than any other time in history and with the help of computers, visual communication is more accessible, more flexible and more effective.

Milestones in technological advancements are affecting the way the legal profession and specifically prosecutors' offices present cases in court. In a *Wall Street Journal* article documenting this continuing evolution, trial attorney Francis Letro summarized it best:

The days when lawyers could go to court with just a manila folder, a blackboard and chalk, or a marker and a big drawing pad are gone. . . . Now, you try not to let the other side have better courtroom graphics than you (see "For Some Lawyers' Presentations, Image Is Everything," *Wall Street Journal*, February 1, 2000).

The *Boston Sunday Globe* also reported on this transition, saying:

. . . new technologies—and a new willingness in legal circles to embrace them—have taken the use of visual images in the courtroom to a level unimaginable even a decade ago. . . . The result is a slow but significant shift in the way many trial lawyers, who have historically relied largely on their verbal skills to sway juries, try

cases More prosecutors see high-tech graphics not as a luxury, but as a necessity (see "Courtroom Graphics Come of Cyber-Age," *Boston Sunday Globe*, May 21, 2000).



Effective visual communication for trial requires graphical excellence and trial skills that capitalize on

the information contained within the visuals. Graphical excellence is the by-product of well-thought-out design. Those lawyers who master the skills required to successfully use the new media at trial will become known as some of the great trial lawyers of the future. Lawyers who continue to use the spoken word for persuasion will unfortunately be left behind.

Because the "courtroom of the future" is merely glimpsing the horizon, prosecutors' offices have an opportunity to seriously influence this imminent transformation. A small group of prosecutors' offices is already at the forefront. Their innovations in courtroom presentations are improving the criminal justice system.¹ Failure to partake in this evolution is certain to sting the unsuspecting prosecutor's office, as it has the defense bar in Boston.² Embracing and directing the development, therefore, is the prudent course.

Creating an internal culture of visual communication is a first step in preparing for the future. In May of 1999, Ralph C. Martin, II, District Attorney for the Suffolk

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District in Massachusetts,³ appointed me the director of multimedia presentations. Before that I spent eight years focusing on appellate cases, gang felony prosecutions and community prosecution efforts in Boston. My background as an entrepreneur video producer and my minor undergraduate degree in computer information systems were ideal antecedents for this new position. Over the past two years, I have produced numerous interactive multimedia courtroom presentations that have been exceptionally successful as a tool in prosecuting our cases. The trial prosecutors (and judges) consistently praise their usefulness. More importantly, a culture has been created.

Throughout this exciting time our successes and some mishaps have taught us important lessons. The following is an explanation of our experiences to assist others who might be addressing similar challenges in preparing for the courtroom of the future.

INTERACTIVE MULTIMEDIA PRESENTATIONS

An interactive multimedia courtroom presentation is an electronic display with the primary goal of persuasion. During trial it involves interaction between the prosecutor (or trial assistant) and a computer that stores the government's demonstrative evidence and visual aids. Those items exist in such diverse and multiple forms of media as—photographs, diagrams, maps, drawings, video, audio, text, 3D illustrations, documents and animations. Using today's computer technology these diverse forms of media can be accessed immediately and viewed simultaneously or consecutively.

A multimedia developer and the trial prosecutor create the presentation well in advance of trial. The evidence is digitized (via a digital camera, scanning, audio or video capture), edited, organized in a logical manner, saved on a computer's hard drive or on a compact disc, and accessed through a drop down menu or buttons on screen. Various software packages can and should be employed in the creation, including: image editing, video editing, sound engineering, multimedia authoring, virtual reality authoring, charting, diagramming, illustration, computer aided design, mapping, three-dimensional modeling, three dimensional animation, page-layout, CD-ROM creation, Web page design, Web image preparation, trial presentation and document management. The particular needs of a case will determine which software packages are needed in the creation of the presentation.

For instance, a case may require videotape to be digitized and edited in order to produce redacted clips of the video for later display in court. That task can be accomplished using one of the many video editing packages available today: iMovie, Adobe Premiere, CineStream, Final Cut Pro, Media 100. That same case may have a 911 call or an audiotaped statement as part of the evidence. The multimedia developer would use audio engineering

software such as Sound Forge or Sound Edit 16 to prepare the audio for electronic presentation. Maps, photographs, documents and other items could be scanned into the computer and prepared for display using image editing software such as Photoshop. If financial data were involved, spreadsheet and charting software (Excel, Lotus, Chartmaster) may be required to create charts or to show relationships between and among data using tables (or even relationship mapping software). Other packages such as computer aided design (CAD) or illustration software (Illustrator and Freehand) could be used to draw the interiors of buildings or exterior crime scenes.

When all of the elements of the presentation are prepared in digital form, a multimedia presentation can be created. Today, the term "multimedia" has become one of the most overused and misunderstood words in the English language. Multimedia presentation software packages range in functionality from simple presentation to unlimited authoring capabilities. The following is a partial list of "multimedia" presentation programs that vary in quality and functionality: Powerpoint, UPresent, Medi@show, Harvard Graphics Advanced Presentations, Astound, Multimedia Fusion, Auraline, Kai's Power Show, Summation, TrialDirector, Flash, Live Motion, InfoChannel Designer, Supercard Suite. The level of one's appetite for persuasive graphics will determine the extent to which the more difficult (and truly multimedia) software packages are employed. Ideally, the graphical design is case-specific using digitized copies of the actual evidence and other professionally created graphics. For maximum impact the presentation should display the interaction of multiple variables. The focus should be on producing the most effective, most persuasive presentation of the prosecutor's case.

Powerpoint (a presentation software program from Microsoft) is probably the most well known. Powerpoint, is an excellent starting point. It has limitations, however. Powerpoint's main purpose is to *display* information (i.e., to be used as an electronic slide/overhead projector). It simply exhibits photographs or graphics in a static, linear fashion and lists bulleted points to support an oral presentation. While Powerpoint presentations can be made interactive (meaning non-linear), they typically are not utilized in this way. Furthermore, while Powerpoint accepts multiple forms of media it has limited ability to handle multivariable interaction.

Similarly, trial presentation software (such as TrialDirector and Summation), the next level in the presentation software hierarchy, focuses on document management. Trial presentation software is interactive and accepts multiple forms of media. The significant contribution that distinguishes these litigation packages from Powerpoint is their ability to organize and quickly find documents or other media. However, because of their

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generic purpose (to cover a variety of possible litigation presentation needs), their primary focus is not persuasion but immediate access to and display of information. Again, multivariable interaction is not inherently involved. As a result, the potential excellence of the graphical information conveyed is not maximized.

While Powerpoint and trial presentation software should be employed as tools in the presentation arsenal⁴ of a multimedia department, they fall short in comparison to the exceptional power of a truly interactive multimedia presentation. Interactive multimedia presentations are case-specific, labor intensive and compelling. This distinction has been described as the difference between being given the ingredients to prepare a dinner and having it prepared by a gourmet chef. It's the difference between, for example, seeing individual pages of a book and being told the story. Interactive multimedia presentations properly designed and utilized tell the story.

An interactive multimedia presentation is one created using multimedia authoring software (e.g., Multimedia Fusion, InfoChannel Designer, Director, and Supercard Suite) or possibly Web animation software (e.g., Live Motion, Flash and Dreamweaver). Presentations created with these programs are as flexible and as effective as the imagination of the multimedia developer permits. There is, however, a steep learning curve that the multimedia developer must attain due to the unprecedented functionality they provide. The return from the time invested in learning to develop litigation multimedia at this level is the exceptional ease of use and quality of the final presentation; a consideration not missed by the prosecutors who use such presentations at trial.

To create an effective interactive multimedia presentation requires a serious effort. The most important aspect of the work expended is the thinking that goes into it. The primary intellectual challenge is to combine the functionality of multimedia with proper information display principles and graphic design techniques producing a persuasive presentation that is admissible in court. Albert Einstein once said: "Thinking is the most difficult work man can do." The time spent thinking about the case and obtaining all of the elements that are required for the creation of the presentation forces the trial lawyer, who directs or at least participates in the process, to be very well prepared. This preparedness transforms into a belief on the jury's part that the lawyer is credible and professional since his or her entire evidence apparently is just one click away. It also makes the prosecutor's presence as a player in the trial more prominent since the defense attorney might need the prosecutor's help to recall some evidence onto the screen.

WHY MULTIMEDIA?

Everywhere you go these days, graphics are used to explain, clarify and persuade. Listen to the United States Supreme Court audio recording of the presidential election oral arguments being televised on CNN and you will see a transcript of what is being said along with photographs of the lawyers and judges who are doing the speaking. Read a newspaper report on the crisis in the Middle East and you will be presented with a map and photographs to clarify where things are happening in this unfamiliar area. Open a magazine, turn on the television or drive down the highway past a billboard, and witness the unlimited number of advertisements that use graphics to persuade buyers to purchase goods. We live in a society that relies on visual information. Television, movies and the World Wide Web overwhelm our daily life experience. We grew up with teachers that used visual aids from kindergarten through law school. When you use computer graphics in your presentation of the evidence, you are speaking to the jury in a familiar medium: one with which the jurors are comfortable and one on which they rely for credible information.⁵ Seeing is believing.⁶

For the jury, having information presented through an effective multimedia presentation can mean the difference between whether they understand or don't understand. Interactive multimedia properly developed can determine whether they will pay attention to the information, listen to it, understand it, remember it and be convinced by it. Even dry but necessary information can be presented in an interesting fashion when presented through a multimedia display.

To understand what multimedia does for juries, one must look at how it affects their concerns. A jury's primary job is to determine the facts. To help the jurors accomplish that job, the legal process uses an unusual method of presentation (question and answer) that is also unfamiliar to the jury and at times downright boring. In a painstakingly disjointed fashion, witness after witness, the evidence is presented. As a result, the ability to comprehend the information being presented and to remember that information as it relates to all of the other information in the trial is challenging at the least. This becomes more evident the longer the trial lasts.

Familiarity, however, improves comprehension and memory retention. As already noted, jurors come to court predisposed to visual learning. In addition, jurors are accustomed to a complex world. Most dealings involve multiple factors and multiple considerations. Edward Tufte, an expert in information display, explains in his seminars and books that a fair analysis of problems generally requires an analysis of multiple variables. A multimedia presentation is one in which the exhibition involves more than one form of media and allows for multiple channels of communication to be conveyed simultaneously-

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ly or consecutively—the way juries are familiar with receiving information.

When multiple channels of communication are used, the ability to learn and to remember is enhanced because the information is being received through more than one sense. Since not all people learn using the same senses, the more the presentation attempts to teach using multiple senses, the more likely the listeners will be to comprehend the information through their most dominant or primary one. When only one medium is used, the primary sense of the listener/viewer might not actually be put to use. In contrast, when multiple channels are utilized to convey information each sense confirms the information being sensed through the others. Thus, the potential for comprehension and memory retention is improved. Ultimately, regarding juries, it is all about impact.

To understand what interactive multimedia does for trial lawyers, one must look at how it affects their concerns. The trial itself is such an unpre-

dictable exercise that the ability to quickly adapt to the constant changes is essential. One of the most important assets a trial lawyer can possess, therefore, is flexibility. When a presentation is truly interactive it is flexible and therefore helpful at trial. If the presentation is comprehensive, well organized, intuitive and functional, then its use will enable the prosecutor to have immediate access to the right information, complementing this need for flexibility. As a result, the attorney spends valuable trial time on the actual content of the case—the substantive evidence—rather than on extraneous matters. The time it took searching through documents, looking for a specific photograph or piece of evidence or waiting for all of the jurors to view a particular piece of evidence is no longer wasted. Overall trial time is saved because interactive multimedia makes the trial presentation more efficient—this pleases most judges.

In addition, multimedia presentations can be layered. As a result, the trial lawyer is in full control of the pacing of the information. Changes over space or time can be presented and comprehended in sequence. The final result of those changes can be witnessed as the illustration of that sequence unfolds.

For the trial lawyer who does not want to become an expert in conquering the latest version of the trial presentation software user interface, properly designed multimedia presentations provide a comfortable alternative with easy access to every item of digitized evidence or chalks

involved in the case. The goal for the multimedia developer is to create a user interface that promotes such ease of access and is, at the same time, intuitive—allowing the prosecutor to think about the presentation of the evidence rather than the interface. Use of multimedia can stir excitement, improve morale and increase the motivation of prosecutors who embrace it.⁷

SOLUTIONS FOR LARGER OFFICES

A multimedia presentations unit is a logical extension of a graphics department in a prosecutor's office. The graphics traditionally created by those individuals are still useful. Some types of situations lend themselves to more of a static presentation by means of a blow-up board illustration or chart. Variety is the spice of life. So having a range of visual methods to make various points to a jury increases the chances of reaching each of them and keeping them interested.

When you use computer graphics in your presentation of the evidence, you are speaking to the jury in a familiar medium: one with which the jurors are comfortable and one on which they rely for credible information.

How is the internal culture created? Obviously, the process begins with the commitment. This is as much a state of mind decision as it is a financial one. With this mindset, appropriate resources need to be obtained: powerful computers, multimedia and graphics software, computer peripherals, presentation display equipment and qualified employees with proper training.

A high-end computer workstation with plenty of memory and plenty of speed, the appropriate media editing and display software, and other display equipment (such as laser pointers) are necessary. Because multimedia presentations are labor intensive, qualified employees are probably the most precious resource. Finding the right people—people with a proficiency in the skills required—will be a challenge especially given the hiring explosion in the technology sector. However, the right person may already exist in your office. That person may already possess transferable skills from outside interests. Ideally, the perfect candidate for the position of multimedia developer is a lawyer with a background in computer programming, video production, sound engineering, graphic design and multimedia development.⁸ Once the talent has been identified internally or hired from outside, proper training must be done—taking into consideration the qualifications of the selected persons.

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Training the employees responsible for the production of case-specific multimedia presentations consists of three major steps. First, the employee who will be developing the multimedia presentations must already have or receive training in the mechanics of how to use the various software packages, the hardware, the peripherals and the presentation equipment. Second, the multimedia developer must be trained in techniques for creating presentations for particular types of cases using this computer equipment and software. That includes an understanding of the proper application of graphic design principles and information display techniques. Third, the prosecutor or an in-court assistant must be trained in how to effectively use the resulting multimedia presentation in court.

Once employees are identified and the team is formed, then the process of actually creating presentations can start. The process begins with identifying which cases will use a multimedia presentation. Cases chosen are reviewed from the evidence through the theory of the case. The analysis includes: identifying key issues, undisputed facts and difficult concepts, brainstorming about the kinds of graphics that will be required for a particular case (i.e., timelines), determining what visual and audio elements must be gathered before creating the presentation, gathering those elements, creating a draft version of the presentation, reviewing the presentation for accuracy, professionalism and admissibility, refining that presentation with the trial prosecutor's input, preparing witnesses using the presentation, and refining once again the presentation to a final version making any necessary changes that arise in witness preparation.

SOLUTIONS FOR SMALLER OFFICES

Prosecutors' offices that have fewer resources—financial, equipment and personnel—may feel they are at a disadvantage. This presumption is not necessarily true. So what is a smaller prosecutor's office to do?

The goal is to create a culture in which prosecutors use visual communication to effectively prosecute cases. For offices with fewer resources, while the method may be different, the goal remains the same. Visual communication has been part of human interaction since long before computers, multimedia software and other electronic resources existed. These tools, therefore, are not required to meet the goal.

What is necessary to meet the goal is merely the mindset. Having a desire to visually communicate with the jury will enhance even the best trial lawyer's presentation of evidence. One of the most important ways of doing this is something that most prosecutors already know—proper handling of physical evidence. Excellent visual aids, however, are equally as important.

Graphics excellence emanates from the thought that goes into the design and not the medium upon which it is portrayed. The medium is incidental—the thinking is critical. Throughout history there are numerous examples of excellent graphical presentations that are written by hand or printed on paper.⁹ This is where small offices can overcome or minimize possible shortcomings caused by any inability to employ more high-tech options.

This cultural shift to visual communication needs to be encouraged so that, when the time comes, the transition from low-tech/low cost graphics to high-tech tools will be smooth. Prosecutors who can master the effective use of quality (but low cost) visuals will have an easy time switching to more technical presentations.

Different options exist depending on the resources available. The hierarchy begins with using low-cost printed visuals. Almost every desktop computer today has basic drawing capabilities. These tools can be used to create visuals that enhance the case presentation. Printouts can be photocopied and a stapled booklet can be created for use by the jury during testimony. The problem with such handouts is that there is always a tendency to look ahead. Jurors may not be looking at the same page as the page being discussed in testimony. A large format poster of each of the visuals is an alternative that enables the jurors' focus to be directed to the one aspect presently being discussed. The cost, however, is increased.

High-tech options such as Powerpoint cost even more in terms of equipment, but the actual software is not difficult to learn to use. The courtroom display equipment setup is comparable to setting up a VCR. My suggestion would be to draft a lawyer in your office or a member of your staff (who is comfortable with computer applications and VCRs) to learn to create Powerpoint presentations. Then have that person help others with creating and utilizing their presentations in court. The next level is using document management software (which again is more costly—in terms of knowledge and possibly financial expenditures, such as scanning and indexing documents).

For more involved multimedia presentations, there are two options other than those discussed earlier. The first would be to join with one or more prosecutors' offices or other public agencies and split the cost of hiring a full time multimedia developer—to be used by those various agencies. Clearly, there are multiple obstacles to such an endeavor but the benefits would be worth the toil. Depending on the importance of a particular case, a second option exists. Some resources may need to be expended on hiring consultants to create and present the multimedia display in court. Again the obvious problem is cost. However, some cases may require such extreme measures. The further down the road we travel to the courtroom of the future, the more frequently this need will recur.

LESSONS FROM EXPERIENCE

As with most new ventures, success and misfortune have charted our course. We have enjoyed some very productive experiences with this technology. We also have had to confront some obstacles. With each encounter, we have learned from our experience and over time improved our practices. The following examples will illustrate some of our undertakings.

No Surprises

One issue we addressed was how to approach the superior court judges to explain our need (desire) to use presentation technology in court. I decided to do this on a case by case basis. The test case was one of my own. I created an interactive timeline that clearly summarized police observations (extending over a period of weeks) of an automobile service station from where the defendant and co-defendant sold cocaine. I chose not to use any of the presentation equipment during trial. This was a mistake. When I asked the judge to allow me to use the timeline summary in my closing, my request was objected to and, in essence, the objection was sustained. The defense attorney objected to the fact that the photographs being used in the presentation had never been seen at that size (on a large screen) by the jury. This was a weak objection because the photographs (facial shots of five individuals) along with every other aspect of the timeline including dates, times and places were already admitted in evidence. The judge denied the objection on the claimed basis but did not give me permission to use the presentation (after having shown it to him in an offer of proof). He suggested I use a chalkboard in my closing for any timeline I wanted to draw. Clearly, since I was being permitted to use a chalkboard to draw a timeline, there was no reason to deny me the use of a computer presentation of the exact same information. The polished appearance should not have negated its usefulness.

I presented my closing argument, got a conviction and learned three lessons. First, ask permission before you use a multimedia presentation in an opening statement or a closing argument. Second, if you want to use presentation technology at any stage of a trial, use it throughout the entire case (which is what the judge suggested I do next time¹⁰). Also, provide it to the defense early on in discovery. That way any perceived unfairness can be addressed even before trial commences. Third, time spent creating a presentation that is ultimately not permitted in court is not wasted. When I made my closing argument, the animation was vividly present in my mind, so even though the jury was not permitted to view it, the delivery of my argument was assisted and directed by my memory of the presentation I had created. The closing argument was enhanced by the hours it took me to think about and prepare the multimedia presentation.

The 911 Call Car Chase

Interactive multimedia displays can be used to perform visual storytelling. We have used a technique in which the text of a 911 call appears on the screen simultaneously with the audio of the call. In one such case, a person called 911 while he chased a car occupied by two men with guns. The recorded conversation lasted seven minutes. The multimedia presentation showed the text of the conversation he had with the 911 dispatcher simultaneously with the audio of the call and a moving map that identified exactly where the caller was and where the defendants were during the chase. Separate colors of the transcribed words of the conversation distinguished between the caller's voice and that of the dispatcher.

Interactive Multimedia is a very effective way to clarify fast-paced, dynamic information. Here not only was the direction of the chase made intelligible, but the audio was clarified by distinguishing what was being said and by whom. The multimedia display also helped pace the jury to read along with the audio and not lag behind (possibly missing important information).

The Room That No Longer Is

Electronic presentations can illustrate information that either does not exist or is somewhat confusing. In one case, I created a three-dimensional illustration (drawing) of the interior of an apartment that had changed since the date of the homicide eight years earlier. While the apartment still existed, locations of doors, windows and a wall had changed. I used the crime scene photographs along with information from the homicide detectives to draw the room as it appeared (a fair and accurate representation) on the date of the incident.

Limitless Opportunities

Depending on your budget and the skills of your employees, electronic presentations can include the following: two-dimensional animations (which can illustrate, for example, the way in which an accident took place or the general principles of fire), three dimensional simulations (which recreate an event based on engineering and physics principles), virtual reality (which can put the viewer in a location that can be viewed in a 360 degree direction) or relevant video clips (which can be accessed immediately without having to rewind or fast forward a videocassette player). Any type of presentation seen on "Nightline" or CNN, which enables the viewer to better understand a point of newsworthy information, can be modeled and replicated using relatively inexpensive media tools. Today, the options are virtually limitless.

Trouble

Problems in using technology will arise. We had one misfortune where the power management settings shut

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down the laptop computer due to a delay in using the computer. Another was when the detective who was seated at counsel table unknowingly disconnected the electric cord from the back of the laptop eventually causing the screen to go blank once the battery power had been dissipated. Another was when a projector broke down during trial. Luckily we called a local rental company and seamlessly replaced the broken projector without anyone realizing the problem existed. Problems are avoided by knowing of their potential and preparing for the worst.

Another aspect of trouble is in not preparing for the day when your multimedia developer will leave. The easy solution to that is to constantly groom others to be able to step into that person's shoes. The difficulty is in finding resources available to ensure a smooth transition.

History Repeats Itself

The final lessons I have learned concern how to handle new technologies as they arise in the future. First, stay abreast of changes in technology. Read books and articles, attend seminars and enroll in classes outside the scope of your industry, i.e. not related to prosecutors or practicing law. Business presentations and conferences are a great source of information regarding cutting-edge technologies. Technology magazines are also an excellent resource. Think about the breakthroughs in other fields and try to discover how those technologies either save time or save money for the users in those industries. How does that apply to you? If you do not have the time to do this research, find someone to report to you on this. Keep informed of what is on the horizon and you will be the innovator introducing new technologies to your peers and your opponents.

Second, whenever the opposing party uses new technology in a case against you don't let them get away with it without forcing them to overcome the legitimate hurdles. In other words, object. The law regarding the presentations I have created is relatively simple¹ but we rarely have been forced to justify what we do to judges. Defense attorneys have failed to require us to. It seems obvious then that if you are surprised by a new technology used by the defense, you should make them explain why their use of it is justified under the law.

Third, if your objection fails, request, out of fairness, that you also be allowed to use the new technology during the trial. Have some or all of your evidence added to the presentation in advance of the trial. While you are before a jury, use their technology as if it is yours. Ultimately, attempt to level the playing field. Do not let the new technology tilt it in your opposition's favor.

The most effective way to persuade someone is to speak in terms with which they are familiar. Interactive multimedia courtroom presentations do just that. They speak in visual terms to an audience that has been trained by our society to rely on visual information.

Interactive presentations make the prosecutor's job to access the right information at the right time much easier than ever before. Multimedia presentations allow the prosecutor to clarify and synthesize the information so as to increase the jury's interest, comprehension and memory retention. Graphical excellence and a mastery of visual communication skills can become the prosecutor's most lethal weapon.

Are you prepared for the courtroom of the future? Its arrival is imminent. Prosecutors' offices are in a unique position now to stay ahead of the curve. To be truly effective, the prosecutor should employ these available technologies. Most important is the need to create the internal office culture in which prosecutors learn to naturally communicate using visual language. Delay, and you may find yourself playing catch-up to the defense bar. To keep the competitive edge, communicate visually.

Editor's Note: Mr. Carney is also the founder of WIN Interactive, an interactive multimedia, video production and new media consulting firm. He can be contacted at the district attorney's office or by e-mail at: da.help@wininteractive.com. Mr. Carney will be presenting a program entitled "The Art of Persuasion: Winning with Multimedia" at the NDAA Summer Conference, "The Boston I.T. Party," in Boston from 3:30 to 5:00 P.M. on July 23, 2001. This article represents the opinions and legal conclusions of its author and not necessarily those of the district attorney's office.

ENDNOTES

¹ "Every successful technological innovation is the result of two simultaneous forces—a controlled insanity needed to break away from the stranglehold of current reason and ideas, and a disciplined assessment of potential human utility, to filter out the truly absurd." See M. Dertouzos, "Kurtzweil vs. Dertouzos," *Technology Review*, January/February 2001, p. 82. Interactive multimedia courtroom presentations are both a break from the traditional courtroom practice and a useful tool for the trial prosecutor.

² An article in *Massachusetts Lawyers Weekly* noted that the Boston defense bar has worries about the Suffolk County District Attorney's Office's recent use of multimedia presentations (see "DA's Modern Trial Tools A Concern To Defense Bar," *Massachusetts Lawyers Weekly*, January 1, 2001).

³ The Suffolk District is comprised of Boston, Chelsea, Winthrop and Revere.

⁴ Using Powerpoint as a display device is very helpful to the lawyers, the judge, and the jury—as is a document camera (such as ELMO) or trial presentation software. These methods are better in comparison to the traditional method. Historically, evidence is introduced through a witness and then it is published to the jury. This process means spending valuable trial time passing the document, photograph or object individually from one juror to the next and possibly to the judge. Presenting the information on a large screen in the courtroom so all can see (jury, lawyers, judge and the public) saves time and focuses everyone on the substance of the testimony. There is no confusion as to what particular part of the photograph or document is being discussed because the witness is pointing to it on the screen (via a laser pointer right from the witness stand or a remote controlled mouse). The exact portion of the item that the witness is testifying about is seen by everyone at the same time—while the testimony is being elicited. Because of this process, the evidence does not need to be published to the jury that typically expends much time and quite possibly distracts the jury from what is being testified to by the witness.

⁵ Roger Oatley describes it this way: “Lawyers and judges must accept that to the public we serve, the computer, computer imaging and technology in general is a feature of everyday life which they take for granted. Jurors are so used to being shown that they no longer are content to just sit back and listen.” R. Oatley, “Computerization of Demonstrative Evidence: Changing the Face of Advocacy,” *The Oatley Dossier* (Continuing Legal Education Society of British Columbia – Evidence Update – June 11, 1999), www.oatleypurser.com/page_in_print_oatley_technology.htm.

⁶ Studies are routinely cited for the proposition that visual aids increase memory retention and comprehension. Most recently *Presentations Magazine* and 3M Corporation conducted a study that identified multimedia as the superior presentation method compared to overhead slides or text alone. See “Multimedia or Bust,” *Presentations Magazine*, February 2000. The “Multimedia or Bust” article also noted an earlier study from 1986 (conducted by the Management Information Systems Research Center at the University of Minnesota and 3M Corporation) which found that presentations that “use visual aids are 43 percent more persuasive” than ones that don’t.

⁷ It can also increase comprehension on the part of the trial attorney. In one case I created a presentation illustrating the opinion of an accident reconstructionist. The assistant district attorney assigned to the case said that he had not fully understood how the accident occurred until he saw the multimedia presentation.

⁸ A lawyer with these specialized interests will be hard to find. Notwithstanding that hurdle, the reason why a lawyer is ideal is because a multimedia graphic designer can waste valuable time designing and creating presentations that are

not admissible. Also, a trial lawyer will more likely have knowledge of what will be helpful to focus on in order to persuade the jury.

⁹ For an extensive inquiry into the history of graphical excellence: see Tufte, *The Visual Display of Quantitative Information*, Graphics Press (1983), p.13-52.

¹⁰ We have had a number of “next time” opportunities with this judge. To date, we have used multimedia presentations before this particular judge more frequently than any other judge in superior court. Most recently, he complimented the trial prosecutor on one of my presentations calling it “dynamite”—which illustrates that persistence is helpful in acquainting judges with new technologies. Find out why a judge objects to a particular presentation and address that concern in your next presentation before that judge.

¹¹ The presentations I have created, in essence, are electronic chalks. See *Everson v. Casualty Company of America*, 208 Mass. 214 (1911) (a chalk means a rough representation, as an outline upon a blackboard in the presence of the jury, to illustrate a witness’s evidence, and not rising to the dignity of a scientifically accurate representation). Some multimedia presentations, however, can surpass use as a chalk. If a witness testifies that a presentation is a fair and accurate representation of what it purports to be, then it is admissible as evidence. It could be introduced and used in jury deliberations. See *Dana v. City of Boston*, 176 Mass. 97 (1900) (fair and accurate requirement for photographs). We have had the compact disc that contained the computer presentation admitted into evidence in a few of our cases. In one, the jury was permitted to take a laptop computer into the jury room and view the presentation while they deliberated.

Some presentations, however, go even further. A computer simulation is a presentation usually created by an engineering expert with the help of a computer program using mathematics, physics and engineering principles. The engineer, understanding the principles involved, can plug the right numbers into the computer and produce a recreation/simulation based on calculations made by the computer. This type of presentation undergoes a much higher evidentiary scrutiny. See *Commercial Union Insurance Company v. Boston Edison Co.*, 412 Mass. 545 (1992) (computer generated models or simulations in Massachusetts will be treated like other scientific tests); see also *Perma Research and Development v. Singer Co.*, 542 F.2d 111 (2nd Cir. 1976); *Schaeffer v. General Motors Corporation*, 372 Mass. 171 (1977); *Starr v. Campos*, 655 P.2d 794 (Ariz. 1982); *People v. McHugh*, 124 Misc. 2d 559, 476 N.Y.S.2d 721 (1984); *Deffinbaugh v. Ohio Turnpike Commission*, 67 Ohio App. 3d 692 (1990); *Strock v. Southern Farm Bureau Casualty Insurance*, 1993 U.S. App. LEXIS 17431 (4th Cir. July 12, 1993); *Steinhart v. St. Paul Casualty & Fire Ins.*, 215 Wis. 2nd. 321 (1997); *People v. Hood*, 62 Cal Rptr. 2nd 137 (1997).