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COURTROOM TECHNOLOGY AND LEGAL ETHICS:
CONSIDERATIONS FOR THE ABA COMMISSION ON ETHICS 20/20
by
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INTRODUCTION

It was not until 2002 that trial began for the October 30, 1975 murder of fifteen-year old Martha Moxley.¹ The case against the accused, Michael Skakel, who was also fifteen years old at the time of the murder, was both old and lacking in strong forensic evidence. Skakel argued that he was elsewhere at the time of the murder and the prosecution had no eyewitnesses who could testify otherwise.² To convince a jury beyond a reasonable doubt of Skakel's guilt would be no small task. To overcome the challenge, the prosecution used an interactive multi-media evidence presentation system. All of the photographs, documents, diagrams, and video and audio recordings were digitized and placed on CD-rom, allowing the prosecution to display them, with nothing but the click of a mouse, on a large monitor directly behind the testifying witnesses.³

By using technology to visually present the evidence, the prosecution not only saved trial time usually spent passing documents from one juror to the next, but was also better able to focus the jury's attention on the substance of the testimony being presented.⁴ For example, while the detective who collected much of the physical evidence from the scene testified, the prosecution displayed an aerial photograph of the area, zoomed in, and labeled the areas where particular items were found.⁵ In short, by using courtroom technology to visually present the evidence, the prosecution put on a seamless performance that clarified the evidence, captivated the audience,

¹ Brian Carney & Neal Feigenson, *Visual Presentation in the Michael Skakel Trial: Enhancing Advocacy through Interactive Media Presentations*, 19 CRIM. JUST. 22, 22 (2004).

² *Id.*

³ *Id.* at 24.

⁴ *Id.*

⁵ *Id.* at 26.

and convinced the jury of Skakel's guilt.⁶ Skakel was convicted and sentenced to a term of twenty years to life.⁷

The advantages of using of courtroom technology⁸ to visually present one's case include enhanced juror comprehension and retention of the information presented, increased persuasive impact, and more efficient trials.⁹ As such, the use of courtroom technology will soon be, if it is not already, a necessary component of modern litigation. This paper addresses an issue that to date has been ignored by legal scholars and practitioners: whether and to what extent lawyers' ethical obligations are implicated as technology-augmented litigation becomes the norm. More specifically, this paper considers whether lawyers have any ethical obligations in connection with the use of courtroom technology and if so, whether the current Model Rules of Professional Conduct ("Model Rules") adequately express those obligations or whether the ABA Commission on Ethics 20/20 (the "Commission") should consider amending the Model Rules to better do so.

Part I contains a discussion of the current status of courtroom technology, including the types of evidence display systems available, the types of computer-generated exhibits most commonly used, and statistical information demonstrating the ever-increasing role technology plays in modern litigation. Part II contains a discussion of the effectiveness of using courtroom technology to visually present one's case, including an explanation of several scientific theories and studies demonstrating that people are visual learners and that visually presented information

⁶ *Id.* at 24.

⁷ State v. Skakel, 276 Conn. 633, 639 & n.2 (2006).

⁸ As used in this article, the term "courtroom technology" refers only to evidence display technologies and the computer-generated exhibits displayed using those technologies. See discussion *infra* Part I.A-B (describing the different types of evidence display technologies and computer-generated exhibits available). In other contexts, however, the term may encompass other courtroom-related technologies such as electronic docketing and video-conferencing, as well as access to e-filed materials, real-time court record transcripts, or the internet while in the courtroom. See Frederic I. Lederer, *High-Tech Trial Lawyers and the Court: Responsibilities, Problems, and Opportunities*, 52 FED. LAW. 41, 42 (2005) (defining courtroom technology to include all of the above technologies and categorizing them as either "evidence presentations, court records, [or] data access and communications").

⁹ See discussion *infra* Part II.A-C.

is more persuasive and has a greater impact than information presented only verbally. Finally, Part III examines whether the current Model Rules adequately address courtroom technology and concludes that because they do not, the Commission should consider courtroom technology specifically as part of its general technology discussion.¹⁰

I. THE VIRTUAL COURTROOM: TODAY’S TECHNOLOGY-AUGMENTED LITIGATION

The use of technology in litigation is not a new phenomenon. For more than thirty years, lawyers have used equipment such as overhead projectors, television sets, and VCRs in the courtroom to present their cases.¹¹ Today’s courtroom technology, however, provides lawyers with much more sophisticated and versatile options.

A. Modern Evidence Presentation Systems

Evidence presentation technologies are those technologies “which provide a way to present evidence electronically and simultaneously to everyone in the courtroom.”¹² In any given courtroom, the evidence presentation system may include a variety of different components. Available technologies include the following: (1) evidence cameras; (2) laptop computers equipped with presentation software, such as Trial Director, Sanction, Trial Pro, or Microsoft’s PowerPoint; (3) electronic whiteboards; (4) digital monitors, which vary in size and can be located anywhere in the courtroom including the bench, behind the witness stand, and in the jury box; (5) digital projectors and projection screens; (6) annotation equipment; (7) integrated lecterns; and (8) kill switch and control systems.¹³

¹⁰ See discussion *infra* Part III.A-C.

¹¹ See DEANNE C. SIEMER ET AL., NAT’L ASSOC. FOR TRIAL ADVOCACY, EFFECTIVE USE OF COURTROOM TECHNOLOGY: A LAWYER’S GUIDE TO PRETRIAL AND TRIAL 20-21 (2002) [hereinafter LAWYER’S GUIDE] (describing the “legacy equipment” (i.e. older equipment) available in courtrooms).

¹² Elizabeth C. Wiggins, *The Courtroom of the Future is Here: Introduction to Emerging Technologies in the Legal System*, 28 LAW & POL’Y 182, 186 (2006).

¹³ *Id.*; LAWYER’S GUIDE, *supra* note 11, at 6-20.

By way of illustration, one of the most common evidence presentation technologies is the evidence camera. Equipped with a very small video camera, it captures color images of whatever is placed on its base (photos, documents, x-rays, etc.) and transmits the data to an external monitor or projection screen for display.¹⁴ Because evidence cameras have zooming capabilities, the user can enlarge images or portions of images, which can help focus the fact finder's attention.¹⁵ The user can also mark up or highlight the document (or other exhibit) while it is being displayed, further clarifying the point at issue.

Laptop computers with presentation software can allow for even more sophisticated presentation techniques. For example, both Trial Director, from InData Corp., and Sanction, from Verdict Systems, allow the user to display and manipulate the digital images in a variety of ways.¹⁶ The user can emphasize certain portions of documents through highlighting, underlining, zooming in, or using the "call-out" feature, which allows the user to pull out and enlarge certain portions of the text. These programs also allow for the juxtaposition of two pages for side-by-side comparisons, the display of deposition video with synchronized scrolling text displayed along-side, and many other dynamic methods of presenting information.¹⁷

In addition to the aforementioned technologies, which are the most common, there are even more sophisticated possibilities available. These more advanced technologies, however, which include immersive virtual reality and holograms, are often more expensive and rarely used.¹⁸ Immersive virtual reality equipment permits the viewer, who wears a head-mounted

¹⁴ LAWYER'S GUIDE, *supra* note 11, at 6-7.

¹⁵ *Id.* at 7-8.

¹⁶ *Id.* at 10.

¹⁷ JOANNA GALLANT ET AL., THE SCIENCE OF COURTROOM LITIGATION: JURY RESEARCH & ANALYTICAL GRAPHICS 357 (2008); April Tate Tishler, *The Animated Attorney: Effective Use of Demonstratives in Jury Trials*, 780 P.L.I. LITIG. 861, 870 (2008).

¹⁸ LAWYER'S GUIDE, *supra* note 11, at 38-39.

display, to feel as if he or she is actually *in* the particular scene.¹⁹ Holograms, which are created through the use of specially manipulated laser beams, are three-dimensional images that appear to “hang in midair” and can replicate the particular object or person and its motions exactly.²⁰

B. Computer-Generated Exhibits

In addition to providing new methods for displaying exhibits in the courtroom, computers have also changed the types of exhibits lawyers use to present their cases. Computer-generated exhibits (CGEs) are generally divided into six categories: static images, enhanced images, animations, recreations, simulations, and computer-models.²¹ The first category, static images, consists of non-moving images that are either created or stored electronically and electronically displayed in the courtroom.²² These images do not move and cannot be enhanced in anyway.²³ Static images include tables, graphs, maps, diagrams, and illustrations.²⁴

The second category of CGEs, enhanced images, could be described as “occupying the space between static images and animations.”²⁵ These images, although initially presented in static form, are subject to computer-driven manipulation. For example, the attorney or witness may highlight or enlarge particular areas, use split screen presentation, or emphasize particular elements using zoom, different colors, arrows and the like.²⁶

An animation is simply a series of static images shown in rapid succession, thereby creating the illusion of motion.²⁷ Animations do not attempt to recreate or simulate the *actual*

¹⁹ *Id.*

²⁰ *Id.*

²¹ See *Verizon Directories Corp. v. Yellow Book USA, Inc.*, 331 F. Supp. 2d 136, 137 (E.D. N.Y. 2004); Fred Galves, *Where the Not So Wild Things Are: Computers in the Courtroom, the Federal Rules of Evidence, and the Need for Institutional Reform and More Judicial Acceptance*, 13 HARV. J.L. & TECH. 161, 177-185 (2000).

²² Galves, *supra* note 21, at 177-78; KENNETH S. BROUN ET AL., MCCORMICK ON EVIDENCE 375 (6th ed. 2006).

²³ Galves, *supra* note 21, at 178.

²⁴ *Verizon*, 331 F. Supp. 2d at 137.

²⁵ *Id.* at 138.

²⁶ *Id.*

²⁷ *Id.* at 137-38; BROUN ET AL., *supra* note 22, at 376.

event; rather, they are meant only to accompany and illustrate the testimony of a witness.²⁸ The input data is nothing more than the witness's own memory or knowledge.²⁹ With an animation, the images can be manipulated so as to depict the scene from varying viewpoints and distances. Thus, an animation can be used to illustrate testimony in ways that an actual video or photograph could not. For example, an animation could depict the image of a handgun underneath its surface by making the outer casing appear transparent, and illustrating its inner chambers and mechanical devices in a much more effective manner than oral testimony alone would provide.³⁰

Apart from animations, moving CGEs also include recreations and simulations. Most literature combines recreations and simulations into a single category of CGEs, using the terms interchangeably.³¹ Simulations, or what most literature refers to as “simulations or recreations,” are intended to recreate the actual event in the way that it “must have happened.”³² The input data is not merely the eyewitness' description, as with an animation, but rather scientific principles, data, and variables.³³ With a simulation, empirical data such as the size and shape of an object, time, altitude, and velocity are fed into a computer that synthesizes the information “to yield output in the form of a visual presentation that conforms to the laws of physics and science.”³⁴ Thus, with a simulation, an event can be depicted visually even when there are no eyewitnesses to testify.³⁵

²⁸ *Verizon*, 331 F. Supp. 2d at 138; Galves, *supra* note 21, at 181.

²⁹ Galves, *supra* note 21, at 181.

³⁰ *Id.*

³¹ See, e.g., *Verizon*, 331 F. Supp. 2d at 138; Lori G. Baer & Christopher A. Riley, *Technology in the Courtroom: Computerized Exhibits and How to Present Them*, 66 DEF. COUNS. J. 176, 177 (1999); Timothy W. Cerniglia, *Computer-Generated Exhibits—Demonstrative, Substantive or Pedagogical—Their Place in Evidence*, 18 AM. J. TRIAL ADVOC. 1, 5 (1994).

³² BROWN ET AL., *supra* note 22, at 383.

³³ Galves, *supra* note 21, at 183-85; Cerniglia, *supra* note 31, at 5.

³⁴ Elan E. Weinreb, ‘Counselor, Proceed with Caution’: *The Use of Integrated Evidence Presentation Systems and Computer-Generated Evidence in the Courtroom*, 23 CARDOZO L. REV. 393, 404 (2001).

³⁵ Galves, *supra* note 21, at 184.

Recreations, when they are distinguished from simulations, are described as falling somewhere between animations and simulations.³⁶ They are sometimes referred to as “recreation animations.”³⁷ Recreations differ from animations in that they *are* meant to illustrate the actual event as it happened, but they illustrate an expert’s pre-existing theory of the event.³⁸ Recreations differ from simulations in that simulations do not illustrate the expert’s pre-existing theory, but rather, the expert used the simulation in *forming* his opinion as to what occurred.³⁹

The final category of CGEs is the computer model. Computer models, like simulations, involve the input of data into a computer, which then runs the data through formulae based on scientific principles.⁴⁰ Using a computer model, an expert can test multiple hypotheses and form an opinion based on the results.⁴¹ Computer models differ from simulations only in that visual images are not necessarily created by computer models, as they are with simulations.⁴²

With all types of CGEs, the attorney wishing to use them in court must have a thorough understanding of the applicable evidentiary standards and potential barriers to admissibility for such evidence. A detailed discussion of possible evidentiary issues is beyond the scope of this paper. To cite but one example, however, animations, which merely illustrate the testimony of a witness, are generally treated as demonstrative evidence and are admissible so long as they are (1) authentic; (2) relevant; (3) a fair and accurate representation of the evidence to which they purport to relate; and (4) have a probative value that is not substantially outweighed by the danger of unfair prejudice.⁴³ Because they are offered for limited demonstrative purposes,

³⁶ BROUN ET AL., *supra* note 22, at 384-85.

³⁷ *Id.* at 376, 385; Galves *supra* note 21, at 183.

³⁸ BROUN ET AL., *supra* note 22, at 384.

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ Verizon Directories Corp. v. Yellow Book USA, Inc., 331 F. Supp. 2d 136, 138 (E.D. N.Y. 2004)

⁴² BROUN ET AL., *supra* note 21, at 384; Cerniglia, *supra* note 31, at 6.

⁴³ *See, e.g.*, People v. Cauley, 32 P.3d 602, 607 (Colo. App. 2001); Clark v. Cantrell, 339 S.E.2d 528, 536 (S.C. 2000).

animations may be excluded if they contain information beyond the testimony which they accompany and purport to explain. For instance, in *State v. Stewart*, a case involving the drive-by shooting of a bicyclist, the prosecution presented an animation depicting the shooting from several angles, including inside the vehicle.⁴⁴ The court stated the following with regard to the scenes from inside the vehicle, which depicted the facial expressions and movements of the passengers prior to firing the gun:

[T]he animation contains a great deal of material that was based on conjecture and did not illustrate [the medical examiner's] testimony on the precise record. Indeed, the four animation sequences depicting appellant's face and eyes at the time of the shooting amounted to original evidence depicting appellant's intent, the most hotly disputed element in the case. Therefore, while it is true that the animation may have made it easier for [the medical examiner] to testify and may have been very effective in depicting the shooting, the animation's effectiveness was enhanced through artists' renditions of facial expressions and movements that did not merely recreate what was on the record, but created impressions depicting deliberate, intentional actions favorable to the state's theory of the case.⁴⁵

Because the animation exceeded the purpose for which it was admitted, it should have been excluded and the trial court erred in admitting it in its entirety.⁴⁶ As this is just one example, it is imperative that attorneys seeking to use CGEs to present their cases thoroughly research and understand all of the evidentiary issues involved with the use of CGEs in litigation prior to expending the time and resources in creating them.

C. The Use of Courtroom Technology: Where Are We Now?

The use of courtroom technology appears to be growing at a more rapid pace in the federal court system than in state courts.⁴⁷ In fact, as early as 1999, the Judicial Conference of

⁴⁴ 643 N.W.2d 281, 283-84, 286-87 (Minn. 2002).

⁴⁵ *Id.* at 295.

⁴⁶ *Id.*

⁴⁷ See Elizabeth C. Wiggins, *What We Know and What We Need to Know about the Effects of Courtroom Technology*, 12 WM. & MARY BILL RTS. J. 731, 732 (2003) (describing the rapid growth of the use of technology in federal courts); Frederic I. Lederer, *The Road to the Virtual Courtroom? A Consideration of Today's—and*

the United States⁴⁸ endorsed the use of courtroom technology, finding that it enhanced the “fact-finding mission of federal courts” and that courtroom technologies should be considered as “necessary and integral parts of courtrooms undergoing construction or major renovation . . . [and should] be retrofitted into existing courtrooms or those undergoing tenant alterations as appropriate.”⁴⁹ In June of 2002, the Federal Judicial Center surveyed all federal district courts on available technologies.⁵⁰ According to the survey:

94% of district courts have access to an evidence camera; 66% to a digital projector and projection screen; 93% to wiring to connect laptop computers; 57% to monitors built into the jury box; 77% to monitors located outside the jury box; 89% to a monitor at the bench; 88% to a monitor at the witness stand, at counsel table or at the lectern; 77% to monitors or screens targeted at the audience; 80% to a color video printer; 91% to annotation equipment; 95% to a sound reinforcement system; 92% to a kill switch and control system; [and] 81% to an integrated lectern.⁵¹

In addition, most of the federal courts surveyed reported having orientation programs available for court staff and attorneys wishing to familiarize themselves with the equipment and how it can be used in court.⁵²

Since the 1990s, the American Bar Association has conducted annual surveys of law firms and solo-practitioners on their use of technology, including litigation support and courtroom technology.⁵³ A review of the surveys makes clear that the use of courtroom technology is on the rise. For example, whereas the 2007 survey indicated that only 32% of

Tomorrow's—High-Technology Courtrooms, 50 S.C. L. REV. 799, 800 (1999) (noting that as of 1998 only eight state court facilities qualified as “high-technology” compared with thirty-two federal courts).

⁴⁸ The Judicial Conference of the United States, established by 28 U.S.C. § 331, acts as the “governing body of the federal courts” and has the fundamental purpose of making “policy with regard to the administration of the U.S. courts.” Wiggins, *supra* note 47, at 731 n.1.

⁴⁹ REP. OF THE PROCEEDINGS OF THE U.S. JUD. CONF. 8 (1999), available at <http://www.uscourts.gov/judconf/99-Mar.pdf>.

⁵⁰ Wiggins, *supra* note 47, at 733 (describing the questionnaire and noting that “[n]inety of the ninety-four districts responded to the survey”).

⁵¹ *Id.*

⁵² *Id.* at 734.

⁵³ ABA, 2003 LEGAL TECHNOLOGY SURVEY REPORT: LITIGATION AND COURTROOM TECHNOLOGY vii (2004) [hereinafter 2003 ABA Survey Report].

respondents had litigation support software available at their firms, by 2009 that number had risen to 57%.⁵⁴ Similarly, 47% of respondents in the 2009 survey indicated using a laptop in the courtroom, primarily for presentation purposes, up from 37% in the 2007 survey and just 16% in the 2003 survey.⁵⁵ Likewise, by 2009, the availability of flat-panel LCD monitors was up to 42%, compared with 33% in the 2008 survey, and integrated lecterns was up to 38%, compared with 21% in 2008 and just 13% in 2003.⁵⁶ Moreover, it is important to remember that even when the courtroom itself is not equipped with a particular type of technology, technology owned by the lawyer or law firm or rented from a vendor can be brought into the courtroom for use in a particular trial as well.⁵⁷ This is so even if the courtroom's own "technological capabilities" consist of nothing more than electrical outlets.⁵⁸

Where a courtroom has been outfitted with visual display technology, the use of the technology can be categorized as either permissive or mandatory.⁵⁹ In most courts, the decision of whether to use the available technology is left to the lawyer.⁶⁰ Use of the installed equipment, especially in federal court and in a document-heavy case, however, is sometimes mandatory.⁶¹ For example, one federal judge has a ten document cut-off, such that "if the case involves more than 10 documentary exhibits, lawyers are required to use the display equipment" for the exhibits.⁶² Moreover, where the use of courtroom technology is mandatory, it is often reported

⁵⁴ ABA, 2009 LEGAL TECHNOLOGY SURVEY REPORT III-xiv (2009) [Hereinafter 2009 ABA Survey Report].

⁵⁵ *Id.* at III-ix; 2003 ABA Survey Report, *supra* note 53, at xv.

⁵⁶ 2009 ABA Survey Report, *supra* note 54, at III-x; 2003 ABA Survey Report, *supra* note 53, at xvi.

⁵⁷ LAWYER'S GUIDE, *supra* note 11, at 2; Lynn A. Epstein, *The Technology Challenge: Lawyers have Finally Entered the Race But Will Ethical Hurdles Slow the Pace?*, 28 NOVA L. REV. 721, 739-40 (2003).

⁵⁸ LAWYER'S GUIDE, *supra* note 11, at 48.

⁵⁹ Lederer, *supra* note 8, at 43.

⁶⁰ LAWYER'S GUIDE, *supra* note 11, at 49.

⁶¹ *Id.*; Lederer, *supra* note 8, at 43.

⁶² LAWYER'S GUIDE, *supra* note 11, at 49.

that after the initial mandatory use, lawyers become “believers” in the efficiency of technology and continue to use it.⁶³

II. THE EFFECTIVENESS OF USING COURTROOM TECHNOLOGY TO VISUALLY PRESENT EVIDENCE

We have all heard the old clichés “a picture is worth a thousand words” and “seeing is believing.” Even case law is littered with commentary on the effectiveness of visually presented evidence, and sometimes even to the extent of inferring prejudice therefrom.⁶⁴ The effectiveness of visually presenting information also has substantial scientific support, however. Indeed, the abundance of studies and theories supporting the effectiveness of visually presenting information serves to justify the every-increasing role technology plays in modern litigation and ensures that it is not only the current “trend,” but the future of courtroom practice.

A. Memory and the Visual Image: Visually Presenting Information Leads to Better Comprehension and Retention of the Information Presented

At the most basic level, memory can be described as including three inter-connected stages: (1) the encoding stage, which describes the process by which “information is introduced and significance is attached”; (2) the storage stage, which describes the process through which information is retained; and (3) the retrieval stage, which describes the process by which

⁶³ *Id.*

⁶⁴ *See, e.g.,* *Racz v. R.T. Merryman Trucking, Inc.*, No. 92-3404, 1994 WL 124857, at *5 (E.D. Pa. Apr. 4, 1994) (“Relying on the old adage, ‘seeing is believing,’ we conclude that the jury may give undue weight to an animated reconstruction of the accident. . . . Because the expert’s conclusion would be graphically depicted in a moving and animated form, the viewing of the computer simulation might more readily lead the jury to accept the data and premises underlying the defendant’s expert’s opinion, and, therefore, to give more weight to such opinion than it might if the jury were forced to evaluate the expert’s conclusions in the light of the testimony of all witnesses, as generally occurs in such cases.”); *Van Houten-Maynard v. ANR Pipeline Co.*, No. 89C0377, 1995 WL 317056, at *12 (N.C. Ill. May 23, 1995) (“[T]his type of evidence can be highly influential upon a jury, well beyond its reliability and materiality, due to its documentary-type format presented in a “television” like medium. . . . [C]omputer animation evidence, by reasons of its being in a format that represents the latest rage and wrinkle in video communications and entertainment, may well have an undue detrimental effect on other more reliable and trustworthy direct-type evidence.”); *Sommervold v. Grevlos*, 518 N.W.2d 733, 737 (S.D. 1994) (“When people see something on television, they think it is real even when it is not.”); *Clark v. Cantrell*, 339 S.E.2d 528, 536 (S.C. 2000) (noting that animations have “the potential to create lasting impressions that unduly override other testimony or evidence”).

memory is “accessed and ultimately utilized.”⁶⁵ Visual imagery can enhance the memory process in all three phases.⁶⁶

With regard to the encoding stage, visually presenting information can assist the jury in several ways. First, in order for information to be understood, assimilated, and believed by the jury, the information presented must be *imaginable*.⁶⁷ That is, it must prompt some sort of sensory imagery.⁶⁸ When oral testimony is in complex or abstract terms, jurors may be unable to create a mental image of what is being described and, therefore, will be less likely to understand and believe it.⁶⁹ Using a visual aid to accompany the oral testimony solves this dilemma by supplying the jury with an image of the message being conveyed. Moreover, by supplying the image *for* the jury, the attorney has control over the image the jury perceives, rather than leaving each juror to create their own individualized mental image.⁷⁰ For example, upon hearing the word “dog,” each juror will have a different image spring to mind. Some may picture a Collie, while others think of a Labrador. If, however, the attorney says the word “dog” and simultaneously projects the image of a vicious pit bull onto the screen, the jurors will all share the same mental image and will more easily and accurately understand the “dog” referred to in the testimony.⁷¹

Second, a visual aid will assist the jury through proximity, meaning that it will decrease the number of mental steps each juror must take in order to understand the information being presented.⁷² Rather than hearing the information described verbally and then having to create their own mental image, which is an indirect process, the jurors receive the information directly,

⁶⁵ GALLANT ET AL., *supra* note 17, at 188.

⁶⁶ *Id.*

⁶⁷ Galves, *supra* note 21, at 188.

⁶⁸ *Id.*

⁶⁹ *Id.*

⁷⁰ *Id.* at 186-87.

⁷¹ *Id.*

⁷² *Id.* at 188-89.

through an actual image.⁷³ Third, accompanying oral testimony with a visual image assists in the encoding process simply in that it supplies the jury with two avenues through which to receive the information.⁷⁴ Thus, the information is more easily understood and processed on a deeper level.⁷⁵ And finally, the visual presentation of information using courtroom technology may better assist jurors in the encoding process simply because it is what they are accustomed to.⁷⁶ Today, “visual imagery accompanies much of the information that people seek or to which they are exposed.”⁷⁷ From television, to the internet, to electronic billboards, high-tech visual imagery is a pervasive component of modern communication.⁷⁸ Visually presented information may, therefore, be more effective simply in that it is how we receive most of our information today.

As for the storage stage of memory, it is well established that information presented visually is better retained than information presented only verbally.⁷⁹ A seminal study examining the effect of visual communication on learning was the 1963 Weiss-McGrath Report.⁸⁰ The study compared participant’s short-term and long-term retention of information presented using three different methods: (1) verbal presentation; (2) visual presentation; and (3) combined

⁷³ *Id.* at 189.

⁷⁴ GALLANT ET AL., *supra* note 17, at 189.

⁷⁵ *Id.*

⁷⁶ J. Bradley Ponder, *But Look over Here: How the Use of Technology at Trial Mesmerizes Jurors and Secures Verdicts*, 29 LAW & PSYCHOL. REV. 289, 292 (2005) (“Fox News, USA Today, and other modern media outlets have bombarded the public with neat graphs, fast news tickers, and weather charts. This ‘bullet-point’ learning is the simple reality of the modern juror. Providing jurors with similar technology places jurors at ease because it is what they are accustomed to learning from.”); Galves, *supra* note 21, at 191 (“An attorney can either ignore the fact that jurors get most of their information from television (sight and hearing) rather than just the spoken word (hearing) or even the written word (sight), or the attorney can choose to connect with jurors in a way that the juror is comfortable and in a manner that the juror is accustomed to before ever stepping into the courtroom.”).

⁷⁷ Fred Galves, *Will Video Kill the Radio Star? Visual Learning and the Use of Display Technology in the Law School Classroom*, 2004 U. ILL. J. L. TECH. & POL’Y 195, 201 (2004).

⁷⁸ *Id.*

⁷⁹ GALLANT ET AL., *supra* note 17, at 193.

⁸⁰ *Id.* at 194.

verbal and visual presentation.⁸¹ After seventy-two hours, participants retained just ten percent of information presented only verbally and twenty percent of information presented only visually.⁸² In contrast, when the information was presented both verbally and visually, participants retained sixty-five percent of the information, or more than six times the information that was retained from verbal presentation alone.⁸³

The drastic increase in retention when information is presented both visually and verbally can be explained by what is known as the “dual-coding theory.”⁸⁴ Dual-coding theory is based on the idea that information presented verbally is encoded differently than information presented visually.⁸⁵ Simply put:

Verbal information is encoded with a verbal trace whereby a narrative enters the memory and is stored as a verbal story. However, visual information or information that can be easily imagined in a visual form is encoded with both types of information—a verbal code and a visual code. Thus, a visual memory has an attached verbal description, and hence, visual memory is actually encoded twice. This redundant encoding process maximizes the likelihood of visual memories being retained over time and ultimately quickly retrieved because even if some of the memory is degraded (e.g., some of the verbal information is lost), the visual information is likely to remain, allowing the individual to access the stored information.⁸⁶

The dual-coding theory of memory was first introduced in the 1970s by Allan Paivio.⁸⁷ Studies replicating Paivio’s findings have been conducted over the years.⁸⁸

⁸¹ Adam T. Berkoff, *Computer Simulations in Litigation: Are Television Generation Jurors being Misled*, 77 MARQ. L. REV. 829, 845-46 (1994).

⁸² *Id.* at 846.

⁸³ *Id.*

⁸⁴ GALLANT ET AL., *supra* note 17, at 193.

⁸⁵ *Id.*

⁸⁶ *Id.*

⁸⁷ *Id.*

⁸⁸ See, e.g., Stephen A. Dewhurst & Martin A. Conway, *Pictures, Images, and Recollective Experience*, 20 J. EXPERIMENTAL PSYCH.: LEARNING, MEMORY, AND COGNITION 1088 (1994); Richard E. Mayer & Valerie K. Sims, *For Whom is a Picture Worth a Thousand Words? Extensions of a Dual-Coding Theory of Multimedia Learning*, 86 J. EDUC. PSYCH. 389 (1994).

With regard to the retrieval stage of memory, accompanying oral testimony with visual imagery will also increase the juror's ability to retrieve the information presented. This is so because memories that are encoded through multi-sensory means (i.e. verbal and visual presentation) can also be *retrieved* through a multisensory process (i.e. both verbal and visual cues can lead to memory retrieval).⁸⁹

The enhanced comprehension that results from the visual presentation of information may be even more dramatic when the information presented is otherwise complex and difficult to understand.⁹⁰ A moving visual, such as a computer animation or simulation, may be especially helpful. Indeed, one might argue that it is akin to the difference between showing a child how to tie his shoes and giving him written instructions on how to do so.⁹¹ For example, one commentator offered the following description of how a computer simulation facilitated juror understanding in a complex case involving a gas leak that resulted in multiple explosions:

If a computer simulation would not have been used, "the jury would have had to digest cumbersome traditional forms of demonstrative evidence needed to make the same points: diagrams of the chemical plant, maps of the city sewer system, eyewitness accounts of the explosion, and expert testimony on gas chemistry." Instead, with the use of a computer simulation, the jury was ostensibly able to "see" what happened. Two days after the jury was shown the computer simulation of the hexane explosion, the defendant settled the case for over \$18 million.⁹²

Thus, especially where the issues involved in the litigation are highly technical, the use of CGEs can greatly improve the jury's ability to comprehend the complexities of the case.

⁸⁹ GALLANT ET AL., *supra* note 17, at 192.

⁹⁰ See FREDERIC I. LEDERER, COURTROOM TECHNOLOGY FROM THE JUDGE'S PERSPECTIVE 4 (1997), available at <http://www.legaltechcenter.net/media/articles/judge.pdf> (last visited Mar. 8, 2010) ("Some testimony is almost useless without a visual component. The workings of a machine, interior of a body, or even a complicated street intersection cry out for a visual explanation."); Galves, *supra* note 21, at 168-69 (explaining that because the issues involved in litigation have become more complex, CGEs are now necessary to explain the complexities of the case in a way that jurors can understand).

⁹¹ See Eli Chernow, *Video in the Courtroom: More than a Talking Head*, 15 LITIGATION 3, 4 (1998) ("The difference between video and alternative evidence is like the difference between showing a child how to tie his shoes and giving him written instruction.").

⁹² Berkhoff, *supra* note 81, at 846-47.

B. The Persuasive Impact of Visually Presented Information

Along with increased comprehension and retention of the information presented, visually presented information is simply more persuasive than mere verbal descriptions.⁹³ This is due, in part at least, to what is known as the “vividness effect.”⁹⁴ The vividness effect is based on “the idea that information has a greater impact on social judgment when it is highly imaginable than when it is pallid.”⁹⁵ For example, studies show that mock jurors are more likely to accept testimony as true if it contains vivid details, such as “the defendant knocked over a bowl of guacamole dip, which splattered all over the white shag carpet.”⁹⁶ Likewise, when prompted to imagine the occurrence of a particular event, people later view that event as more plausible and more likely to have occurred.⁹⁷ Thus, the use of courtroom technology to visually present information, which can aid the jury in creating a mental image of what is being described, can be highly influential.

The persuasive impact of visually presented information may be even more dramatic when the information is expressed in the form of a moving CGE, such as an animation or simulation, especially where the information presented is something with which the viewer is unfamiliar. First, studies show that people are poor intuitive physicists.⁹⁸ That is, they do not intuitively understand the basic laws of motion. So, for example, one study found that when asked to predict the path of a ball rolling out of a spiral tube, most subjects incorrectly predicted

⁹³ Meghan A. Dunn et al., *The Jury Persuaded (and Not): Computer Animations in the Courtroom*, 28 LAW & POL’Y 228, 229 (2006) (“Visual aids are more persuasive to jurors than verbal descriptions of that same evidence, regardless of whether the visual aid is a photograph (Douglas, Lyon and Ogloff 1997), a videotape (Kassin & Garfield 1991), or the actual object itself (Wasserman & Robinson 1980).”).

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ Saul M. Kassin & Meghan A. Dunn, *Computer-Animated Displays and the Jury: Facilitative and Prejudicial Effects*, 21 LAW & HUMAN BEHAVIOR 269, 270 (1997).

⁹⁷ *Id.*

⁹⁸ *Id.*

that the ball would follow a curved path upon exiting the tube.⁹⁹ Similarly, another study found that when asked to predict the path of a ball dropped from a moving object, most people incorrectly assume that the ball will drop straight down as opposed to in a forward trajectory.¹⁰⁰ Thus, people may be highly influenced by moving CGEs depicting physical events.

Second, research indicates that as jurors hear the evidence at trial, they construct a plausible narrative that fits the evidence and explains what occurred.¹⁰¹ In other words, jurors use the evidence to construct a story and then choose the verdict most similar to their story.¹⁰² A computer animation presents the jury with a ready-made narrative of the event at issue and, where the scenario is an unfamiliar one, the jury is especially likely to accept it as true.¹⁰³

For example, in a 2006 study entitled, “*The Jury Persuaded (and Not): Computer Animation in the Courtroom*,” the authors compared the effectiveness of animations to traditional diagrams in two mock trials, one involving a plane crash and the other, a car accident.¹⁰⁴ In the plane crash group, participants watched a videotaped simulation of a civil trial resulting from a plane crash.¹⁰⁵ In the case, the pilot was killed after his plane crashed in the woods, not from the crash itself, but from exposure after the electronic locator transmitter (ELT) malfunctioned.¹⁰⁶ The plaintiff argued that the latching mechanism for the ELT was defectively designed, while the defendant argued that the crash was so severe that no latching mechanism could have saved the ELT.¹⁰⁷ In the car accident group, participants watched a simulated wrongful-death trial

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ Dunn et al., *supra* note 93, at 230.

¹⁰² Galves, *supra* note 21, at 191-92.

¹⁰³ Dunn et al., *supra* note 93, at 230.

¹⁰⁴ *Id.* at 228.

¹⁰⁵ *Id.* at 232.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.*

resulting from a car accident in which the decedent's car was broadsided by a semi-truck.¹⁰⁸ The plaintiff argued that the defendant was speeding and that had he been traveling at or below the speed limit, the decedent would have safely completed his turn.¹⁰⁹ The defendant argued that the truck driver was not speeding.¹¹⁰ In each group, participants were placed in one of four cells: (1) plaintiff animation; (2) plaintiff diagram; (3) defendant animation; (4) defendant diagram.¹¹¹

As the authors hypothesized, the animation significantly influenced verdicts in the plane crash trial, but not in the car accident trial.¹¹² Specifically, in the plane crash scenario, a situation with which most people are unfamiliar, when both plaintiff and defendant presented diagrams, 32% of participants found for plaintiff. When the plaintiff presented an animation, and the defendant presented a diagram, however, 68% of participants found in favor of the plaintiff.¹¹³ In the car accident scenario, which is easier for most people to visualize than a plane crash, the animation was not significantly more effective than the diagram.¹¹⁴ This supports the hypothesis that an animation depicting an unfamiliar situation can persuade jurors in favor of the side presenting the display. Where the animation depicts a situation with which participants are already familiar, however, it does not appear to be substantially more persuasive than a more simple visual aid, such as a diagram.¹¹⁵

C. Courtroom Technology: Other Benefits

In addition to its persuasive impact and enhanced juror comprehension and retention of the information presented, using courtroom technology to visually present one's case has many

¹⁰⁸ *Id.* at 237.

¹⁰⁹ *Id.* at 238.

¹¹⁰ *Id.*

¹¹¹ *Id.* at 231, 238.

¹¹² *Id.* at 242.

¹¹³ *Id.* at 233.

¹¹⁴ *Id.* at 242.

¹¹⁵ *Id.*

other benefits. For one, technology can shorten the overall length of trials.¹¹⁶ The use of evidence presentation technology is estimated to save anywhere between twenty-five and fifty-percent of the time otherwise necessary to present a case.¹¹⁷

Even more, the attorney who has a mastery of courtroom technology and is able to retrieve documents or other pieces of evidence quickly, rather than digging through piles of paper, will appear both competent and prepared.¹¹⁸ Essentially, by using courtroom technology to visually present your case, “[y]ou are sending several messages to the jury: that this case is important enough to warrant the best technology, that you are doing all you can to help the jury understand the case, and that you are a competent professional.”¹¹⁹ Moreover, attorneys must remember that some jurors may even expect them to use technology in the courtroom. Many of the people sitting on the jury either own or use a computer every day. As such, an attorney’s failure to use technology in presenting their case, especially if opposing counsel has done so, will not only be noticed by the computer-users in the jury, but they may also “second-guess” the attorney for failing to do what they could have to make things more clear.¹²⁰

Finally, courtroom technology can enable an attorney to control the room. As evidenced by the prosecution’s “seamless performance” in the Michael Skakel murder trial, using courtroom technology to present one’s case enables the attorney “to clarify, to captivate, and to convince.”¹²¹ That is, “[c]ounsel decides when the jurors look at the screen, and when they focus on him or her.”¹²² Indeed, “some of the most powerful moments in court occur just after

¹¹⁶ GALLANT ET AL., *supra* note 17, at 361; LAWYER’S GUIDE, *supra* note 11, at 49 (“[N]early all judges who use technology agree that it cuts trial time by a significant amount.”)

¹¹⁷ Lederer, *supra* note 8, at 43.

¹¹⁸ GALLANT ET AL., *supra* note 17, at 361; *see also* ANN E. BRENDEN & JOHN D. GOODHUE, THE LAWYER’S GUIDE TO CREATING PERSUASIVE COMPUTER PRESENTATIONS 28 (2005).

¹¹⁹ BRENDEN & GOODHUE, *supra* note 118, at 28.

¹²⁰ *Id.*

¹²¹ Carney & Feigenson, *supra* note 1, at 24.

¹²² GALLANT ET AL., *supra* note 17, at 361.

technology has been used—when the screen goes dark—and the attention shifts back to counsel and his or her story.”¹²³

III. COURTROOM TECHNOLOGY AND THE MODEL RULES OF PROFESSIONAL CONDUCT

Because of the many benefits of using courtroom technology to present one’s case, the use of courtroom technology will only continue to rise. Indeed, the adversary process itself will likely lead to this result as lawyers realize that an unwillingness to take advantage of courtroom technology, especially when one’s opponent does, is an unacceptable risk.¹²⁴ Two important questions necessarily follow. First, what ethical considerations are implicated as technology-augmented litigation becomes the norm? And second, do the current Model Rules adequately address those ethical concerns?

A. The ABA Model Rules of Professional Conduct

1. *The Road to the Current Model Rules*

A long history precedes the current version of the Model Rules. Indeed, its lineage stretches all the way back to 1908, when the ABA approved its first set of Canons of Professional Ethics.¹²⁵ By the 1960s, many lawyers felt that the Canons no longer provided sufficient guidance for modern law practice.¹²⁶ In response, and as is still the process today, the ABA created a special committee to evaluate the Canons in light of the needs of lawyers at the time.¹²⁷ That committee, known as the Wright Committee, produced the ABA Model Code of Professional Responsibility, which was adopted by the ABA in 1969.¹²⁸

¹²³ *Id.*

¹²⁴ Lederer, *supra* note 47, at 830.

¹²⁵ RONALD D. ROTUNDA, PROFESSIONAL RESPONSIBILITY: A STUDENT’S GUIDE 3-4 (2001).

¹²⁶ GRACE M. GIESEL, MASTERING PROFESSIONAL RESPONSIBILITY 4 (2009).

¹²⁷ *Id.*; see also LISA G. LERMAN & PHILIP G. SCHRAG, ETHICAL PROBLEMS IN THE PRACTICE OF LAW 28 (2d ed. 2008). Generally, when a committee is appointed to address changes to the ethical rules, the committee will draft a new rule or a set of amendments to the existing rules, which is then debated and either approved or declined by the ABA’s House of Delegates. LERMAN & SCHRAG, *supra* note 127, at 28. Once the ABA has approved a new rule or

The next set of changes were initiated in 1977, when the ABA created the Kutak Commission.¹²⁹ The Kutak Commission produced the ABA Model Rules of Professional Conduct, which the ABA adopted in 1983.¹³⁰ The Model Rules abandoned the Model Code's format of canons, ethical considerations, and disciplinary rules, for a more restatement-like format of rules with official "comments."¹³¹ Most states eventually adopted the 1983 Model Rules, subject to various non-uniform provisions, but not nearly as quickly as they did with the Model Code.¹³²

As a result of dramatic changes in the practice of law that occurred during the 1980s and 90s, especially in connection with the increase in interstate and international law practice, in 1997 the ABA created the Ethics 2000 Commission to once again evaluate the Model Rules.¹³³ Between 2001 and 2003, the ABA adopted most of the Ethics 2000 Commission's recommendations, amounting to an extensive revision to the Model Rules.¹³⁴ Most states have now adopted all or most of these changes, with some variations, although some states are still in the process of considering whether to do so.¹³⁵

2. *The ABA Commission on Ethics 20/20*

In 2009, the ABA created the Commission on Ethics 20/20 ("the Commission") to assess the adequacy of the current Model Rules in light of modern technological advances and the

amendment, it is still ultimately left to each individual state's highest court to determine whether to adopt the change. *Id.*

¹²⁸ GIESEL, *supra* note 126, at 4.

¹²⁹ *Id.* at 5.

¹³⁰ *Id.*

¹³¹ *Id.*; ROTUNDA, *supra* note 125, at 6-7.

¹³² LERMAN & SCHRAG, *supra* note 127, at 40.

¹³³ *Id.*

¹³⁴ *Id.*; GIESEL, *supra* note 126, at 5.

¹³⁵ GIESEL, *supra* note 126, at 5; LERMAN & SCHRAG, *supra* note 127, at 40-41.

increased globalization of the practice of law.¹³⁶ The Commission's work is expected to take three years, with the first year dedicated to research, and the second and third years dedicated to developing and vetting proposed policies and principles and presenting them to the ABA's House of Delegates for approval.¹³⁷

The Commission has identified three focus areas:

(1) issues that arise because U.S. lawyers are regulated by states but work increasingly across state and international borders; (2) issues that arise in light of current and future advances in technology that enhance virtual cross-border access; and (3) particular ethical issues raised by changing technology.¹³⁸

Thus, the effects of technological advances on the ethical duties of lawyers is clearly one of the Commission's primary focuses. Courtroom technology, however, is not specifically set out as an area of concern in the Preliminary Issues Outline.¹³⁹ The most relevant topic in the Preliminary Issues Outline is "Competence: Does the rapid pace of technological evolution raise issues relating to lawyer competence."¹⁴⁰ Because technology-augmented litigation is steadily becoming the norm for modern courtroom practice, the Commission should consider, as part of its technology discussion, whether the Model Rules adequately cover the use of courtroom technology.

B. Courtroom Technology under the Current Rules

The Model Rules do not specifically address technology or how technological advances affect a lawyer's ethical duties. The lack of an explicit reference to technology notwithstanding, however, technological advances can affect a lawyer's duties even under the current Model

¹³⁶ ABA COMM'N ON ETHICS 20/20, PRELIMINARY ISSUES OUTLINE 1 (2009) [hereinafter PRELIMINARY ISSUES OUTLINE], available at <http://www.abanet.org/ethics2020/outline.pdf>.

¹³⁷ Message from Commission on Ethics 20/20 Co-Chairs Jamie S. Gorelick and Michael Traynor, <http://www.abanet.org/ethics2020/chairs.html> (last visited Mar. 10, 2010).

¹³⁸ PRELIMINARY ISSUES OUTLINE, *supra* note 136, at 2.

¹³⁹ *See id.* at 3-9.

¹⁴⁰ *Id.* at 8.

Rules. Specifically, when it comes to technology-related issues, the duties of confidentiality, competence, and diligence are the duties most often implicated.

For example, when sending an electronic document to third-parties, lawyer may need to consider whether they are also transmitting confidential client-information as metadata. Metadata, which accompanies electronic documents, can reveal information regarding the authorship of a document and changes made during drafting including, among other things, deletions.¹⁴¹ Some state bar opinions have held that, in order to avoid violating the duties of competence and confidentiality, attorneys must take reasonable steps to safeguard against revealing such information.¹⁴² Some states have also held that lawyers may not ethically attempt to “mine” for such data when receiving electronic documents.¹⁴³ Similarly, the duties of confidentiality, competence, and diligence have been implicated in other technology-related areas such as e-discovery¹⁴⁴, switching to a paperless filing system¹⁴⁵, and conducting online research¹⁴⁶.

The current Model Rules that might be implicated with regard to the use of courtroom technology include: (1) Rule 1.1, requiring competence; (2) Rule 1.3, requiring diligence; and (3) Rule 1.5, requiring reasonable fees. Although all three rules *could* be interpreted so as to cover courtroom technology, an examination of each reveals that many questions are left unanswered.

¹⁴¹ Prof'l Ethics of the Fl. Bar, Ethics Op. 06-2 (2006), available at <http://www.floridabar.org/tfb/tfbetopin.nsf/SearchView/ETHICS,+OPINION+06-2> (last visited Mar. 10, 2010).

¹⁴² See e.g., *Id.*; N.Y. State Bar Ass'n, Ethics Op. 782 (2004) (holding that a lawyer must take reasonable care to ensure that confidential information is not disclosed when sending electronic documents and that “[r]easonable care may, in some circumstances, call for the lawyer to stay abreast of technological advances and the potential risks of transmission in order to make an appropriate decision with respect to the mode of transmission”).

¹⁴³ See e.g., N.Y. State Bar Ass'n, Ethics Op. 749 (2001); Prof'l Ethics of the Fl. Bar, Ethics Op. 06-2 (2006).

¹⁴⁴ See generally Lauren Katz, *A Balancing Act: Ethical Dilemmas in Retaining E-Discovery Consultants*, 22 GEO. J. LEGAL ETHICS 929 (2009); Ralph C. Losey, *Lawyers Behaving Badly: Understanding Unprofessional Conduct in E-Discovery*, 60 MERCER L. REV 983 (2009).

¹⁴⁵ See e.g., VSB Comm. on Legal Ethics, Ethics Op. 1818 (2005) (“[W]hen making decisions as to what to keep in the file and in what form, while an attorney may consider storage expediency, those decisions must be made such that the attorney’s duties of competence, diligence, and communication are not compromised.”); N.J. Sup. Ct. Advisory Comm. on Prof'l Ethics, Ethics Op. 701 (2006).

¹⁴⁶ PAUL W. VAPNEK ET AL., CAL. PRAC. GUIDE: PROF'L RESP. § 6:93-94 (“Performing Services “diligently” may require certain resources and capabilities beyond legal knowledge and skill. . . . Lawyers cannot ignore technological advancements such as computerized legal research and computer-accessible libraries.”).

1. *The Duty of Competence*

According to Model Rule 1.1, competence “requires the legal knowledge, skill, thoroughness and preparation reasonably necessary for the representation.”¹⁴⁷ The comments indicate that in order to maintain the knowledge and skill required for competent representation, “a lawyer should keep abreast of changes in the law *and its practice*.”¹⁴⁸ Indeed, even the ABA’s own website indicates that “[c]ompetence in using technology can be a requirement of practicing law.”¹⁴⁹ Thus, one could argue that as using courtroom technology to visually display evidence becomes the standard, the duty of competence will require lawyers to adjust accordingly. That is, at a minimum, lawyers should have a general understanding of how to use courtroom technology in presenting their cases.¹⁵⁰ Of course, such a duty, if there is one, would also require an understanding of the evidentiary requirements for admissibility for both the demonstrative and substantive uses of CGEs.

The comments to Model Rule 1.1 also indicate that the requisite thoroughness and preparation “are determined in part by what is at stake.”¹⁵¹ That is, major or complex litigation may require more preparation and treatment to satisfy the competency requirement. Thus, a complex patent or similar case that requires the jury to understand a detailed scientific process may require more preparation and treatment than an uncomplicated contract dispute. If the use of a simple visual aid to explain the scientific process involved would greatly improve the jury’s

¹⁴⁷ MODEL RULES OF PROF’L CONDUCT R. 1.1 (2004).

¹⁴⁸ *Id.* at R. 1.1 cmt.6 (emphasis added).

¹⁴⁹ ABA, LEGAL ETHICS AND TECHNOLOGY: TECHNOLOGICAL COMPETENCE, <http://www.abanet.org/tech/ltrc/research/ethics/competence.html>.

¹⁵⁰ See Lederer, *supra* note 8, at 44 (“Lawyers have a general professional ethical duty to provide competent representation. If that duty were to extend to competence in the use of courtroom technology—and this author would urge that it does—counsel would have an affirmative duty to learn how to be at least an adequately competent high-tech trial lawyer when attempting to use that technology.”).

¹⁵¹ MODEL RULES OF PROF’L CONDUCT R. 1.1 cmt.5.

ability to understand a pivotal issue in the case, would the duty of competent representation require the lawyer to use one?

Assuming that the duty of competence does entail an obligation to be even minimally competent in the use of courtroom technology, further questions still arise. One example would be whether and to what extent the lawyer who does use courtroom technology to present her case must also be prepared in the event that technology fails.¹⁵² If an evidence camera stops working in the middle of trial, for example, because the light bulb failed, must the “adequately prepared” attorney have a spare light bulb on hand, acetate transparencies ready to place on an overhead projector instead, or paper copies of the exhibits available to pass to the jurors?¹⁵³ If the courtroom itself was equipped with the camera, can the attorney depend on the court to also supply a spare bulb?¹⁵⁴ If the attorney intends to use a simple PowerPoint presentation, would simply bringing an extra copy of the presentation on a CD or flash drive be sufficient? Or should the attorney also bring a copy of the Microsoft software program that would be necessary to view it on another computer? Should an attorney using her own laptop for presentation purposes be prepared with a second laptop in the event the first laptop crashes? In other words, even if one believes that the duty of competence requires lawyers to be capable of using courtroom technology, which is uncertain under the current Model Rules, the question of whether and to what extent the “thoroughness and preparation” element of that duty requires lawyers to be prepared for technology failures is also open for discussion.

¹⁵² See *LAWYER’S GUIDE*, *supra* note 11, at 164 (“Lawyers should focus on what will happen if the equipment fails. Equipment failures are not usually a problem once the equipment is running. . . . Almost all failures occur on the first day the equipment is used, generally because someone failed to connect cabling properly.”).

¹⁵³ See *id.* at 59, 164 (describing both transparencies and paper copies as possible backup arrangements for evidence camera failures and suggesting that “the prudent lawyer will have a spare bulb within reach” if she supplied the evidence camera herself).

¹⁵⁴ See *id.* at 59.

2. *The Duty of Reasonable Diligence*

Whereas the Model Code explicitly included a duty of zealous representation, the current Model Rules have reshaped that duty into a combination of the duties of competence and diligent representation.¹⁵⁵ Because of fears that the term “zealous” could slip into “overzealous,” no Model Rule contains an outright duty of zeal.¹⁵⁶ The comments, however, do refer to an obligation of zealous representation: (1) “A lawyer must also act with . . . zeal in advocacy upon the client’s behalf”¹⁵⁷; (2) “[W]hen an opposing party is well represented, a lawyer can be a zealous advocate on behalf of a client and at the same time assume that justice is being done”¹⁵⁸; and (3) “[T]he lawyer’s obligation zealously to protect and pursue a client’s legitimate interests, within the bounds of the law, while maintaining a professional, courteous and civil attitude toward all persons involved in the legal system.”¹⁵⁹

Considering all three of these comments and the many benefits to using courtroom technology to visually present one’s case, one might assume that diligent representation requires attorneys to visually present their cases using courtroom technology, especially where opposing counsel is doing so. To be sure, when surveyed, many attorneys indicate that if opposing counsel is using litigation support software, they would be inclined to do so as well.¹⁶⁰ One defense attorney, after unsuccessfully objecting to the prosecution’s use of a computer slide show in closing arguments, confessed to reporters that his own arguments had appeared “slipshod in comparison.”¹⁶¹ And, as previously discussed, many computer-savvy jurors may

¹⁵⁵ RONALD D. ROTUNDA ET AL., *LEGAL ETHICS: THE LAWYER’S DESKBOOK ON PROF’L RESPONSIBILITY* 18 (2008).

¹⁵⁶ *Id.*

¹⁵⁷ MODEL RULES OF PROF’L CONDUCT R. 1.3 cmt.1 (2004).

¹⁵⁸ MODEL RULES OF PROF’L CONDUCT PMBL. cmt.8 (2004).

¹⁵⁹ MODEL RULES OF PROF’L CONDUCT PMBL. cmt.9 (2004).

¹⁶⁰ Epstein, *supra* note 57, at 741.

¹⁶¹ Lederer, *supra* note 47, at 833.

even *expect* attorneys to use technology in presenting their cases.¹⁶² The comments to Model Rule 1.3's duty of reasonable diligence, however, also provide that lawyers are "not bound . . . to press for every advantage that might be realized for a client."¹⁶³ This statement alone makes it difficult to argue that the current diligence requirement includes a duty to use courtroom technology to present one's case, even in the situation where one's opponent is doing so.

3. *The Duty to Keep Fees Reasonable*

The duties of competence and diligence must be balanced against the countervailing duty to keep fees reasonable, which is set out in Model Rule 1.5.¹⁶⁴ The rule itself requires that lawyers' fees be reasonable and sets out a non-exclusive list of factors to consider. Thus, there is substantial room for discretion in determining a proper fee.¹⁶⁵ Essentially, it is a balancing process under which attorneys must avoid leaning too far toward minimizing fees, and thereby potentially violating the duties of diligence and competence, nor leaning too far toward zealous representation, and possibility violating the duty to minimize fees.¹⁶⁶

When it comes to courtroom technology, it is a question of balancing the cost and effectiveness of a given evidence display technology or particular CGE. For example, because moving CGEs, such as animations and simulations, can cost upwards of \$5,000 to produce, attorneys must have an adequate knowledge of when and why one would want to use such evidence.¹⁶⁷ Some potential guidelines that have been suggested by commentators include the following: (1) whether your case involves a risk of exposure in excess of \$500,000; (2) whether your case creates a "story" that should be presented clearly; (3) whether your case hinges in

¹⁶² See *supra* text accompanying notes 119 and 120.

¹⁶³ MODEL RULES OF PROF'L CONDUCT R. 1.3 cmt.1 (2004).

¹⁶⁴ MODEL RULES OF PROF'L CONDUCT R. 1.5 (2004).

¹⁶⁵ LERMAN & SCHRAG, *supra* note 127, at 487.

¹⁶⁶ Katz, *supra* note 144, at 941.

¹⁶⁷ Laura Wilkinson Smalley, Annotation, *Establishing the Foundation to Admit Computer-Generated Evidence as Demonstrative or Substantive Evidence*, 57 AM. JUR. PROOF OF FACTS 3D 455 (2000).

causation; (4) whether your case involves complex expert testimony; and (5) whether your opponent is using an animation or simulation, which you should attack with one of your own.¹⁶⁸ More simple CGEs, on the other hand, such as static or enhanced images, can be used much more frequently and cost-effectively, especially where the courtroom itself is equipped with the evidence display technology. Even if the courtroom itself is not equipped, most of the basic evidence display technologies, such as evidence cameras and digital projectors, can be purchased or even rented at a relatively low cost.¹⁶⁹

C. Considerations for the ABA Commission on Ethics 20/20

There are numerous benefits to using courtroom technology to visually present one's case: increased juror comprehension and retention of the information presented, increased persuasive power, increase efficiency, the appearance of competence and preparedness, and the ability to control the room. As such, using courtroom technology will soon be, if it is not already, standard practice in modern litigation. Therefore, as part of its technology discussions, the Commission should consider the use of courtroom technology specifically and whether the Model Rules themselves, or at least their comments, need to be amended to better address it.

Of the three rules discussed that might relate to courtroom technology, the fee issue is the probably the most sufficiently addressed under the current Model Rules. This is so simply because the rule itself does not impose a "bright line" fee structure, but rather leaves room for discretion. Thus, whether the effectiveness of using a particular type of courtroom technology is valid justification for the potential increase in the attorney's fee is also subject to discretion. The duties of competent and diligent representation, on the other hand, could be read either way. That is, *perhaps* a lawyer's duties of competent and diligent representation require that she be

¹⁶⁸ *Id.*

¹⁶⁹ LAWYER'S GUIDE, *supra* note 11, at 53.

familiar with how to use courtroom technology and when and why one should do so, but perhaps not. Because of clear message of the comments to Model Rule 1.3 on diligence—that lawyers do *not* have an ethical obligation to “press for every advantage that might be realized for a client”¹⁷⁰—it is unlikely that courtroom technology can be addressed under that rule, short of deleting that comment altogether. Thus, the real issue here lies in the duty of competence and its affect on the use of courtroom technology.¹⁷¹

Specifically, as part of its technology discussion, the Commission should consider, first, whether lawyers have an ethical obligation to be minimally competent in the use of courtroom technology when advocating for their clients, which this author would suggest they do, and second, whether the current Model Rule on competence adequately expresses that duty, which this author would suggest it does not. It is not necessary, however, to drastically reword Model Rule 1.1 to make the duty clear. Indeed, an additional comment to the rule would be more than sufficient. A possible starting point for discussion is the following:

Maintaining the requisite knowledge and skill necessary for competent representation includes a duty to keep abreast of technological advances that significantly affect the practice of law. For example, in certain circumstances, lawyers may have an ethical obligation to use courtroom technology in advocating for their clients and to be competent in the use of technology when doing so.

The structure of a comment like this allows not only for courtroom technology to be addressed, but other areas in which technology has affected the practice of law as well. That is, other “for example” sentences could follow, further clarifying how and in what circumstances technology shapes the duty of competence.

¹⁷⁰ MODEL RULES OF PROF'L CONDUCT R.1.3 cmt. 1 (2004).

¹⁷¹ See Epstein, *supra* note 57, at 741 (“[A]s more attorneys become familiar with courtroom technology, future changes to the Model Rules may be required to tackle the ethical concerns relating to courtroom presentation of evidence.”).

Finally, regardless of whether the Commission modifies the Model Rules to address courtroom technology, trial lawyers must still consider this issue even in light of the rules as they are today. That is, trial lawyers need to apply their current understanding of the duties of competence, diligence, and reasonable fees to this new area of the law. Only those lawyers who have done so will be adequately prepared to defend themselves in the event their compliance with these obligations is ever challenged for failing to utilize courtroom technology in advocating for their clients.¹⁷²

CONCLUSION

As trial attorneys become aware of the many benefits to using courtroom technology in presenting their cases, technology-augmented litigation will become standard practice. As such, the Model Rules should address the ethical duties of attorneys with regard to the use of courtroom technology, even if only to clarify that a minimal competence in the use of courtroom technology is, in fact, an ethical obligation for all trial attorneys. Courtroom technology should, therefore, be considered by the Commission as part of its discussions on modern technology and the practice of law.

¹⁷² Cf. DALE M. CENDALI ET AL., PRACTISING LAW INST., POTENTIAL ETHICAL PITFALL IN ELECTRONIC DISCOVERY 109 (2007) (explaining that lawyers should apply the well-established ethical rules to the area of e-discovery, for which there isn't explicit ethical guidance, "as parties who are prepared and take reasonable steps to comply with their [ethical] obligations will be in a better position to defend their efforts" with regard to e-data than parties who fail to do so).