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Beyond the Information Age: The Duty of Technology Competence in the Algorithmic Society

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BEYOND THE INFORMATION AGE: THE DUTY OF TECHNOLOGY COMPETENCE IN THE ALGORITHMIC SOCIETY

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I. INTRODUCTION

There is no turning back; technology is now a ubiquitous reality in the everyday practice of law. The American Bar Association (ABA) recognized this reality when it amended the ABA Model Rules of Professional Conduct to include a Duty of Technology Competence as a comment to the Duty of Competence. The Duty of Technology Competence requires lawyers to keep abreast of "changes in the law and its practice, including the benefits and risks associated with relevant technology." The language of this duty was left purposefully broad to account for technologies today, as well as technologies that have not yet been conceived.

Now that a majority of states have adopted the Duty of Technology Competence as part of their rules of professional conduct, we are starting to understand what this duty entails through the various guidance documents that have been released. To date, the guidance documents have applied the

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duty mainly to electronic discovery, electronic storage of information, social media, and the cloud.

A technology that has not yet been formally interpreted to apply to the Duty of Technology Competence is the use of algorithms in law. Society, in general, is moving beyond the Information Age to the Algorithmic Society, as we all rely on algorithms to sort big data and provide information as varied as music or shopping preferences to decisions regarding loan applications or medical diagnoses. In law, lawyers are using algorithms to provide relevant results to research inquiries, as well as to assist with making sentencing decisions. But the use of algorithms in law, as society, is generally going unchecked.

And there are problems with blindly relying on algorithms because they lack transparency in generating results. With this lack of transparency, lawyers must be extra vigilant in ethically relying on these results in the face of machine learning bias or other. As the "Google Generation" (those born in 1993 and after) enters law school and becomes practicing lawyers, the legal academy must work to prepare these students to ethically rely on algorithms. This is particularly important as the research habits of this generation show an apt to rely on algorithms to generate results with little evaluation of those results.

This Article provides an overview of the current Duty of Technology Competence and argues that this ethical duty should extend to the use of algorithms in law. Part II provides an overview of the Duty of Technology Competence, including its development and adoption in a majority of states. Part II also provides context for the current scope of this duty as it pertains to e-Discovery, electronically stored information, social media, and the cloud. Part III discusses the transition from the Information Age to the Algorithmic Society as a foundation to extend the Duty of Technology Competence to the use of algorithms in law. Part III goes on to discuss how the Duty of Technology Competence will apply to the use of algorithms with a short discussion of user habits and the perils of blindly relying on algorithms. Part IV concludes with practical tips for incorporating the competent use of algorithms into the law school curriculum to prepare ethical, practice-ready lawyers.

II. THE DUTY & SCOPE OF TECHNOLOGY COMPETENCE

One of the most notable changes to a lawyer's professional responsibility rules was the creation of the Duty of Technology Competence in 2012. This duty is found in Comment 8 to Model Rule 1.1 dealing with competence. According to Comment 8, the new rule requires a competent

lawyer to keep abreast of changes in the law and its practice, including the benefits and risks associated with relevant technology.[1]

The Duty of Technology Competence was created in response to the rapid impact of technology on the practice of law, and legal tech expert Robert Ambrogi has called this new duty a "sea change" for the legal profession.[2]

A. The Evolving Duty of Competence

From the early days of the legal profession, the notion of a "competent" lawyer has focused on the lawyer's knowledge of the law and ability to represent a client.[3] More recently, however, technology has rendered this interpretation of competence outdated.[4]

In response to technology's impact on law,

> [i]n 2009, the ABA president appointed the Ethics 20/20 Commission to conduct a study to determine how the Model Rules will need to adapt in order to properly reflect the increased use of technology in the practice of law. One of the main purposes of this study was to keep the Model Rules up-to-date in order to help firms "keep pace in this age of computers, technology, and the [i]nternet." After the conclusion of the three-year study, the ABA accepted six proposed amendments to the Model Rules. One of the accepted amendments was a revision to Comment 8 of Model Rule 1.1, a rule [that] requires lawyers to provide competent representation. The revision addresses the influence that technology has on the legal

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1. MODEL RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (AM. BAR ASS'N 2016).

2. Robert Ambrogi, *New ABA Ethics Rule Underscores What EDD Lawyers Should Already Know: There's No Hiding from Technology*, CATALYST REPOSITORY SYS. (Aug. 16, 2012), https://catalystsecure.com/blog/2012/08/new-aba-ethics-rule-underscores-what-edd-lawyers-should-already-know-theres-no-hiding-from-technology/.

3. *See, e.g.*, San Diego Cty. Bar Ass'n, Legal Ethics Comm., Formal Op. 2012-1 (2012); Steven M. Puiszis, *A Lawyer's Duty of Technological Competence*, AM. BAR ASS'N, https://www.americanbar.org/content/dam/aba/events/professional_responsibility/2017%20Meetings/Conference/conference_materials/session4_information_governance/puiszis_lawyers_duty_technological_competence.authcheckdam.pdf (last visited Feb. 24, 2018).

4. *See, e.g.*, San Diego Cty. Bar Ass'n, Legal Ethics Comm., Formal Op. 2012-1 (2012); Puiszis, *supra* note 3, at 1.

> profession and brings to light the fact that attorneys need to keep technology in mind in order to provide competent representation.[5]

Subsequently, the ABA Model Rules of Professional Conduct were amended in 2012 to state that a lawyer's duty of competence now also requires keeping "abreast of changes in the law and its practice, including the benefits and risks associated with relevant technology."[6]

More specifically, the ABA's House of Delegates voted to amend Comment 8 to Model Rule 1.1, which pertains to competence, to read as follows[7]:

> Maintaining Competence
>
> To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, *including the benefits and risks associated with relevant technology*, engage in continuing study and education and comply with all continuing legal education requirements to which the lawyer is subject.[8]

The amended language found in Comment 8 is amorphous. This vague language was purposeful, as the Chief Reporter of the ABA Commission on Ethics 20/20—the Commission that was responsible for the amended language—explained, "the specific skills lawyers will need in the decades ahead are difficult to imagine."[9] And "the ABA made clear that the amended comment was to remind attorneys that providing competent representation includes keeping up with technological advancements."[10] "Although the comment does not affirmatively impose any new obligations on lawyers," it

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5. Lauren Kellerhouse, Note, *Comment 8 of Rule 1.1: The Implications of Technological Competence on Investigation, Discovery, and Client Security*, 40 J. LEGAL PROF. 291, 292–93 (2016) (quoting Ronald D. Rotunda, *Applying the Revised ABA Model Rules in the Age of the Internet: The Problem of Metadata*, 42 HOFSTRA L. REV. 175, 176 (2013)).

6. MODEL RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (AM. BAR ASS'N 2016).

7. Robert Ambrogi, *28 States Have Adopted Ethical Duty of Technology Competence*, LAWSITES (Mar. 16, 2015), http://www.lawsitesblog.com/2015/03/11-states-have-adopted-ethical-duty-of-technology-competence.html.

8. MODEL RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (AM. BAR ASS'N 2016) (emphasis added); *see* Ambrogi, *supra* note 7.

9. Puiszis, *supra* note 3, at 1.

10. Kellerhouse, *supra* note 5, at 293.

does act as a reminder that providing competent representation includes adapting to technological changes.[11]

Since the amendment, there has been little guidance interpreting the amorphous language of the duty. Given that this falls under the Duty of Competence, however, the foundation of technology competence means, in part, that lawyers are now "required to take reasonable steps to protect their clients from ill-conceived uses of technology."[12]

From this foundation, the concept of technology competence is "frequently thought of encompassing the protection of information in a lawyer or law firm's possession from being inadvertently disclosed, accessed or acquired by third parties."[13] That is certainly part of it, but the new Duty of Technology Competence "is far broader than simply protecting client information or cyber security."[14] As noted, "these seemingly simple nine new words have significantly expanded the practical scope of what today's ethical lawyer must understand and confront."[15]

B. State-Adopted Rules

The amended language of the Model Rules of Professional Conduct provides guidance to the states to formulate their own rules of professional conduct.[16] But each state, through its rule-setting body, must first adopt the model rule for it to apply to lawyers in that jurisdiction. In doing so, "each state is free to adopt, reject, ignore or modify the Model Rules."[17]

To date, thirty-one states have adopted the Duty of Technology Competence by amending the respective Duty of Competence. These states are: Arizona, Arkansas, Colorado, Connecticut, Delaware, Florida, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Minnesota, Missouri, Nebraska, New Hampshire, New Mexico, New York, North

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11. *Id.*

12. Anthony E. Davis, *The Ethical Obligation To Be Technologically Competent*, N.Y. L.J. (Jan. 8, 2016, 3:00 AM), https://www.law.com/newyorklawjournal/almID/1202746527203/the-ethical-obligation-to-be-technologically-competent/.

13. *See, e.g.*, State Bar of Ariz., Ethics Op. 09-04 (2009) (explaining Rule 1.1's competence requirement "appl[ies] not only to a lawyer's legal skills, but also generally to 'those matters reasonably necessary for the representation'").

14. *See, e.g.*, *id.*; Puiszis, *supra* note 3.

15. Randy L. Dryer, *Litigation, Technology & Ethics: Teaching Old Dogs New Tricks or Legal Luddites Are No Longer Welcome in Utah*, 28 UTAH B.J. 12, 13 (2015).

16. Ambrogi, *supra* note 7.

17. *Id.*

Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Tennessee, Utah, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.[18]

Of the thirty-one states that have adopted a Duty of Technology Competence, twenty-five have adopted the exact language found in the Model Rule.[19] The remaining states have adopted the Duty of Technology Competence with minor variations that help further interpret the duty or create a stronger ethical obligation. New York, Colorado, West Virginia, and Florida, for example, have added additional specificity to their adopted rules.

New York adopted a variation of the duty by specifying that a lawyer should "keep abreast of the benefits and risks associated with technology the lawyer uses to provide services to clients or to store or transmit confidential information."[20] This variation is more specific in that New York lawyers

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18. ARIZ. RULES OF PROF'L CONDUCT r. 1.1 cmt. 6 (STATE BAR OF ARIZ. 2015); ARK. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (ARK. SUP. CT. 2014); COLO. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (COLO. BAR ASS'N 2016); CONN. RULES OF PROF'L CONDUCT r. 1.1 cmt. 6 (CONN. SUP. CT. 2013); DEL. LAW. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (DEL. SUP. CT. 2013); RULES REGULATING FLA. BAR r. 4-1.1 cmt. 8 (THE FLA. BAR 2016); IDAHO RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (IDAHO STATE BAR 2014); ILL. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (ILL. SUP. CT. 2015); IND. RULES OF PROF'L CONDUCT r. 1.1 cmt. 6 (IND. SUP. CT. 2018); IOWA RULES OF PROF'L CONDUCT r. 32:1.1 cmt. 8 (IOWA STATE BAR ASS'N 2015); KAN. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (KAN. SUP. CT. 2014); KY. RULES OF PROF'L CONDUCT r. 3.130(1.1) cmt. 6 (KY. SUP. CT. 2018); MASS. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (MASS. SUP. JUD. CT. 2015); MINN. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (MINN. SUP. CT. 2015); MO. RULES OF PROF'L CONDUCT r. 4-1.1 cmt. 6 (SUP. CT. MO. 2017); NEB. RULES OF PROF'L CONDUCT § 3-501.1 cmt. 6 (NEB. SUP. CT. 2017); N.H. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (N.H. SUP. CT. 2015); N.M. RULES OF PROF'L CONDUCT r. 16-101 cmt. 9 (STATE BAR OF N.M. 2013); N.Y. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (N.Y. STATE BAR ASS'N 2015); N.C. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (N.C. BAR ASS'N 2014); N.D. RULES OF PROF'L CONDUCT r. 1.1 cmt. 5 (N.D. SUP. CT. 2015); OHIO RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (OHIO SUP. CT. 2015); OKLA. RULES OF PROF'L CONDUCT r. 1.1 cmt. 6 (OKLA. SUP. CT. 2016); PA. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (PA. SUP. CT. 2013); TENN. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (TENN. SUP. CT. 2017); UTAH RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (UTAH SUP. CT. 2015); RULES OF INTEGRATION OF THE VA. STATE BAR r. 1.1 cmt. 6 (VA. BAR ASS'N 2016); WASH. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (WASH. SUP. CT. 2016); W. VA. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (W. VA. STATE BAR 2014); WIS. RULES OF PROF'L CONDUCT FOR ATTORNEYS r. 20:1.1 cmt. 8 (WIS. SUP. CT. 2016); WYO. RULES OF PROF'L CONDUCT (WYO. SUP. CT. 2014); *see* Ambrogi, *supra* note 7.

19. The following twenty-five states have adopted the language of the ABA amendment verbatim: Arizona, Arkansas, Connecticut, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Minnesota, Missouri, Nebraska, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Tennessee, Utah, Virginia, Washington, Wisconsin, and Wyoming. *See* Ambrogi, *supra* note 7.

20. N.Y. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (N.Y. STATE BAR ASS'N 2009).

must be aware of "the dangers of technology particularly when dealing with information storage or providing client services."[21]

Likewise, Colorado's amendment varies from the Model Rule to read: "To maintain the requisite knowledge and skill, a lawyer should keep abreast of changes in the law and its practice, and changes in communications and other relevant technologies, engage in continuing study and education . . . ."[22] Through this language, "Colorado appears to emphasize competence in technological communications as part of an attorney's professional responsibility."[23] Moreover, like other states, Colorado's amendment "cross-references the rule on confidentiality of information, in effect signaling to attorneys that they should be wary of the impact of new technology on the privacy of communications and on modes of information storage."[24]

While New York and Colorado have made their rules more specific in terms of the types of technology competence lawyers should have, other state bars have imposed stronger ethical duties. "For example, West Virginia changed the ABA language of 'a lawyer *should* keep abreast' to 'a lawyer *must* keep abreast.'"[25] By purposefully changing the language from "should" to "must," West Virginia has signaled a stronger ethical duty to its lawyers.

Finally, Florida added more specificity to its rule while also creating a stronger ethical duty. "The Florida bar added language detailing that competent representation could involve retention of 'a non-lawyer advisor with established technological competence in the relevant field,' as well as safeguarding any confidential information 'including electronic transmissions and communications.'"[26] The additional specificity recognizes "the possible need of third-party assistance to fully accommodate clients' technology needs."[27] It is coupled with a stronger ethical duty because, in addition to amending its professional conduct rules, Florida now also

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21. Katy Ho, *Defining the Contours of an Ethical Duty of Technological Competence*, 30 GEO. J. LEGAL ETHICS 853, 864 (2017) (citing Robert Ambrogi, *Two More States Adopt Duty of Technology Competence*, LAWSITES (Nov. 11, 2015), http://www.lawsitesblog.com/2015/11/two-more-states-adopt-duty-of-technology-competence.html).

22. COLO. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (COLO. BAR ASS'N 2016); *see* Ho, *supra* note 21, at 865.

23. Ho, *supra* note 21, at 865.

24. *Id.*

25. *Id.* (citing W. VA. RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (W. VA. STATE BAR 2014)) (emphasis added).

26. *Id.* (citing In re Amendments to Rules Regulating the Fla. Bar 4-1.1 and 6-10.3, 200 So. 3d 1225, 1226 (Fla. 2016)).

27. *Id.*

requires mandatory technology-related CLE credits to ensure that lawyers can comply with the new standard.[28]

As mentioned, most of the states that have adopted the Duty of Technology Competence have done so by adopting the exact language of the Model Rule. A handful of other states have adopted the duty with minor variation. And still other states have not formally adopted the duty at all, only referencing it in an ethics opinion, thus informally incorporating it into the lawyer's ethical duties. This is the approach the State Bar of California took when it relied on Comment 8 to Model Rule 1.1 in reaching its conclusion in a 2015 State Bar ethics opinion. The ethics opinion addressed a lawyer's ethical duties involving the discovery of electronically stored information.[29]

With the minimal guidance found in the text of the rules themselves, lawyers are left to mostly wonder what this new duty encompasses.

C. Guidelines, Advisory Opinions, & Cases Interpreting the Duty

While the outer boundaries of the Duty of Technology Competence have not yet been established, the current interpretations generally apply to electronically stored information and data, e-Discovery, social media, and the cloud.[30] These current interpretations come through the form of guidelines, advisory opinions, and cases interpreting the Duty of Technology Competence.[31] Below is a select sampling of these interpretations that offers the most guidance to date.

A few of the interpreting documents were released before the ABA Model Rules were amended. These documents act as precursors to the duty and provide some guidance on what the duty encompasses. For example, Washington Bar Association Opinion 2215 from 2012 states, "[a] lawyer using [a third-party] service must . . . conduct a due diligence investigation of the provider and its services and cannot rely on lack of technological

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28. *Id.*

29. *See* State Bar of Cal. Standing Comm. on Prof'l Responsibility & Conduct, Formal Op. 2015-193 (2015).

30. *See generally* Kellerhouse, *supra* note 5.

31. *See generally* Stacey Blaustein et al., *Digital Direction for the Analog Attorney—Data Protection, E-Discovery, and the Ethics of Technological Competence in Today's World of Tomorrow*, 22 RICH. J.L. & TECH. 10 (2016) (discussing various ethical rules and guidance pertaining to the Duty of Technology Competence); John O'Neill, *Protecting Living Fossils: Crafting Technology Ethics Standards for the District of Columbia*, 30 GEO. J. LEGAL ETHICS 933 (2017) (discussing various rules and cases interpreting the Duty of Technology Competence).

sophistication to excuse the failure to do so."[32] The opinion goes on to list seven best practices that a lawyer without advanced technological knowledge should perform.[33] Finally, the opinion states,

> [b]ecause the technology changes rapidly, and the security threats evolve equally rapidly, a lawyer using online data storage must not only perform initial due diligence when selecting a provider and entering into an agreement, but must also monitor and regularly review the security measures of the provider. Over time, a particular provider's security may become obsolete or become substandard to systems developed by other providers. [Ultimately, a] lawyer may use online data storage systems to store and back up client confidential information as long as the lawyer takes reasonable care.[34]

The Washington Bar Association opinion shows that a lawyer's ethical duty regarding technology does not stop after initial due diligence. It is an ongoing duty that requires long-term reasonable care.

In addition to the Washington advisory opinion discussing electronically stored information, in 2015, New York released a set of social media guidelines that rely on its amended duty of technology competence.[35] The guidelines note, in pertinent part, that "[a] lawyer has a duty to understand the benefits and risks and ethical implications associated with social media, including its use as a mode of communication, an advertising tool and a means to research and investigate matters."[36]

The guidelines go on to state:

> [a]s indicated by [ABA Rule of Professional Conduct] Rule 1.1, Comment 8, it is important for a lawyer to be current with technology. While many people simply click their agreement to the terms and conditions for use of an [electronic social media] network, a lawyer who uses an [electronic social media] network in his practice should review the terms and conditions, including

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32. Wash. Bar Ass'n Comm. on Prof'l Ethics, Advisory Op. 2215 (2012).

33. *Id.*

34. *Id.*

35. *See* THE SOC. MEDIA COMM. OF THE COMMERCIAL AND FED. LITIG. SECTION, N.Y. STATE BAR ASS'N, SOCIAL MEDIA ETHICS GUIDELINES (2015) [hereinafter GUIDELINES], http://www.nysba.org/workarea/DownloadAsset.aspx?id=47547.

36. *Id.* at 3.

> privacy features—which change frequently—prior to using such a network.[37]

Not only is social media use implicated here, the guidelines also mention conducting research. "If an attorney cannot ascertain the functionality of a website, the attorney must proceed with great caution in conducting research on that particular site."[38]

Lastly, the guidelines state, "[w]hile a lawyer may not delegate his obligation to be competent, he or she may rely, as appropriate, on professionals in the field of electronic discovery and social media to assist in obtaining such competence."[39]

The State Bar of California has also attempted to provide guidance on the Duty of Technology Competence. In 2015, the State Bar of California issued an opinion that provided

> three options from which a lawyer should choose when confronted with unfamiliar technology: (1) become familiar with the technology, (2) consult with or delegate to someone who is familiar with the technology, or (3) decline to represent the client. Although California's hypothetical applies specifically to e-discovery, its conclusions can be read as applying to all of the benefits and risks of technology as defined in comment 8.[40]

Ultimately, these various guidance documents provide additional insight to a lawyer seeking guidance on complying with the Duty of Technology Competence.

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37. *Id.* (quoting ABA Standing Comm. on Ethics & Prof'l Responsibility, Formal Op. 466, at 5–6 (2014)). The guidelines further provide that "[c]ompetence may require understanding the often lengthy and unclear 'terms of service' of a social media platform and whether the platform's features raise ethical issues. It also may require reviewing other materials, such as articles, comments, and blogs posted about how such social media platform actually functions." *Id.* at 3 n.5; *see also* Ass'n of the Bar of the City of N.Y. Comm. on Prof'l & Jud. Ethics, Formal Op. 2012-2, at 2 (2012) [hereinafter Formal Op. 2012-2], https://www2.nycbar.org/pdf/report/uploads/20072303-FormalOpinion2012-02JuryResearchandSocialMedia.pdf.

38. GUIDELINES, *supra* note 35, at 3 (quoting Formal Op. 2012-2, *supra* note 37, at 7).

39. *Id.* at 4.

40. O'Neill, *supra* note 31, at 936–37.

III. THE FUTURE OF THE DUTY IN THE ALGORITHMIC SOCIETY

If this new Duty of Technology Competence seems overwhelming, it is needed more than ever because society will never be less technologically sophisticated than it is today. As we move from the mid-Information Age to the Algorithmic Society, technology will become even more ubiquitous in everyday life and the practice of law, and algorithms will increasingly be used to govern populations.[41]

A. From the Information Age to the Algorithmic Society

Historians are apt to argue about the precise onset of the Information Age. Did it start in the late 1960s with the birth of the internet?[42] Did it start in 1973 with Motorola's first mobile phone?[43] Or did it start with the launch of IBM's first mass-marketed personal computer in 1982?[44] The reality is that it was a combination of all of these events. These events laid the foundation for the Information Age, which has now extended to "the rollout of broadband access, cheap mobile phones, cloud computing, and more recently social media."[45]

The early days of the Information Age were a fairly simple transition of physical products becoming digital.[46] "At first, the pre-[Information] Age evolved slowly. Products became digitized. Photos became bits. Knowledge moved from encyclopedias to Wikipedia. The phone book became an online directory. Printed magazines became websites."[47]

Then society entered the mid-Information Age, which law is just beginning to grasp.[48] "This is a period that straddles the age where digital is just becoming accepted into the mainstream, and the age where digital is

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41. *See, e.g.*, E-mail from Natasha Duarte, Policy Analyst, Ctr. for Democracy & Tech., to James Vacca, Chairman, N.Y.C. Council Comm. (Oct. 16, 2017), https://cdt.org/files/2017/10/NYC-algorithm-hearing-statement-10-16-17.pdf.

42. *See* Barry M. Leiner, et al., *Brief History of the Internet*, INTERNET SOC'Y (1997), https://www.internetsociety.org/internet/history-internet/brief-history-internet/.

43. *See* Zachary Seward, *The First Mobile Phone Call Was Made 40 Years Ago Today*, ATLANTIC (Apr. 3, 2013), https://www.theatlantic.com/technology/archive/2013/04/the-first-mobile-phone-call-was-made-40-years-ago-today/274611/.

44. *See Timeline of Computer History*, COMPUTER HISTORY, http://www.computerhistory.org/timeline/ (last visited Feb. 24, 2018).

45. Paul Hudson, *The Dawning of the Digital Age*, INTERSPERIENCE.COM, http://www.intersperience.com/article_more.asp?art_id=46 (last visited Feb. 24, 2018).

46. *See* Tom Goodwin, *The Three Ages of Digital*, TECHCRUNCH (June 23, 2016), https://techcrunch.com/2016/06/23/the-three-ages-of-digital/.

47. *Id.*

48. *See id.*

fully immersed into our society."[49] This age "represents an age where the BBC won't play certain content in the U.K. because global digital rights have not been cleared. It's where headlines featuring Trump or Apple rule the world, because eyeballs pay the bills."[50]

As we move beyond the mid-Information Age, however, this is the shift "that really changes everything."[51] The concept of digital will move into the background and will be understood as transformative yet irrelevant.[52] "In the post-[Information] Age, digital technology will be a vast, quiet element forming the seamless backbone of life. The internet will be a background utility [like electricity], noticeable only in its absence."[53] It will come to us through "huge multinational [providers] that track [our] every move . . . . [The providers] will be the holders of data and the arbiters of mass behavioral change."[54]

Society will move beyond the abundance of information that defined the Information Age to increasingly rely on algorithms that sort big data in the "Algorithmic Society."

The ubiquitous use of algorithms in society has been explored in books such as *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* by Cathy O'Neil; *Algorithms to Live by: The Computer Science of Human Decisions* by Brian Christian and Tom Griffiths; *Automate This: How Algorithms Took Over Our Markets, Our Jobs, and the World* by Christopher Steiner; *Sensemaking: The Power of the Humanities in the Age of the Algorithm* by Christian Madsbjerg; and *The Master Algorithm: How the Quest for the Ultimate Learning Machine Will Remake Our World* by Pedro Domingos.[55]

Each of these books offers a glimpse into the benefits and risks associated with the use of algorithms. They discuss how algorithms are being used for greater efficiency, sometimes at a significant cost. For

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49. *Id.*
50. *Id.*
51. *Id.*
52. *See id.*
53. *Id.*
54. *Id.*
55. *See* BRIAN CHRISTIAN & TOM GRIFFITHS, ALGORITHMS TO LIVE BY: THE COMPUTER SCIENCE OF HUMAN DECISIONS (2016); PEDRO DOMINGOS, THE MASTER ALGORITHM: HOW THE QUEST FOR THE ULTIMATE LEARNING MACHINE WILL REMAKE OUR WORLD (2015); CHRISTIAN MADSBJERG, SENSEMAKING: THE POWER OF THE HUMANITIES IN THE AGE OF THE ALGORITHM (2017); CATHY O'NEIL, WEAPONS OF MATH DESTRUCTION: HOW BIG DATA INCREASES INEQUALITY AND THREATENS DEMOCRACY (2016); CHRISTOPHER STEINER, AUTOMATE THIS: HOW ALGORITHMS TOOK OVER OUR MARKETS, OUR JOBS, AND THE WORLD (2012).

example, in *Weapons of Math Destruction*, a New York Times Notable Book of 2016, author and mathematician Cathy O'Neil notes that "[i]ncreasingly, the decisions that affect our lives—where we go to school, whether we can get a job or a loan, how much we pay for health insurance—are being made . . ." by machines.[56] She goes on to state "the mathematical models being used today are unregulated and uncontestable even when they are wrong."[57]

Much like the internet as a background utility in the mid-Information Age, so too are algorithms often seen as transformative yet irrelevant in the Algorithmic Society. Algorithms are now working in the background to parse vast amounts of data and recommend important actions. Yet they are often working with little oversight because of their proprietary nature. Because of the high stakes involved, some have called for an "algorithmic social contract," whereby a conceptual framework for the regulation of artificial intelligence (AI) and algorithmic systems is created by a pact between various human stakeholders and mediated by machines.[58]

> But AI advances have also raised many questions about the regulatory and governance mechanisms for autonomous machines and complex algorithmic systems. Some commentators are concerned that algorithmic systems are not accountable because they are black boxes whose inner workings are not transparent to all stakeholders. Others raised concern over people unwittingly living in filter bubbles created by news recommendation algorithms. Others argue that data-driven decision-support systems can perpetuate injustice, because they can also be biased either in their design, or by picking up human biases in their training data. Furthermore, algorithms can create feedback loops that reinforce inequality, for example in the use of AI in predictive policing or creditworthiness prediction, making it difficult for individuals to escape the vicious cycle of poverty.[59]

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56. WEAPONS OF MATH DESTRUCTION, https://weaponsofmathdestructionbook.com/ (last visited Mar. 6, 2018); *see also* O'NEIL, *supra* note 55.

57. WEAPONS OF MATH DESTRUCTION, https://weaponsofmathdestructionbook.com/ (last visited Mar. 6, 2018); *see also* O'NEIL, *supra* note 55.

58. Iyad Rahwan, *Society-in-the-Loop: Programming the Algorithmic Social Contract*, 20 ETHICS INFO. TECH. 5, 6 (2018).

59. *Id.* at 5–6 (citations omitted).

As lawyers increasingly rely on algorithms in the everyday practice of law,[60] the legal profession must take active steps to ensure competent use of algorithms to temper the risks associated with their use. "[I]n chasing the amazing possibilities, the profession must not forget the fundamentals. In our race to use technology to be better, faster and cheaper, we must not forget that the law's effect will always [be] endured by humans . . . . [W]e cannot ignore the danger of a failure of competence."[61]

So, as we move from the mid-Information Age to the Algorithmic Society, lawyers must prepare for the eventualities that befall the use of artificial intelligence and algorithms in the practice of law.[62]

B. The Duty of Technology Competence Applied to Algorithms

The Duty of Technology Competence requires lawyers to keep abreast of "changes in the law and its practice, including the benefits and risks associated with relevant technology."[63] While the duty has not yet been formally interpreted as applying to the use of algorithms in law, a lawyer should understand the benefits and risks associated with the use of algorithms to ensure competent representation.

Lawyers, after all, are in the information business. Information is the foundation of representation, as lawyers rely, in part, on case precedent to determine the law and advocate for a client.[64] This information retrieval is generally now reliant upon algorithms to provide "relevant" results. The list of relevant results provided with relative ease is an absolute benefit of using algorithms in law. It allows for great efficiency, which equates to greater access to justice.[65] However, the problem is how competent it all looks, enticing lawyers to blindly rely on the results.

And it is bound to become an even bigger issue as the Google Generation enters law practice. This generation is generally thought of as

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60. *See* Brian Sheppard, *Incomplete Innovation and the Premature Disruption of Legal Services*, 2015 MICH. ST. L. REV. 1797, 1853, 1857 (2015).

61. Wendy Wen Yun Chang, *Time to Regulate AI in the Legal Profession? (Perspective)*, BIG LAW BUS. (July 12, 2016), https://biglawbusiness.com/time-to-regulate-ai-in-the-legal-profession-perspective/.

62. *See* Goodwin, *supra* note 46.

63. MODEL RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (AM. BAR ASS'N 2016).

64. *See* Morris L. Cohen, *Research Habits of Lawyers*, 9 JURIMETRICS J. 183, 187 (1969).

65. Lindsey Frischer, *How to Leverage Legal Technology and Bridge the Justice Gap*, ROSS INTELLIGENCE (Jan. 9, 2017), https://blog.rossintelligence.com/how-to-leverage-legal-technology-and-bridge-the-justice-gap-3d63f096b32a.

being born after 1993.[66] And there have been some interesting findings about their information behavior. As early as 2008, studies show that "the speed of young people's web searching means that little time is spent in evaluating information, either for relevance, accuracy or authority."[67] Additionally, "[f]aced with a long list of search hits, young people find it difficult to assess the relevance of the materials presented and often print off pages with no more than a perfunctory glance at them."[68] Also, "[y]oung scholars are using tools that require little skill: they appear satisfied with a very simple or basic form of searching."[69] In addition to the user habits of the Google Generation, society in general has become increasingly comfortable with relying on the top results that an algorithm generates. "[R]esearch indicates that over ninety percent of searchers do not go past page one of the search results and over fifty percent do not go past the first three results on page one."[70] These ingrained research habits generally equate with allowing the database algorithms to do the heavy lifting and decide what is relevant.

While there has been little discussion of the research habits of law students' use of algorithms to conduct research, it is likely that law students will fall back on research techniques they know and feel comfortable with.[71] As part of the Google Generation[72] and beyond, it means that these students, unless taught otherwise, will rely heavily on the algorithms to select relevant material after performing basic searches, and they will also spend little time evaluating the results.

Accordingly, the major legal databases, Westlaw and LexisNexis, are now using search algorithms to provide a better user experience. Both vendors released a new search experience in 2010 with the rollout of new interfaces and the search engines behind them.[73] Historically, these databases have been considered highly reputable by the legal profession, and

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66. Ian Rowlands et al., *The Google Generation: The Information Behaviour of the Researcher of the Future*, 60 ASLIB PROCEEDINGS: N. INFORMATION PERSPECTIVES 290, 291 (2008).

67. *Id.* at 295.

68. *Id.*

69. *Id.* at 297.

70. *See* Alexander J.A.M. van Deursen & Jan A.G.M. van Dijk, *Using the Internet: Skill Related Problems in Users' Online Behavior*, INTERACTING WITH COMPUTERS, at *6 (2009), https://www.utwente.nl/nl/bms/cw/bestanden/Using%20the%20Internet-%20Skill%20related%20problems.pdf.

71. *See, e.g.*, Ellie Margolis & Kristen Murray, *Using Information Literacy to Prepare Practice-Ready Graduates*, 39 U. HAW. L. REV. 1, 2, 23 (2016).

72. The current 3Ls were born in 1994, on average.

73. *See, e.g.*, Catherine M. Dunne, *The Next Generation of Westlaw: WestlawNext*, 54 LAW LIBR. LIGHTS 1, 1 (2010), http://www.llsdc.org/assets/LLL/54/lights_54-1.pdf.

nearly every law student in the country learns how to perform legal research using them. From a recent empirical study, it has been shown that the legal database algorithms show a surprising amount of variation in case law results that each algorithm deems relevant for a particular search query.[74] Therefore, a user relying on the first page of results in a legal database may get significant variation in the relevant cases on a particular topic. The user, through hasty searching and vetting of results, has just allowed the algorithm to have a significant role in selecting the cases the algorithm deems should advance the law.

Couple the reliance on these legal databases with the categorical blind reliance on algorithms in general, and it could be a recipe for disaster to clients that rely on lawyers to counsel and advocate for them. One of the main risks is in the predictive coding used to generate results. "Predictive coding is a machine learning process that uses software to take keyword searches/logic, entered by people, for the purpose of finding responsive documents, and applies it to much larger data sets to reduce the number of irrelevant and non-responsive documents that need to be reviewed manually."[75] Part of the risk of predictive coding is that the user cannot know how the algorithm generated results because of the lack of transparency[76] and the machine learning bias that may be present in the code.[77] Without knowing how the algorithm generated results, lawyers are left to their own devices to evaluate results.

Given the lack of transparency and other issues with blindly relying on algorithms,[78] lawyers may be at a loss as to how to competently use this ubiquitous technology. Without formal guidance on point, lawyers should draw parallels to the current guidance documents pertaining to the Duty of Technology Competence. For example, as noted above, the Washington Bar Association states that, "[a] lawyer using [a third-party] service must . . . conduct a due diligence investigation of the provider and its services and

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74. Susan Nevelow Mart, *The Algorithm as a Human Artifact: Implications for Legal [Re]search*, 109 L. LIBR. J. 387, 412 (2017).

75. *Predictive Coding*, EXTERRO, https://www.exterro.com/basics-of-e-discovery/predictive-coding/ (last visited Feb. 24, 2018).

76. *See* Lee Rainie & Janna Anderson, *Theme 7: The Need Grows for Algorithmic Literacy, Transparency and Oversight*, PEW RESEARCH CTR. (Feb. 8, 2017), http://www.pewinternet.org/2017/02/08/theme-7-the-need-grows-for-algorithmic-literacy-transparency-and-oversight/.

77. Jason Tashea, *Courts are Using AI to Sentence Criminals. That Must Stop Now*, WIRED (Apr. 17, 2017, 7:00 AM), https://www.wired.com/2017/04/courts-using-ai-sentence-criminals-must-stop-now/.

78. Paul Cleverley, *Search Algorithms Neutral or Biased?*, 41 ONLINE SEARCHER 12 (Oct. 2017).

cannot rely on lack of technological sophistication to excuse the failure to do so."[79] Additionally, we know from the Washington Bar Association opinion that a lawyer's ethical duty regarding technology does not stop after initial due diligence. It is an ongoing duty that requires long-term reasonable care.[80] Analogously, competent lawyers must continuously monitor their use of a vendor and the corresponding algorithms to ensure that they use reasonable care when relying on the algorithm's results. We also know that a lawyer's lack of technological sophistication is no excuse, so the lawyer must at least have a basic understanding of the pitfalls associated with using algorithms[81] to be able to vet the content.

When drawing parallels to New York's social media guidance, particularly as it pertains to research, we see that "[i]f an attorney cannot ascertain the functionality of a website, the attorney must proceed with great caution in conducting research on that particular site."[82] Analogously, when a lawyer is using an algorithm but cannot ascertain the functionality, the lawyer must proceed with great caution when relying on the results.

Lastly, from the State Bar of California opinion, we see "three options from which a lawyer should choose when confronted with unfamiliar technology: (1) become familiar with the technology, (2) consult with or delegate to someone who is familiar with the technology, or (3) decline to represent the client."[83] As noted above, "[a]lthough California's hypothetical applies specifically to e-discovery, its conclusions can be read as applying to all of the benefits and risks of technology as defined in comment 8."[84] Likewise, a competent lawyer, when confronted with an unfamiliar algorithm, will become familiar with it by looking for patterns, such as biased results or recognizing foundational cases, for example. If the lawyer cannot confidently ascertain the legitimacy of the results, the lawyer should consult with or delegate to someone who can.

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79. Wash. Bar Ass'n Comm. on Prof'l Ethics, Op. 2215 (2012).

80. *See id.*

81. *See, e.g.*, Virginia Eubanks, *The Policy Machine*, SLATE (Apr. 30, 2015, 1:55 PM), http://www.slate.com/articles/technology/future_tense/2015/04/the_dangers_of_letting_algorithms_enforce_policy.html (providing that algorithms can cause real damage when not properly understood, especially when related to legal context); *When Not to Trust the Algorithm*, HARV. BUS. REVIEW (Oct. 6, 2016), https://hbr.org/ideacast/2016/10/when-not-to-trust-the-algorithm.html (providing an interview with author Cathy O'Neil on her book *Weapons of Math Destruction*).

82. GUIDELINES, *supra* note 35, at 3 (quoting Formal Op. 2012-2, *supra* note 37, at 7).

83. *See* State Bar of Cal. Standing Comm. on Prof'l Responsibility & Conduct, Formal Op. 2015-193 (2015).

84. O'Neill, *supra* note 31, at 937.

While the parallels to the various guidance documents provide some insight into the competent use of algorithms in law, the underlying principle is that a lawyer, at a minimum, must be aware of the issues surrounding the use of algorithms and use reasonable care. "A lawyer might be able to recognize anomalies due to his or her legal training, and know enough to test the answer, ask a different question, or adjust the data. If the lawyer is looking, that is."[85]

Ultimately, lawyers must be aware of the issues surrounding the use of algorithms in law to act as information fiduciaries for their clients.

> Generally speaking, a fiduciary is one who has special obligations of loyalty and trustworthiness toward another person. The fiduciary must take care to act in the interests of the other person, who is sometimes called the principal, the beneficiary, or the client. The client puts their trust or confidence in the fiduciary, and the fiduciary has a duty not to betray that trust or confidence. Fiduciaries have two basic duties. The first is a duty of care. The fiduciary must take care to act competently and diligently so as not to harm the interests of the principal, beneficiary, or client. The second, and in many ways more important duty, is the duty of loyalty. Fiduciaries must keep their clients' interests in mind and act in their clients' interests.[86]

Therefore, competent lawyers must understand the information they rely on and provide advice to a client that is the result of the lawyer's independent, educated judgment. "A lawyer must know, test, look, supervise, understand, and make all necessary adjustments so that while he or she may be using AI as a tool, the ultimate advice is still independently his or hers and is ethically compliant."[87] After all, one benefit of using a lawyer's expertise is that the lawyer is trained to spot mistakes. "Lay people accessing AI legal services directly without a lawyer have no such advantage, and might not know that something is wrong until they have relied on the wrong answer and taken a legal step, and it is too late."[88]

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85. Chang, *supra* note 61.

86. Jack M. Balkin, *Information Fiduciaries and the First Amendment*, 49 U.C. DAVIS L. REV. 1183, 1207–08 (2016).

87. Chang, *supra* note 61.

88. *Id.*

IV. PRACTICAL TIPS FOR TEACHING THE COMPETENT USE OF ALGORITHMS

Many law schools make it their mission to graduate competent, practice-ready lawyers who are able to ethically represent clients. As technology becomes a larger part of the everyday practice of law, the legal academy must take an active role in helping to shape lawyers that can comply with the Duty of Technology Competence. Part of this compliance will mean using reasonable care when relying on algorithms. We must undo some of the bad research habits that the law students have gained along the way, and we must stress that client representation should be the result of independent judgment.

In practice, this may be part of a larger discussion on evaluating resources and results. For example, as part of a hands-on portion of a criminal law class,[89] the professor or law librarian could provide a fact pattern and ask the students to evaluate the factors considered in criminal sentencing to recommend a sentence. The instructor could then lead the students to a software program used in sentencing called COMPAS that assesses the risk that the defendant would commit more crimes.[90] As the instructor led the students to COMPAS, the instructor could discuss some of the issues surrounding the use of algorithms in sentencing, including the unintentional bias that is potentially coded into the algorithm that, for example, treats race as a significant factor in assessing the risk of committing future crimes.[91] The students could then compare their own independent judgment as to the recommended sentence and compare it to that of COMPAS.

Another obvious place to incorporate instruction about the ethical use of algorithms is as a part of the foundational legal research training. Because most legal research databases now rely on sophisticated algorithms to generate results, it behooves professors to point out the Duty of Technology Competence during legal research instruction, as well as provide information on the associated pitfalls of blindly relying on the technology.

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89. *See generally* Brooke J. Bowman, *Researching Across the Curriculum: The Road Must Continue Beyond the First Year*, 51 OKLA. L. REV. 503, 557–58 (2009).

90. Adam Liptak, *Sent to Prison by a Software Program's Secret Algorithms*, N.Y. TIMES (May 1, 2017), https://www.nytimes.com/2017/05/01/us/politics/sent-to-prison-by-a-software-programs-secret-algorithms.html.

91. *See* Matthias Speilkamp, *Inspecting Algorithms for Bias*, MIT TECH. REVIEW (June 12, 2017), https://www.technologyreview.com/s/607955/inspecting-algorithms-for-bias/ (explaining that under the racial bias in COMPAS, different races are labeled more or less likely to re-offend, whether or not they actually do).

As part of this ethical standard, the instructor could look to the *Principles for Legal Research Competency* published by the American Association of Law Libraries. The principles advanced by the American Association of Law Libraries are as follows:

> I. A successful legal researcher possesses foundational knowledge of the legal system and legal information sources.
> II. A successful legal researcher gathers information through effective and efficient research strategies.
> III. A successful legal researcher critically evaluates information.
> IV. A successful legal researcher applies information effectively to resolve a specific issue or need.
> V. A successful legal researcher distinguishes between ethical and unethical uses of information, and understands the legal issues associated with the discovery, use, or application of information.[92]

At a minimum, principles III and V go directly to the competent and ethical use of algorithms in law. "Lawyers who do not meet [these] standard[s] may well find themselves at risk of both disciplinary and malpractice actions."[93]

To that end, in *The Algorithm as a Human Artifact*, author Susan Nevelow Mart provides a short, practical assignment for instructors to use as they train law students to competently use algorithms and evaluate results.[94] Appendix A of the article provides a class assignment called "How Algorithms Differ—Searching for Case Law."[95] The assignment provides a fact pattern and asks students to run searches in Google Scholar, LexisNexis, and Westlaw looking for relevant cases. After the searches, there is a series of questions designed to help the student evaluate the results.[96]

Through a mixture of practical, hands-on assignments and intermittent discussions surrounding these topics as they arise, the legal academy can

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92. AM. ASS'N OF LAW LIBRARIES, PRINCIPLES AND STANDARDS FOR LEGAL RESEARCH COMPETENCIES (2013), https://archives.library.illinois.edu/erec/AALL_Archives/8501445a/PSLRC13.pdf.

93. M. H. Hoeflich & Frank Siler, *New Technologies and Lawyer Competence*, 85 J. KAN. B. ASS'N 38, 42 (2016).

94. *See* Mart, *supra* note 74, at 421.

95. *Id.* at 421–22.

96. *Id.*

arm their students with the "metacognitive skills required to be self-reliant" in their investigations of the law.[97]

V. CONCLUSION

One thing is certain: technology will only become more ubiquitous and sophisticated in the practice of law. The ABA had a prescient understanding of this as it amended the Duty of Competence to include a Duty of Technology Competence. And most states have followed suit, as they amended their respective model rules to require the duty within their jurisdiction.

As Robert Ambrogi stated, the Duty of Technology Competence represents a "sea change" in the practice of law.[98] We are just starting to see this sea change as various guidance documents have provided a glimpse into the ethical responsibilities under the duty. Though only some jurisdictions adhere to the formal duty, all lawyers should now use reasonable care and remain cognizant of the ethical implications of the technology they use in the practice of law. Not only are there very real issues regarding the lack of transparency and potential bias that may be perpetuated through blindly relying on algorithms, there are also theoretical issues in giving independent judgment over to machines.

As we move from the Information Age to the Algorithmic Society where artificial intelligence and algorithms will increasingly be used to create greater efficiencies and govern populations, lawyers must act as information fiduciaries for their clients and protect them from the potential ills. It is important that the legal academy takes note and helps to prepare prospective lawyers to comply with the Duty of Technology Competence in practice.

This will be an uphill battle as the Google Generation starts to inhabit the halls of the law school having become comfortable with incompetent research skills—the research skills that have them relying on the top few results generated by algorithms with little thought given to evaluating the content. As part of the core legal education, legal educators must capitalize on moments to discuss the issues surrounding the use of algorithms with their students to ensure that the students have an understanding of the benefits and risks associated with the relevant technology.

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97. *Id.* at 420.
98. Ambrogi, *supra* note 2.

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