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Sherley E. Cruz

CODING FOR CULTURAL COMPETENCY: EXPANDING ACCESS TO JUSTICE WITH TECHNOLOGY

SHERLEY E. CRUZ*

Innovations in legal technology are revolutionizing access to justice for individuals who previously had little or no ability to obtain legal assistance. This Article explores how the lack of culturally competent designs within legal technology negatively impacts diverse communities, thereby hindering the ability to expand access to justice. An examination of the underlying theories of access to justice and cultural competency illustrates why it is necessary for legal professionals and technology designers to incorporate culturally competent designs when developing legal technology. In light of ongoing changes in United States' demographics, and the heightened need to provide access to justice given the current political climate, this Article uses the example of the Latinx community to illustrate how culture impacts the effectiveness of legal technology. Applying cross-cultural competence theory to legal technology allows for the identification of potential risks and provides a critical point of view from which to generate design principles that will increase access to justice for all.

INTRODUCTION

Without legal assistance, the rights of many low-wage and immigrant individuals go unenforced.[1] In employment discrimination cases, for example, self-represented litigants are more likely to lose their case due to insufficiencies in the pleadings and inability to

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1. *See* Phillip Gallagher, *The Restriction Barring LSC-Funded Lawyers from Assisting Certain Immigrant Groups*, BRENNAN CTR. FOR JUST. (Sept. 26, 2003), https://www.brennancenter.org/analysis/fact-sheet-restriction-barring-lsc-funded-lawyers-assisting-certain-immigrant-groups.

present legally relevant facts than litigants represented by counsel.[2] They are also less likely to settle matters quickly or receive settlements as large as litigants represented by counsel.[3] In landlord-tenant cases, tenants represented by counsel are more than twice as likely to defeat an eviction case than tenants without counsel.[4] While not a substitution for counsel, legal technological innovations can provide significant assistance to self-represented litigants and guide litigants to appropriate legal help.

Technology is expanding access to justice by helping individuals spot legal issues using mobile applications.[5] These applications facilitate the exchange of information and documents through virtual client portals, assist self-represented individuals with the drafting of legal documents using chatbots, and allow for virtual interviews guided by artificial intelligence.[6] Lawyers are using technology to make the practice of law more efficient, more affordable, and more accessible.[7] In fact, over the last decade, the legal profession has turned to technology as a way to help increase access to justice for individuals who cannot afford private attorneys.[8]

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2. Laura Beth Nielsen, Robert L. Nelson & Ryon Lancaster, *Individual Justice or Collective Legal Mobilization? Employment Discrimination Litigation in the Post Civil Rights United States*, 7 J. EMPIRICAL LEGAL STUD. 175, 189 (2010).

3. *Id.*

4. BOS. BAR ASS'N TASK FORCE ON EXPANDING THE CIVIL RIGHT TO COUNSEL, THE IMPORTANCE OF REPRESENTATION IN EVICTION CASES AND HOMELESSNESS PREVENTION 4 (Mar. 2012), https://www.bostonbar.org/docs/default-document-library/bba-crtc-final-3-1-12.pdf; *see* Carroll Seron et al., *The Impact of Legal Counsel on Outcomes for Poor Tenants in New York City's Housing Court: Results of a Randomized Experiment*, 35 L. & SOC'Y REV. 419, 426–27 (2001) (finding a significant reduction in the number of cases resulting in warrant of eviction where a tenant was represented by counsel); *see also* Laura Abel, *Make "You Have the Right to a Lawyer" a Reality in Housing Court*, BRENNAN CTR. FOR JUST. (Mar. 27, 2005), https://www.brennancenter.org/analysis/make-you-have-right-lawyer-reality-housing-court; Rebecca L. Sandefeur, *The Impact of Counsel: An Analysis of Empirical Evidence*, 9 SEATTLE J. FOR SOC. JUST. 51, 69–71 (2010) (finding that represented parties enjoy better outcomes than do unrepresented parties)

5. Jane Croft, *Lawyers Must Learn to Embrace Technology*, FIN. TIMES (Nov. 20, 2016), https://www.ft.com/content/aa77a9ec-9ace-11e6-8f9b-70e3cabccfae.

6. *See infra* Section I.C (discussing legal technology that is increasing access to justice).

7. *See* Robert May, *Three Ways Law Firms Use Technology for Client Communication*, L. TECH. TODAY (Aug. 9, 2017), http://www.lawtechnologytoday.org/2017/08/tech-for-communication-with-clients/.

8. *See* LEGAL SERVS. CORP., THE JUSTICE GAP: MEASURING THE UNMET CIVIL LEGAL NEEDS OF LOW-INCOME AMERICANS 9, 40 (2017), https://www.lsc.gov/sites/default/files/images/TheJusticeGap-FullReport.pdf (defining the justice gap as "the difference between the civil legal needs of low-income Americans and the resources available to meet those needs").

Each year, millions of federal grant dollars are dedicated to supporting technological developments that aim to increase access to justice.[9] In 2017, Legal Services Corporation (LSC), the largest funder of civil legal aid programs for low-income Americans,[10] funded access to justice projects in twenty-two states by awarding Technology Innovation Grants (TIGs) to twenty-five different legal aid programs.[11] For example, Legal Aid of Hawaii received a $102,103 TIG grant to translate the statewide website into three different languages with the goal of increasing the website's capacity to support the states' growing population of limited English speaking residents.[12] Florida's Bay Area Legal Services also received $136,705 in TIG funds to make its website more accessible to disabled clients, as well as more mobile-user friendly.[13]

Despite the promise of technology and the funding available for it, there is real potential for serious pitfalls if the technology is not implemented thoughtfully. Can legal technological solutions provide access to justice if the technology does not take into consideration cultural differences such as language, literacy, communication styles, and access to technology? Without culturally competent design considerations, does technology provide all individuals with meaningful and quality user experiences?

Worse yet, what if the technology places the user's privacy at risk or promotes implicit biases because the design did not consider the diversity of end users or the stakeholders?[14] Recent studies have shown that artificial intelligence programs may reinforce implicit

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9. *See, e.g.*, *LSC Awards Nearly $4 Million in Technology Grants to Legal Aid Organizations*, LEGAL SERVS. CORP (Nov. 9, 2017), https://www.lsc.gov/media-center/press-releases/2017/lsc-awards-nearly-4-million-technology-grants-legal-aid.

10. *Who We Are*, LEGAL SERVS. CORP., https://www.lsc.gov/about-lsc/who-we-are (last visited Apr. 2, 2019) (defining "low-income" for LSC purposes as having "annual incomes at or below 125% of the federal poverty guidelines"). Legal Service Corporation is an independent nonprofit corporation that was created by Congress in 1974. *Id.* LSC is governed by federal law and federal law applies to its grant recipients. *Laws, Regulations & Guidance*, LEGAL SERVS. CORP., https://www.lsc.gov/about-lsc/laws-regulations-guidance (last visited Apr. 2, 2019); *see also* Legal Services Corporation Act of 1974, 42 U.S.C. § 2996 (2018).

11. *LSC Awards Nearly $4 Million in Technology Grants to Legal Aid Organizations*, *supra* note 9.

12. *Id.*

13. *Id.*

14. Stakeholders are persons who have a vested interest in the results provided by the technology or who are impacted by the results of the technology directly or indirectly. *See Stakeholder*, BLACK'S LAW DICTIONARY (10th ed. 2014).

biases.[15] Innovations like chatbots—which are meant to assist, inform, and resolve issues—may unintentionally frustrate, misinform, and harm the end user if the technology does not consider the end user's cultural barriers and preferences.[16] This Article identifies some of these risks and offers culturally competent design principles to help avoid them.

This Article examines the intersectionality of cross-cultural competence theory and access to justice theory to demonstrate that successful use of legal technology inextricably requires legal professionals to incorporate culturally competent designs. Part I provides a brief history of how technology became a tool to increase access to justice and introduces innovative ways that the legal profession is implementing technology to help close the access to justice gap. As part of the overview of how technology is expanding access to justice, this Article also identifies unexpected adverse results of innovations that are implemented without regard to the diversity of the end users. Part II briefly introduces cross-cultural competence theory and discusses why attorneys and technology developers must consider culturally competent design when developing legal technology.[17] By way of example, Part II reviews statistics and data about how the Latinx[18] community—the largest minority group in the United States—is using technology to gather information and seek advice.[19] It also examines the extent to which

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15. Aylin Caliskan, Joanna J. Bryson & Arvind Narayanan, *Semantics Derived Automatically from Language Corpora Contain Human-Like Biases*, SCI., Apr. 14, 2017, at 183, 185, http://science.sciencemag.org/content/356/6334/183.full.

16. *See id.* at 185.

17. "Cross-cultural design" refers to technology that considers cultural competency and offers solutions to cross-cultural barriers. *See* Cynthia Risse, *Cross-Cultural Interface Design*, MEDIUM (Nov. 17, 2017), https://medium.com/@cynthia risse/cross-cultural-interface-design-1f259a8fbcdc. It is my hope that this Article will inspire opportunities to continue this dialogue and encourage more thoughtful legal technological design.

18. The terms "Latinx" and "Hispanic" are used fairly interchangeably throughout this Article, unless I am quoting or citing to a particular source (in which case I refer to the term used by the source). The terms, however, have different meanings. "Latinx" commonly refers to being of Latin American descent, while the term "Hispanic" commonly refers to people who share Spanish as a common language. *See* Lulu Garcia-Navarro, *Hispanic or Latino? A Guide for the U.S. Presidential Campaign*, NPR (Aug. 27, 2015, 2:18 PM), https://www.npr.org/sections/parallels/2015/08/27/434584260/hispanic-or-latino-a-guide-for-the-u-s-presidential-campaign.

19. While this Article focuses on the experiences and impact of technology within the Latinx community, the general concepts, theories, and applications apply more broadly to many other populations that experience linguistic, physical, location, geographical, educational, or other barriers to technology and access to justice.

Latinxs use technology and barriers the community faces in this use of technology. Part III then connects the concepts of culturally competent design with access to justice to identify user experience and technological design principles that will make legal technology more meaningful, while also avoiding potential pitfalls that may arise if technology is implemented without regard to cultural differences. By melding technology and cultural competency theories, this Article demonstrates that culturally competent design is not only possible, but necessary to ensure social justice and help close the access to justice gap.

I. TECHNOLOGY AND THE LAW

Legal professionals have been using technology to improve the management of practicing law for decades.[20] Most recently, the need for low-cost legal services has shifted the focus from law practice management technology to technology that can help close the access to justice gap.[21] The following sections provide historical background about the growing role of technology in the law, as well as examples of technological innovations that are changing the landscape of how legal services are delivered in a quest to provide access to justice for all.

A. The Ethical Duty to Know About Relevant Legal Technology

In 2008, the American Bar Association (ABA) formally recognized the growing importance of technology in the practice of law by expanding the ABA Model Rules of Professional Conduct (MRPC) to include a requirement that attorneys be competent about relevant legal technology.[22] Comment 8 of MRPC Rule 1.1 provides that under the duty of competence, lawyers need to be aware of "changes in the law and its practice, including the benefits *and risks* associated with relevant technology."[23] Commentary regarding Comment 8 suggests that Rule 1.1 now places a duty on lawyers to use technology that they understand and to turn to technology experts to increase their general

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20. *See infra* Section I.B.

21. *See infra* Section I.C.

22. MODEL RULES OF PROF'L CONDUCT r. 1.1 cmt. 8 (AM. BAR ASS'N 2018) (advising that lawyers should stay up-to-date about changes, benefits, and risks in technology relevant to their practice).

23. *Id.*

knowledge and familiarity with technology, in addition to taking measures to decrease security risks associated with technology.[24]

To date, thirty-one states have adopted some version of the ABA requirement that attorneys have an ethical duty to be competent about technology.[25] In discharging their ethical obligations, lawyers must be mindful of the implications of using technology.[26] Specifically, they need to "understand the capabilities and limitations . . . and they must consider the risks and benefits" of legal technology.[27] In fact, some states have gone further in recognizing the role that technology plays in law practice by requiring attorneys to earn Continuing Legal Education (CLE) credits in legal technology.[28]

Legal technology is here to stay. Its potential to improve the practice of law and to help serve more individuals is widely recognized throughout the profession. The following sections will provide background about the history of legal technology and offer specific examples of how legal professionals are using technology to expand access to justice.

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24. *See* Jason Tashea, *Cloudy Ethics*, A.B.A. J., Apr. 2018, at 30, 32; *see also* STATE BAR OF WIS., CHALLENGES TO THE PROFESSION COMMITTEE, THE NEW NORMAL: THE CHALLENGES FACING THE LEGAL PROFESSION 10 (2011), https://www.wisbar.org/SiteCollectionDocuments/News/FINAL-report-July-2011.pdf (referring to observations by the American Bar Association's eLawyering TaskForce that "[w]e now must be ready to practice in a way that allows our clients a new method of access to legal services by using the technology and communications tools around us").

25. Robert Ambrogi, *31 States Have Adopted Ethical Duty of Technology Competence*, LAWSITES (Mar. 16, 2015), https://www.lawsitesblog.com/2015/03/11-states-have-adopted-ethical-duty-of-technology-competence.html (keeping a running count of states that have adopted the ABA Technology Competence rule).

26. *See* David Lat, *The Ethical Implications of Artificial Intelligence*, ABOVE L. (last visited Apr. 2, 2019), https://abovethelaw.com/law2020/the-ethical-implications-of-artificial-intelligence/.

27. *Id.*

28. *See, e.g.*, Victor Li, *Florida Supreme Court Approves Mandatory Tech CLE Classes for Lawyers*, AM. BAR ASS'N J. (Sept. 30, 2016, 8:45 AM), http://www.abajournal.com/news/article/florida_supreme_court_approves_mandatory_tech_cles_for_lawyers (noting that Florida has a three-hour CLE in technology requirement).

B. The Growth of Legal Technology

Legal technology innovations, the software and programs designed to improve law practice and access to legal services, are reinventing the scope of law practice and who has access to it.[29] The use of technology, in a wide range of forms, is making legal services more affordable, more accessible, and simpler to navigate.[30] The legal profession has long recognized the important role that technology plays in the practice of law.[31] In 1974, the ABA created what is now known as the Science and Technology Law Section "to provide a forum to address issues at the intersection of law, science, and technology."[32] Twenty-five years later, the Legal Services Corporation (LSC) began a grant program to support and encourage the use of technology to expand access to justice for low-income Americans.[33] In 2000, LSC created the Technology Innovation Grants (TIG) program to support legal services organizations that are implementing technology in innovative ways to:

> 1. Effectively and efficiently provide high-quality legal assistance to low-income persons and to promote access to the judicial system through legal information, advice, and representation;
>
> 2. Improve service delivery, quality of legal work, and management and administration of grantees; and
>
> 3. Develop, test, and replicate innovative strategies that can enable grantees and state justice communities to improve clients' access to high-quality legal assistance through an integrated and well-managed technology system.[34]

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29. *See* James E. Cabral et al., *Using Technology to Enhance Access to Justice*, 26 HARV. J.L. & TECH. 241, 243–44 (2012).

30. RICHARD SUSSKIND, TOMORROW'S LAWYERS: AN INTRODUCTION TO YOUR FUTURE 99 (2d ed. 2017).

31. *See* AM. BAR ASS'N SECTION OF SCI. & TECH. LAW, CELEBRATING 35 YEARS OF ABA SECTION OF SCIENCE & TECHNOLOGY LAW: *ON THE CUTTING EDGE* 5 (2009) https://www.americanbar.org/content/dam/aba/administrative/science_technology/35anniversary.authcheckdam.pdf.

32. *Id.*

33. *Technology Initiative Grant Program*, LEGAL SERVS. CORP., https://www.lsc.gov/grants-grantee-resources/our-grant-programs/tig#Overview (last visited Apr. 2, 2019).

34. *Id.*

The TIG program has been a driving force behind the use of technology to increase access to justice.[35] Since the program's inception in 2000, TIGs have provided more than fifty-seven million dollars of funding to support innovative technology that will better serve low-income individuals seeking legal assistance.[36] TIG-funded programs like LawHelp.org and Law Help Initiative have greatly improved accessibility to legal services websites, online intake portals, and legal document drafting tools.[37]

In 2012 and 2013, LSC convened the "Summit on the Use of Technology to Expand Access to Justice."[38] More than seventy-five public interest leaders and technology experts—from legal aid organizations and courts to private practitioners and legal scholars—who were invested in access to justice gathered to identify how technology could achieve their goals.[39] The 2012 group focused on identifying technological tools that could be used to improve access to justice.[40] The goal of the 2013 group was to develop plans to implement the ideas from the previous year's summit that were most likely to lead to cost effective, practical legal technology tools that community members could utilize.[41] Based on those factors, the group identified the following areas as TIG funding priorities:

(1) Document assembly for self-represented litigants;

(2) better "triage"—that is, identification of the most appropriate form of service for clients in light of the totality of their circumstances;

(3) mobile technologies;

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35. *See id.*

36. *See Technology Initiative Grants Highlights and Impact*, LEGAL SERVS. CORP., https://www.lsc.gov/grants-grantee-resources/our-grant-programs/technology-initiative-grant-program/technology (last visited Apr. 2, 2019); *see also Technology Initiative Grant Program*, *supra* note 33 (listing in detail every group who has received a TIG dating back to the year 2009).

37. *See Technology Initiative Grants Highlights and Impact*, *supra* note 36 (stating that LawHelp.org connects users to statewide legal services resources and information).

38. LEGAL SERVS. CORP., REPORT OF THE SUMMIT ON THE USE OF TECHNOLOGY TO EXPAND ACCESS TO JUSTICE (Dec. 2013), https://www.lsc.gov/sites/default/files/LSC_Tech%20Summit%20Report_2013.pdf (proposing a national vision of increasing access to justice with technology).

39. *Id.* at 1.

40. *Id.*

41. *Id.*

(4) remote service delivery;

(5) expert systems and checklists; and

(6) unbundled services.[42]

Although TIGs provide enormous financial support for the expansion of legal technology to increase access to justice, it is not enough to close the gap.[43] The demands for legal services by low- and moderate-income individuals are too high to be met by LSC-funded programs.[44] Restrictions on the use of LSC funds also limit its capacity to support technology programs aimed at increasing access to justice for many immigrants.[45] LSC only funds and supports programs that serve United States citizens, with a few exceptions for a limited category of immigrants.[46] This restriction reduces TIG's capacity to serve vulnerable non-citizens. LSC funding restrictions may also limit the development of technology in areas of litigation and advocacy that affect many low-wage and immigrant individuals, such as class actions, demonstrations and strikes, welfare reform, organizing labor unions or other associations, and trainings for labor and anti-labor activities.[47] Congress has imposed restrictions on class action lawsuits and assistance for undocumented immigrants since the Reagan administration, when a bipartisan coalition agreed to these restrictions in order to avoid the total defunding and abolishment of LSC.[48] LSC restrictions also bar funding to organizations that provide

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42. *Id.*

43. *See* Nancy Lopez, *The Next Wave of Legal Services for the Poor*, AM. CONST. SOC'Y (Sept. 3, 2014), https://www.acslaw.org/acsblog/the-next-wave-of-legal-services-for-the-poor/.

44. *Id.* (citing reports that found that legal aid organizations turn away fifty percent of individuals seeking assistance).

45. *See, e.g.*, Matt Ford, *What Will Happen to Americans Who Can't Afford an Attorney?*, ATLANTIC (Mar. 19, 2017), https://www.theatlantic.com/politics/archive/2017/03/legal-services-corporation/520083/ (discussing the history of immigration-based restrictions tied to LSC funds, including a Reagan-era bar on providing legal help to undocumented immigrants).

46. *See About Statutory Restrictions on LSC-Funded Programs*, LEGAL SERVS. CORP., https://www.lsc.gov/about-statutory-restrictions-lsc-funded-programs (last visited Apr. 2, 2019) (listing the types of programs that LSC does not fund); *see also* Omnibus Consolidated Rescissions and Appropriations Act of 1996, Pub. L. No. 104-134, § 504(a)(11), 110 Stat. 1321, 54–55 (1996).

47. *See LSC Restrictions and Other Funding Sources*, LEGAL SERVS. CORP., https://www.lsc.gov/lsc-restrictions-and-funding-sources (last visited Apr. 2, 2019).

48. *See* Ford, *supra* note 45.

support to undocumented immigrants or individuals with a history of incarceration, as well as some public housing residents.[49] These funding limitations hamper the social justice goals of providing full and equal participation in quality legal services for all—and particularly so for vulnerable communities.[50] Those most in need of legal services and who face the biggest barriers to access to justice are unable to use critical services provided by LSC-funded organizations.[51] The restrictions have also led a significant number of legal aid organizations to voluntarily give up LSC funding in order to serve more immigrant clients.[52] This void severely hinders the ability of LSC-funded programs to fully incorporate culturally competent technology design into their technological innovations. The next sections will illustrate how the legal profession is using legal technology to increase access to justice, with and without LSC funding.

C. Legal Technology That Is Increasing Access to Justice

The legal profession is increasingly using technology to assist individuals with their legal needs. Law practices are marketing on websites, announcing legal developments through electronic newsletters, blogging, establishing a presence on social media, and using virtual screening and interviewing tools to share information with clients.[53] Legal technology is helping to meet consumer demand for more efficient legal services that maximize outcomes at more affordable levels.[54]

Chat platforms, mobile applications, and virtual client portals offer new and innovative frameworks to securely exchange information and provide legal advice.[55] These new communication

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49. *Access to Justice in the United States: Ensuring Meaningful Access to Counsel in Civil Cases*, COLUM. L. SCH. HUM. RTS. INST., https://www.law.columbia.edu/sites/default/files/microsites/human-rights-institute/files/access_to_justice_fact_sheet.pdf (last visited Apr. 2, 2019).

50. *Id.*

51. *Id.*

52. *See* ALAN W. HOUSEMAN, CTR. FOR L. & SOC. POLICY, CIVIL LEGAL AID IN THE UNITED STATES: AN UPDATE FOR 2013 6 (2013), https://www.clasp.org/sites/default/files/public/resources-and-publications/publication-1/CIVIL-LEGAL-AID-IN-THE-UNITED-STATES-3.pdf.

53. *See* STATE BAR OF WIS., *supra* note 24.

54. *See Why Legal Tech Conferences Have Become a Global Phenomenon*, AM. BAR ASS'N J. (June 15, 2018, 7:00 AM), http://www.abajournal.com/news/article/why_legal_tech_conferences_have_become_a_global_phenomenon.

55. *See* May, *supra* note 7.

platforms offer the ability to instantly relay important messages, monitor case progress, receive updates, and provide advice and referral information—all through password protected portals without a time consuming and costly visit to a law office or legal assistance organization.[56] Courthouses are using kiosks to provide self-help assistance with procedural questions and protocols, as well as improving their websites to make them more user-friendly.[57] Some criminal court systems are turning to artificial intelligence to assist with bail determinations.[58]

Law schools are also recognizing the importance that legal technology plays in law practice and are incorporating technology into many aspects of their curricula.[59] From legal writing courses that test and improve students' ability to work with Word, Excel, and Adobe Acrobat to technology innovation labs that teach students how to create mobile apps and design document production programs, law schools are turning to technology as a way to better prepare students to enter the practice of law.[60] As of 2017, over forty law schools currently offer some version of legal technology instruction as part of their law school curricula.[61]

Tech-savvy law students and lawyers are partnering to create innovative software applications that help simplify many aspects of

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56. *See, e.g., id.*

57. Jack L. Rives, *Embracing Innovation: Adapting to Change Is Essential for Law Practitioners*, A.B.A. J., Feb. 2017, at 6, 6; *see also* Ed Finkel, *Seeing—and Shaping—the Future*, 105 ILL. B.J. 24, 28 (2017); *How Can We Improve People's Access to Justice?*, STAN. LEGAL DESIGN LAB, http://legaltechdesign.com/access-innovation/ (last visited Apr. 2, 2019) (providing examples of innovative technology being implemented in various court systems).

58. Adam Liptak, *Sent to Prison by a Software Program's Secret Algorithms*, N.Y. TIMES, May 2, 2017, at A22.

59. Sameena Kluck, *The Future of Law Schools: Law Schools Shaking Up Curriculum to Focus on Technology, Panel Says*, THOMSON REUTERS LEGAL EXEC. INST. (Nov. 27, 2017), http://www.legalexecutiveinstitute.com/future-of-law-schools-law-schools-curriculum-technology/.

60. *See* Miguel Willis, *8 Law Schools on Cutting Edge of Tech + Innovation*, INNOVATIVE L. STUDENT (Apr. 28, 2016), https://www.innovativelawstudent.com/2016/04/7-law-schools-cutting-edge-tech-innovation/ (identifying innovative law school legal technology programs); *see also* Richard Granat & Marc Lauritsen, *Teaching the Technology of Practice: The 10 Top Schools*, L. PRAC, July/Aug. 2014, at 44, 45 (providing the ABA ranking of the top ten law schools teaching technology); Katie Walter, *Six Ways Law Schools Can Make Students More Practice Ready*, THOMSON REUTERS LEGAL EXEC. INST. (Jan. 3, 2017), http://www.legalexecutiveinstitute.com/six-ways-law-schools-students/ (identifying legal tech skills as important to make law students "practice ready").

61. *Law School Innovation Index*, LEGAL SERVS. INNOVATION INDEX (Nov. 2, 2017), https://www.legaltechinnovation.com/law-school-index/.

the legal practice.[62] The creation and use of legal technology software applications is reinventing law practice tasks that historically required hours of research, understanding of complicated procedures and protocols, and multiple interviews with clients. Along these lines, in 2012, several Brooklyn Law students created a group called Legal Hackers to use technology to solve legal and policy problems.[63] They hosted the first legal "hackathon" of its kind, where innovative, tech-savvy individuals displayed and promoted their legal apps aimed at using technology to transform law practice in ways that would help clients, organizations, and society.[64] One example of the software highlighted at the hackathon was an application called Obsidian Redline, which allows attorneys negotiating a deal to review a document without having to send multiple files to each other, saving resources and time by sharing information more efficiently.[65]

The ABA recognizes the value of the innovations that result from hackathons.[66] In 2014, the ABA created the Hackcess to Justice Legal Hackathon, an annual access to justice hackathon hosted by Suffolk University Law School.[67] The 2014 winner, attorney William Palin, developed PaperHealth, a free iOS (Apple brand) app that allows individuals to create "legally binding health care proxies, and non-binding living wills" within minutes.[68] Palin later became the founder of Developing Justice, an initiative within Harvard Law School's clinical programs that uses technology to increase access to justice.[69]

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62. *See* Croft, *supra* note 5.

63. *See* Samar Warsi, *Young Lawyers Seek to Shake Up Legal Profession with Mobile Apps*, BOS. GLOBE (Nov. 24, 2014), https://www.bostonglobe.com/business/2014/11/24/young-lawyers-seek-shake-legal-profession-with-mobile-apps/bnNLhfoceZumFg9CrVA3gI/story.html. *See generally Our Story*, LEGAL HACKERS, https://legalhackers.org/ our-story/ (last visited Apr. 2, 2019) (describing the creation of the Legal Hackers movement).

64. *See* Warsi, *supra* note 63.

65. *Id.*

66. In fact, legal tech conferences are becoming a worldwide forum to develop and promote legal tech that increases access to legal services. *See Why Legal Tech Conferences Have Become a Global Phenomenon*, *supra* note 54.

67. *See generally Hackcess to Justice 2014 Is an Access to Justice Hackathon Presented by the ABA Journal and Partners*, DEVPOST, https://hackcessto justice2014.devpost.com/ (last visited Apr. 2, 2019) (describing the creation of the first access to justice hackathon).

68. Matthew Yospin, *Results of the ABA Journal's Hackcess to Justice Hackathon*, L. TECH. TODAY (Aug. 26, 2014), http://www.lawtechnologytoday.org/2014/08/results-of-aba-journal-hackcess-to-justice-hackathon/; *see also PaperHealth App*, L. OFF. WILLIAM PALIN, http://cambridgelaw.org/ (last visited Apr. 2, 2019).

69. *See About Developing Justice @ HLS*, DEVELOPING JUST. HARV. L. SCH., http://104.131.126.199/?page_id=1200 (last visited Apr. 2, 2019) (describing Harvard Law's Developing Justice program).

By converting complicated legal processes into simple, step-by-step questions or eliminating the need to travel to an office or organization to get assistance, the technological innovations listed below are increasing access to justice.

1. Guided Interviews

Guided interviews are software programs that simplify the completion of legal forms or drafting of legal documents by walking the end user through a series of simple questions and then using the answers to draft the legal document for the end user.[70] As an access to justice tool, guided interviews simplify the ability to draft and complete complicated legal forms and documents. A2J Author is one such program.[71]

Created in 2004 with the help of TIG funds, A2J Author is an online program that uses decision tree[72] formulas and document assembly software[73] to help legal aid organizations, courts, and law students create "guided interviews" that help self-represented individuals draft legal documents.[74] The A2J Guided Interview breaks down the information required to fill out legal forms or to draft motions into an easy-to-understand series of questions. Videos, audio, and graphics provide additional help and information, and provide the option of various communication formats to serve diverse end users.[75] A document assembly program called HotDocs converts the answers into legal forms, such as complaints, answers, and motions related to

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70. *See What Does an A2J Guided Interview Look Like?*, A2J AUTHOR, https://www.a2jauthor.org/content/what-does-a2j-guided-interview-look (last visited Apr. 2, 2019) (describing how guided interviews work).

71. *See id.*

72. Decision tree interviews follow a flow-chart-like formula to provide the appropriate answer. It uses theories of probability to deduce what the next step will be based on the answer choice. *See, e.g.*, Madhu Sanjeevi, *Chapter 4: Decision Tree Algorithms*, MEDIUM (Oct. 2, 2017), https://medium.com/deep-math-machine-learning-ai/chapter-4-decision-trees-algorithms-b93975f7a1f1.

73. *See FYI: Document Assembly*, AM. BAR. ASS'N. (Apr. 27, 2011), https://www.americanbar.org/groups/departments_offices/legal_technology_resources/resources/charts_fyis/docassembly/ (explaining that document assembly software automates the creation of legal documents. These programs use templates to ask a series of questions to fill in variables in the legal document. Depending on the answers, the software includes or erases template language, as appropriate to create the final document.).

74. Jessica Frank, *A2J Author, Legal Aid Organizations, and Courts: Bridging the Civil Justice Gap Using Document Assembly*, 39 W. NEW ENG. L. REV. 251, 253 (2017).

75. *See What Does an A2J Guided Interview Look Like?*, *supra* note 70.

the specific subject matter at issue.[76] The program then sends information directly to a designated office's case management system to assist with intakes, or creates documents that it can file directly with a court or that the end user can print and file.[77]

2. Mobile Software Applications

Some technologies increase access to justice by removing barriers related to travel, transportation, and time. For example, mobile software applications ("apps") have expanded how individuals access the law and legal services. Mobile apps are software applications that are designed to provide a limited or special service and run on mobile devices like smartphones[78] or computer tablets.[79] Legal mobile apps can help individuals "self-navigate" through the various stages of the legal process, from identifying if there is a legal issue, to guiding users through legal choices, to helping users draft and file legal documents.[80] If self-representation is not the appropriate solution, mobile apps can guide individuals through issue identification to provide referrals to legal service providers.[81]

Through secure client portals and messaging apps, attorneys and clients can quickly and privately share information, as well as draft and review documents.[82] There are also apps that allow clients to e-sign[83] documents, which offers quicker processing times when

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76. Frank, *supra* note 74, at 253.

77. *See What Does an A2J Guided Interview Look Like?*, *supra* note 70.

78. *See What is a Smartphone?* DIGITAL UNITE, https://www.digitalunite.com/guides/smartphones/what-is-a-smartphone (last visited Apr. 2, 2019 (defining a smartphone as a mobile device that offers multiple functions similar to those of a cell phone and a computer).

79. *See Tablet*, PCMAG, https://www.pcmag.com/encyclopedia/term/52519/tablet (last visited Apr. 2, 2019) (defining a computer tablet as a "general-purpose computer contained in a touchscreen panel").

80. *See* Richard S. Granat & Stephanie Kimbro, *The Future of Virtual Law Practice*, *in* THE RELEVANT LAWYER: REIMAGINING THE FUTURE OF THE LEGAL PROFESSION 85, 85–86 (Paul A. Haskins ed., 2015).

81. *See* Michael Kordvani, *How Lawyers Can Use Mobile Apps*, L. TECH. TODAY (Dec. 5, 2017), http://www.lawtechnologytoday.org/2017/12/lawyers-can-use-mobile-apps/. *See generally* Joe Dysart, *Justice in Your Palm*, A.B.A. J., Apr. 2015, at 56–59 (describing twenty different mobile applications that provide easier access to legal help).

82. *See* Kordvani, *supra* note 81.

83. E-signing allows the end user to virtually sign a document without printing, scanning, or faxing. *See Learn What It Means to eSign a Document*, DOCUSIGN, https://www.docusign.com/esignature/what-does-it-mean-esign-documents (last visited Apr. 2, 2019).

working with conflicting schedules or with clients who cannot easily travel to the law office.[84]

JustFix.nyc is a free mobile legal app that increases access to justice by assisting New Yorkers with issues related to neglectful housing situations.[85] New York City, like many other urban areas, is experiencing changes in the housing market that are displacing low-income tenants[86] or forcing many to live in subpar conditions.[87] The app allows individuals to build their case against their landlord or management company and file complaints directly from their smartphones.[88] Once the app is downloaded, users can create their own case file, gather evidence, keep track of documents, and find referral sources to help them file actions against their landlords.[89] The app is intended to make it easy for users to create a case file that can be printed and filed with the court.[90] All of the information is saved securely on the app, allowing users to refer back to their case file much like a traditional law office. The app also provides a "dashboard" for tenant advocates and community groups to share information and keep track of legally problematic landlords and buildings.[91] In 2017, Legal Services of NYC received $102,750 in TIG funds to integrate

84. For example, a program called Docusign allows users to "securely and efficiently" sign and return the documents through the mobile app. *See DocuSign Mobile Solutions*, DOCUSIGN, https://www.docusign.com/features-and-benefits/mobile (last visited Apr. 2, 2019).

85. JUSTFIX.NYC, https://www.justfix.nyc/ (last visited Apr. 2, 2019) (describing an app that provides a mechanism for low-income tenants to contest sub-standard living conditions, in addition to providing instruction on donating to support the cause).

86. *See* Ameena Walker, *See the NYC Neighborhoods Where Affordability Is Most at Risk*, CURBED N.Y. (May 10, 2018, 3:46 PM), https://ny.curbed.com/2018/5/10/17340564/nyc-affordable-housing-crisis-at-risk-neighborhoods-report (describing the affordable housing crisis in NYC); *see also Speaker and Former Acting Public Advocate for the City of New York*, N.Y. CITY COUNCIL, https://council.nyc.gov/public-advocate/ (last visited Apr. 2, 2019) (describing the services provided by the Public Advocate for the City of New York, including services related to housing issues).

87. *See generally* Alana Semuels, *New York City's Public-Housing Crisis*, ATLANTIC (May 19, 2015), https://www.theatlantic.com/business/archive/2015/05/new-york-citys-public-housing-crisis/393644/ (detailing examples of poor housing conditions that many New Yorker's face).

88. JUSTFIX.NYC, *supra* note 85.

89. *Id.*

90. *Id.*

91. *Id.*

LawHelp Interactive with JustFix.nyc to provide document assembly assistance to JustFix.nyc end users.[92]

3. Remote Legal Services Through Client Portals

Client portals are multi-service software programs that clients access through a law firm or a third party website, which help lawyers and clients virtually manage communications, interactions, and document exchanges.[93] They offer the ability to use the Internet to virtually communicate and transfer documents between lawyers and clients through password-encrypted programs.[94] Portals make law practice more efficient by facilitating billing (making it easier to keep track of tasks and time-keeping), and delegating tasks to clients through task lists and project status reports.[95] Password requirements and message encryptions make client portals more secure than communicating through email.[96]

Client portals can also enhance access to justice. Lack of transportation and time, as well as the cost of legal visits, are common barriers to legal services.[97] Client portals reduce the need to travel and take time off work to exchange documents because documents are exchanged virtually through encrypted programs. They also allow the attorney to be more efficient with their time, reducing costs to paying clients. Further, clients can check on the status of their cases on their own, without having to pay their attorney to review their files and then draft an update email or letter. This reduces billing hours for simple tasks and frees the attorney's time for more complicated legal matters.

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92. *LSC Awards Nearly $4 Million in Technology Grants to Legal Aid Organizations*, LEGAL SERVS. CORP. (Nov. 9, 2017), https://www.lsc.gov/media-center/press-releases/2017/lsc-awards-nearly-4-million-technology-grants-legal-aid.

93. Richard S. Granat, *Really Virtual: Putting a Practice Online Means Access, Efficiency, and Upkeep*, A.B.A. J., Mar. 2017, at 28, 29.

94. *See* Granat & Kimbro, *supra* note 80, at 85–86.

95. *See* Teresa Matich, *A Guide to Using Client Portals at Your Law Firm*, ABOVE L. (June 6, 2018, 5:29 PM), https://abovethelaw.com/2018/06/a-guide-to-using-client-portals-at-your-law-firm/ (explaining how case management software, like Clio Connect, helps lawyers through cloud-based practice management software).

96. *See* Granat, *supra* note 93, at 29 (explaining the security measures that characterize a client portal).

97. *See* LEGAL SERVS. CORP., *supra* note 8, at 13, 45; *see also* Victoria M. Esposito, *Barriers to Providing Civil Legal Services to Rural Clients*, 17 N.Y. ST. B. ASS'N GOV'T, L. & POL'Y J. 1, 39 (2018); OCED & OPEN SOC'Y FOUND., LEVERAGING THE SDGS FOR INCLUSIVE GROWTH: DELIVERING ACCESS TO JUSTICE FOR ALL 7–8 (2016), https://www.oecd.org/gov/delivering-access-to-justice-for-all.pdf.

Clio Connect is an example of a client portal that provides a secure platform through which firms can share resources and work with clients and co-counsel, allowing all parties to review and work together on case developments.[98] Clio further supports the expansion of access to justice by offering an Academic Access Program that provides free access to many of its client management features to law school clinical programs and non-clinic classes.[99]

4. Chatbots

Further on the spectrum of legal technological innovations are chatbots. These programs incorporate artificial intelligence to analyze fact patterns and provide recommendations or solutions. A chatbot is a virtual software program in which the user communicates with a virtual machine that imitates human conversations through voice and/or text.[100] Chatbots use artificial intelligence (AI) technology to translate input data into certain output values by recognizing patterns in the data and developing algorithms from the patterns that can be used to create natural language processing that mimics human conversation.[101] The AI technology allows computers to perform tasks that normally require human intelligence, such as recognition, decision-making, and translation of information.[102] Chatbots expand access to justice by providing self-represented litigants with "personalized" legal guidance to help identify legal issues. Chatbots provide basic information that helps individuals decide among their options, including whether they need further legal assistance. Chatbots can also connect individuals to legal service providers after the program helps the individual identify their legal issue.[103]

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98. *See Overview of Clio Connect for Contacts and Clients*, CLIO, https://support.clio.com/hc/en-us/articles/203149194-Overview-of-Clio-Connect-for-Contacts-and-Clients (last visited Apr. 2, 2019).

99. *See Clio Academic Access Program (CAAP)*, CLIO, https://www.clio.com/partnerships/academic-access/ (last visited Apr. 2, 2019) (describing Clio's Academic access program).

100. *See* Mai-Hanh Nguyen, *How Artificial Intelligence & Machine Learning Produced Robots We Can Talk to*, BUS. INSIDER (Oct. 6, 2017, 4:55 PM), http://www.businessinsider.com/what-is-chatbot-talking-ai-robot-chat-simulators-2017-10.

101. *Id.*

102. *See* Lauri Donahue, *A Primer on Using Artificial Intelligence in the Legal Profession*, JOLT DIG. (Jan. 3, 2018), https://jolt.law.harvard.edu/digest/a-primer-on-using-artificial-intelligence-in-the-legal-profession.

103. *See* Margaret Hagan, *LawBot As a Chatbot Lawyer for Crim*, OPEN LAW LAB (Oct. 31, 2016), http://www.openlawlab.com/2016/10/31/lawbot-as-a-chatbot-lawyer-for-crim/.

DoNotPay.com was created by then eighteen-year-old Joshua Broder.[104] Originating in London, DoNotPay.com also serves cities all over the United States and is regarded as the "world's first robot lawyer"—it assists individuals who are trying to navigate the law without an attorney.[105] The program initially began as a chatbot for people fighting parking tickets.[106] To help users fight tickets, DoNotPay.com uses a text chat format to ask a series of questions about the circumstances that led to the particular issue.[107] The program then generates an appeal based on the answers provided.[108] DoNotPay.com has since expanded significantly into other areas that impact socio-economic related justice issues.[109] It now helps individuals with landlord-tenant issues, credit card fraud claims, workplace discrimination, and cancellation of pesky auto-renewal program charges.[110] The help is free of charge and is compatible with Android devices.[111] If the bot is unable to answer the questions, users of the app are encouraged to email DoNotPay staff who promise to either tackle the question or connect them with an appropriate referral resource.[112]

While DoNotPay seeks to assist individuals who want to navigate the legal system on their own, Gideon uses chatbots to connect individuals with lawyers by helping legal service providers determine which cases to take, when they can offer help, how they can help, and who can offer the help—all in an effort to maximize time and money.[113] Gideon's AI allows law firms to build their own chatbots

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104. Victor Li, *Joshua Browder: His 'Chat' Is Not Just Talk*, AM. BAR ASS'N J., (Sept. 14, 2017, 8:30 AM), http://www.abajournal.com/legalrebels/article/joshua_browder_donotpay_legal_chatbot.

105. Robert Ambrogi, *DoNotPay Adds 1,000 Legal Bots, Plus Service for Others to Create Their Own*, ABOVE L. (July 17, 2017, 2:03 PM), https://abovethelaw.com/2017/07/donotpay-adds-1000-legal-bots-plus-service-for-others-to-create-their-own/; *see also* Zane Ice, *The Playing Field of Legal Chatbots*, MEDIUM (June 29, 2018), https://medium.com/legal-design-and-innovation/the-playing-field-of-legal-chatbots-58f2843ee9f4 (detailing a list of innovative chatbots that are expanding access to justice).

106. *See* Ambrogi, *supra* note 105; Ice, *supra* note 105.

107. *See* Li, *supra* note 104.

108. *Id.*

109. *See* Ambrogi, *supra* note 105; Ice, *supra* note 105.

110. *See* Ambrogi, *supra* note 105.

111. *See* Li, *supra* note 104.

112. *See* Ambrogi, *supra* note 105.

113. "Gideon" was co-founded by attorney Jared D. Correia and Elan Fields, StartingBloc Fellow and legal technology entrepreneur. *See* GIDEON, https://www.gideon.legal/ (last visited Apr. 2, 2019).

that focus on specific practice areas or transactions.[114] The program screens intake information based on criteria provided by the law firm, including historical law firm information—such as how many similar cases they have handled in the past, who worked on the cases, and how long they took to resolve the issue—and other large sets of data related to case patterns and trends.[115] Based on the intake information and historical case data, AI technology makes predictions about case value, expenses, and staff utilization.[116]

The technology behind Gideon's AI promises to have a positive impact on access to justice. Since the access to justice gap primarily exists at the engagement or intake level, Gideon offers the ability to facilitate the intake process for legal aid service providers.[117] Gideon can act as a real-time triage to route individuals to appropriate service providers and referrals.[118] This could potentially save a great amount of time and resources for the individuals seeking assistance, as well as for the legal aid organizations that provide the services.

The innovations listed above are just a few examples of the ways that legal technology is expanding access to justice. Problems arise, however, when the technology innovations do not account for diversity among end users. The next sections will identify some of the adverse outcomes of failing to incorporate culturally competent design into legal technology.

D. Shortcomings of Legal Technological Innovations

Legal technological innovations, such as guided interviews and chatbots, have the potential to increase access to justice by making legal services more affordable, less complicated, and more accessible to individuals who historically have had limited or no access to the law. Without intentional consideration of end users and their needs, limits, and preferences, technology can lead to end user frustration, perpetuate implicit biases, compromise users' privacy, and create

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114. *Id.*
115. *Id.*
116. Id.
117. *See* Richard Zorza, *The Access to Justice "Sorting Hat": Towards a System of Triage and Intake that Maximizes Access and Outcomes*, 89 DENV. U. L. REV. 859, 859, 862 (2012), https://www.srln.org/system/files/attachments/Zorza%20Sorting-Hat%20Article%20%282011%29.pdfhttps://www.srln.org/system/files/attachments/Zorza%20Sorting-Hat%20Article%20%282011%29.pdf; GIDEON, *supra* note 113. *See generally Client Access & Intake*, LEGAL SERVS. CORP., https://www.lsc.gov/grants-grantee-resources/resources-topic-type/client-access-intake (last visited Apr. 2, 2019) (detailing possible ways to improve the intake system).
118. GIDEON, *supra* note 113.

additional barriers that will prevent access to legal services. Recent studies and reviews of the newest legal technology have, in some cases, uncovered unintentional consequences that expose end users to such harms, risks, and difficulties.[119] As described more fully in the sections below, many of these issues could be avoided if legal professionals and technology designers incorporate culturally competent design.

1. Users May Unknowingly Compromise Privacy

Lack of privacy and exposure of personal information is a serious concern in all aspects of technology.[120] In the legal context, a privacy breach or disclosure of confidential information can have devastating consequences due to the sensitive nature of the information communicated.[121] The stakes are particularly high for low-income and immigrant individuals who may not understand that they are sharing their private information by using an app or filling out an online survey.[122] They may use an app because they believe the benefits of using it outweigh any security risks, or because they believe that the government already has access to a great amount of information about them so there is no need to worry about a security risk.[123]

The problem, however, is that most online privacy tools are self-regulating.[124] This leaves individuals on their own to understand the limits of the privacy provided by the particular technology and requires that individuals proactively change or adjust settings to receive the most—or for that matter, any—protection of personal information that they share with a program or application.[125] Lack of tech-based skills, education, access to technology, and limited English

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119. *See, e.g.*, Julia Angwin et al., *Machine Bias*, PROPUBLICA (May 23, 2016), https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing (discussing the negative impact of legal technology used to predict future criminals).

120. Shawn Moynihan et al., *Law Firms and Cyber Insurance: Under-Educated and Overexposed*, PROPERTYCASUALTY360 (July 23, 2018, 12:30 AM), https://www.propertycasualty360.com/2018/07/23/law-firms-and-cyber-insurance-under-educated-and-o/.

121. *Id.*

122. TAMY GUBEREK ET AL., KEEPING A LOW PROFILE? TECHNOLOGY, RISK AND PRIVACY AMONG UNDOCUMENTED IMMIGRANTS 1–2 (Apr. 2018), https://dl.acm.org/citation.cfm?doid=3173574.3173688.

123. *Id.* at 9.

124. Mary Madden et al., *Privacy, Poverty, and Big Data: A Matrix of Vulnerabilities for Poor Americans*, 95 WASH. U. L. REV. 53, 113 (2017).

125. *Id.*

proficiency can cause users to misunderstand, mismanage, or fail to protect their privacy when engaging with online technology.[126] It is a social justice issue that leaves vulnerable individuals at risk of exposing private information about things like their finances, immigration status, and medical history.

The importance of providing privacy terms that are simple to understand is even more pronounced after elimination of net neutrality rules.[127] Internet Service Providers (ISPs) may now monitor, collect, and sell information about individuals' use of and activities on the Internet.[128] The rules do not require "opt-in" consent or permission of the end user before an ISP can monitor someone's use of the Internet.[129] An ISP only has to offer "opt-out" consent, whereby the ISP may monitor Internet use unless the end user takes steps to "opt-out."[130] However, research shows that opting-out is unlikely to happen, particularly with low-income and immigrant communities.[131]

The cost of using networks that provide more privacy protection is also a factor, as low-income individuals may not be able to afford home Internet service plans,[132] which offer more protection than public "hotspots."[133] Sixty percent of people in low-income households are

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126. *Id.* at 118.

127. Net neutrality is an understanding that the Internet should treat all content the same. This means that ISPs should not be able to charge different rates or change the speed of data based on content. *See generally Restoring Internet Freedom*, FED. COMM. COMMISSION, https://www.fcc.gov/restoring-internet-freedom (last visited Apr. 2, 2019) (explaining the Restoring Internet Freedom Order).

128. Justin S. Brown, *Broadband Privacy Within Network Neutrality: The FCC's Application & Expansion of the CPNI Rules*, 11 U. ST. THOMAS J.L. & PUB. POL'Y 45, 54 (2017) (citing In the Matter of Protecting the Privacy of Broadband and Other Telecommunications Services, 31 FCC Rcd. 13911, 13913.

129. Gigi Sohn, *The FCC's Plan to Kill Net Neutrality Will Also Kill Internet Privacy*, VERGE (Apr. 11, 2017, 11:30 AM), https://www.theverge.com/2017/4/11/15258230/net-neutrality-privacy-ajit-pai-fcc.

130. *Id.*

131. *Id.*; *see* GUBEREK, *supra* note 122, at 8.

132. *See* Allan Holmes & Chris Zubak-Skees, *These Maps Show Why Internet is Way More Expensive in the US than Europe*, VERGE (Apr. 1, 2015, 8:00 AM), https://www.theverge.com/2015/4/1/8321437/maps-show-why-internet-is-more-expensive-us-europe-competition (stating that higher broadband prices "make it difficult for low- to middle-income families to afford fast internet service, which has become a necessity for job training, education, health care.").

133. A hotspot is a wireless access point that is most often located in a public area that offers Wi-Fi, or wireless Internet connectivity. Melanie Pinola, *Mobile Work: What Is a Wi-Fi Hotspot?*, LIFEWIRE (July 12, 2018), https://www.lifewire.com/wi-fi-hotspot-definition-2377357. These access points are most often located in cafes, airports, libraries, and hotels. *Id.* However, because they are public, they do pose a serious security concern. *Id.* Hackers have an easier time hacking into hotspot networks where they can steal user information from programs like mobile banking apps and social

concerned about their financial information being stolen, forty-eight percent are concerned about Internet scams, and fifty-two percent are worried that they do not know what data is collected and how it is used. [134] Although low-income households are worried about online security, cost seems to be a deterring factor in taking steps to protect their information.[135]

The worry about Internet security is even higher for foreign-born Latinxs. Sixty-three percent of foreign-born Latinxs are concerned about Internet scams, and foreign-born Latinxs are more likely to be worried about what and how much of their data is being collected and used than white American citizens.[136] Fifty-nine percent of foreign-born Latinx believe it would be difficult for them to figure out how to protect their online information.[137]

Although low-income and immigrant communities are worried about Internet security and privacy, they may not have the tools, money, or ability to take action to protect themselves. Legal professionals must ensure that they are providing products and services that protect clients' and end users' privacy and personal information.

2. Artificial Intelligence May Perpetuate Implicit Biases

Artificial intelligence, (AI), is one of the hottest legal technology trends. Legal professionals are using AI to draft litigation documents, analyze facts, make determinations, and identify outcomes.[138] Criminal courts, for example, are using AI to facilitate sentencing and bail determinations.[139] Examination of the results, however, has revealed that implicit biases in the AI formulas are skewing the

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media pages. *Id. See generally Wi-Fi vs. Mobile Broadband: What's the Difference?*, SMART COMPUTING SOLUTIONS, INC. (Dec. 5, 2011), http://www.totallysmart.com/?p=39 (explaining the security levels of Wi-Fi compared to "hotspots" or "3G and 4G" plans).

134. MARY MADDEN, PRIVACY, SECURITY, AND DIGITAL INEQUALITY 2 (Sept. 27, 2017), https://datasociety.net/pubs/prv/DataAndSociety_PrivacySecurityandDigitalInequality.pdf.

135. *Id.*

136. *Id.* at 5.

137. *Id.* at 11.

138. *See* Lauri Donahue, *A Primer on Using Artificial Intelligence in the Legal Profession*, JOLT DIG. (Jan. 03, 2018), https://jolt.law.harvard.edu/digest/a-primer-on-using-artificial-intelligence-in-the-legal-profession.

139. *See* Matt O'Brien & Dake Kang, *AI in the Court: When Algorithms Rule on Jail Time*, US NEWS (Jan. 31, 2018), https://www.usnews.com/news/best-states/ohio/articles/2018-01-31/ai-in-the-court-when-algorithms-rule-on-jail-time; *see also* Angwin et al., *supra* note 119.

results in ways that negatively impact defendants of color.[140] While not strictly an access to justice issue, the biased results highlight the dangers of using technology that does not account for diversity and cultural associations.

A ProPublica study of an AI program called Correctional Offender Management Profiling for Alternative Solutions (COMPAS) found that COMPAS's recidivism algorithm, which tests whether a defendant is likely to commit another offense, was incorrectly calculating that black defendants were at higher risk of re-offending than white defendants, who were mistakenly deemed to be lower risk.[141] Based on answers to a series of questions concerning the defendant's family, friends, association with gangs, residency, finances, and emotional well-being—which are either answered by the defendant or gathered by prison staff from information in public records—COMPAS assigns a score that predicts the likelihood that a defendant will commit another crime.[142] The problem arises when correlations between risk factors and answers implicitly implicate race.

AI learns through the strength of associations within a network—good things are related to X, and bad things are related to Y.[143] The results rely on correlations from the "real world" that are often biased.[144] Subconscious categories, or "schemas," help individuals organize information through inferences.[145] Unless the designers deliberately consider the issue of biased schemas within their design, AI may promote implicit biases that negatively impact the

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140. *See* O'Brien & Kang, *supra* note 139; *see also* Jason Tashea, *Risk-Assessment Algorithms Challenged in Bail, Sentencing and Parole Decisions*, A.B.A. J., Mar. 2017, at 54, 57.

141. Angwin et al., *supra* note 119; *see* Jeff Larson et al., *How We Analyzed the COMPAS Recidivism Algorithm*, PROPUBLICA (May 23, 2016), https://www.propublica.org/article/how-we-analyzed-the-compas-recidivism-algorithm.

142. *See generally Sample COMPAS Questionnaire*, https://www.documentcloud.org/documents/2702103-Sample-Risk-Assessment-COMPAS-CORE.html (last visited Apr. 2, 2019) (suggesting that repeat offenders may be identified prior to their repeat offense).

143. *See* Curt Levey & Ryan Hagemann, *Algorithms with Minds of Their Own*, WALL ST. J., Nov. 13, 2017, at A15.

144. *See* Hannah Devlin, *AI Programs Exhibit Racial and Gender Biases, Research Reveals*, GUARDIAN (Apr. 13, 2017, 2:00 PM), https://www.theguardian.com/technology/2017/apr/13/ai-programs-exhibit-racist-and-sexist-biases-research-reveals.

145. Paul Tremblay & Carwina Weng, *Multicultural Lawyering: Heuristics and Biases*, *in* THE AFFECTIVE ASSISTANCE OF COUNSEL: PRACTICING LAW AS A HEALING PROFESSION 143, 169–70 (Marjorie A. Silver ed., 2007).

communities that are in most need of the help.[146] In the case of sentencing, the COMPAS AI program unfairly resulted in defendants receiving harsher sentences based on implicit racial biases.[147]

The issue is further complicated because the individuals who are designing AI programs come from very similar backgrounds. AI designers are typically highly-educated, cisgender men—most of whom are Caucasian or Asian.[148] Inferences and the resulting AI algorithms are created by the daily experiences of the designers.[149] Eventually, certain behavior is associated with characteristics that we categorize into groups.[150] Programs that rely on AI to calculate legal decisions, like COMPAS, consequently reflect their creators' biases.[151] Because AI creators tend to be of similar backgrounds, they also share similar beliefs, experiences, and preferences that do not reflect the beliefs, experiences, and preferences of low-wage immigrant individuals or other marginalized communities. The concern then becomes that AI creators may pass along negative stereotypes based on unconscious expectations that a person will act a particular way based on unfamiliar traits and characteristics, as demonstrated by the COMPAS re-offender predictions.[152]

In fact, data shows that, in particular, AI can adopt its creators' understanding of people of color—or lack thereof.[153] Groups of

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146. *See* Devlin, *supra* note 144 (describing studies that suggest that artificial intelligence programs may foster and promote implicit social and racial biases).

147. *See* Angwin et al., *supra* note 119.

148. *See* Kate Crawford, *Artificial Intelligence's White Guy Problem*, N.Y. TIMES (June 25, 2016), https://www.nytimes.com/2016/06/26/opinion/sunday/artificial-intelligences-white-guy-problem.html; *see also* Morgan Childs, *For More Diversity in AI, a Look to the Next Generation*, IBM (Sept. 18, 2017), https://www.ibm.com/blogs/insights-on-business/ibmix/diversity-ai-look-next-generation/ (observing that Asian men join white men in dominating the United States' biggest technology companies).

149. Jayshree Pandya, *Can Artificial Intelligence be Biased?*, Forbes (Jan. 20, 2019, 10:53 PM), https://www.forbes.com/sites/cognitiveworld/2019/01/20/can-artificial-intelligence-be-biased/#c68abcc7e7c7. This phenomenon can be seeing in lawyering as well. *See* Paul R. Tremblay, *Interviewing and Counseling Across Cultures: Heuristics and Biases*, 9 CLINICAL L. REV. 373, 408 (2002) (suggesting a requirement to identify assumptions in day-to-day experiences to ensure culturally competent lawyering).

150. Pandya, *supra* note 149; *see also* Tremblay, *supra* note 149, at 376 (stating that assumptions about people's behavior are influenced by culture and interpersonal patterns).

151. *See* Devlin, *supra* note 144.

152. *See id.*

153. *See* Will Byrne, *Now Is the Time to Act to End Bias in AI*, FAST COMPANY (Feb. 21, 2018), https://www.fastcompany.com/40536485/now-is-the-time-to-act-to-stop-bias-in-ai.

characteristics that are more familiar are more favored.[154] A University of Massachusetts study showed that AI's capacity for natural language processing decreased when exposed to African American vernacular, failing to recognize it as English.[155] Google's first forms of AI did not recognize black people as humans, camera software has mistaken Asians as having their eyes closed when they were open, and voice command technology has failed to recognize females.[156] A more diverse design team could anticipate some of these issues and account for them in the program design.

To reduce the likelihood that programmers are unintentionally promoting biased stereotypes, programmers need to work with legal professionals to study and analyze how diverse communities will be impacted by the computations, and carefully review the data that AI programmers are inputting into calculations and formulas to take into consideration cross-cultural factors that may impact the outcomes.

The sections in Part II demonstrate why awareness and consideration of the needs and barriers of end users will expand access to justice.

II. THE NEED FOR CULTURALLY COMPETENT LEGAL TECHNOLOGY

While technology has the potential to increase access to justice by facilitating communications, expanding the availability of resources, and providing legal services to more individuals, the access needs to be meaningful. It takes thought and careful planning to virtually communicate complicated legal concepts and theories to culturally diverse individuals through a website, client portal, or mobile application. Technology does not eliminate the cultural barriers that exist with person-to-person communications. There is an even greater need to understand the end user's perspective, practices, and values in order to communicate effectively through the Internet.[157] Virtual communication makes it difficult to identify "kinesic" cultural cues,[158] such as facial expressions and changes in tone of voice, making it more

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154. *See* Tremblay, *supra* note 149, at 383 (observing that lawyering skills are geared toward catering to dominant Western characteristics rather than those of minorities).

155. *See* Byrne, *supra* note 153.

156. *Id.*; Crawford, *supra* note 148.

157. Niki Davis et al., *Intercultural Competence and the Role of Technology in Teacher Education*, 4 CONTEMP. ISSUES TECH. & TCHR. EDUC. 384, 385 (2004).

158. Tremblay, *supra* note 149, at 392 (defining "kinesic" as "the way in which bodily movements are used and interpreted).

important to anticipate issues that individuals may face when using a kiosk or app.[159]

Legal professionals and legal technology must be responsive to diverse client demographics by acknowledging and adjusting to cultural differences between the attorney and the client.[160] The ability to communicate across cultural boundaries is essential, not just an added value. Cultural differences affect how legal professionals value strategies and options that will influence the decision-making process.[161] The value of cross-cultural competence as a fundamental legal skill will only continue to increase as the communities that are served become even more diverse.[162] According to the U.S. Census Bureau, the United States will experience a significant shift in demographics by 2044,[163] whereby racial and ethnic minorities will become the new majority.[164] The ability to serve a diverse community will become even more critical. Attorneys adopting technology to

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159. *See* Davis et al., *supra* note 157, at 391 (discussing difficulties faced when applying technology to intercultural education).

160. There is a rich body of literature on cross-cultural lawyering and access to justice. Professors Susan Bryant and Jean Koh Peters' scholarship on culturally competent lawyering have greatly influenced legal education. *See generally* Sue Bryant & Jean Koh Peters, *Five Habits for Cross-Cultural Lawyering, in* RACE, CULTURE, PSYCHOLOGY, & LAW 48 (Kimberly Holt Barrett & William H. George eds., 2005) [hereinafter Bryant & Peters, *Five Habits*] (offering additional advice for lawyers to improve their cross-cultural experience); Susan Bryant & Jean Koh Peters, *Six Practices for Connecting with Clients Across Culture: Habit Four, Working with Interpreters and Other Approaches, in* THE AFFECTIVE ASSISTANCE OF COUNSEL: PRACTICING LAW AS A HEALING PROFESSION 183 (Marjorie A. Silver ed., 2007) [hereinafter Bryant & Peters, *Six Practices*] (stressing that lawyers must be sensitive to the cultural differences of their clients in order to assist them to the best of their ability); Susan Bryant, *The Five Habits: Building Cross-Cultural Competence in Lawyers*, 8 CLINICAL L. REV. 33, 42–43 (2001) [hereinafter Bryant, *The Five Habits*] (describing a process available to attorneys to supplement their cross-cultural skillset). Professors Paul Tremblay and Carwina Weng have also greatly contributed to the discussion by discussing the role of heuristics and biases in client communications. *See generally* Tremblay & Weng, *supra* note 145 (arguing that cross-cultural education will eliminate bias and improve access to justice for all).

161. *See* Tremblay & Weng, *supra* note 145, at 151.

162. Tremblay, *supra* note 149, at 373.

163. President Trump's anti-immigrant policies may delay U.S. 2010 Census predictions about the demographic shift for five years to approximately 2045 to 2049. *See* Jeff Stein & Andrew Van Dam, *Trump Immigration Plan Could Keep Whites in U.S. Majority for up to Five More Years*, WASH. POST (Feb. 6, 2018), https://www.washingtonpost.com/news/wonk/wp/2018/02/06/trump-immigration-plan-could-keep-whites-in-u-s-majority-for-up-to-five-more-years/?utm_term=.cfa63b5eebfc.

164. SANDRA L. COLBY & JENNIFER M. ORTMAN, U.S. CENSUS BUREAU, PROJECTIONS OF THE SIZE AND COMPOSITION OF THE U.S. POPULATION: 2014 TO 2060, at 1 (2015), https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf.

communicate with clients will need to be aware of cross-cultural behaviors, values, and beliefs to implement innovative legal technological tools that better serve a diverse range of end users.[165]

When legal practice incorporates cross-cultural concepts and theory, inter-relationships are improved, communication tends to be more accurate, and clients are better able to trust and accept information provided by the legal professional.[166] Individuals will give more credit and trust to information that coincides with their cultural beliefs and assumptions.[167] What an individual finds reliable and relevant, however, will depend on the individual's cultural background.[168]

The next sections demonstrate how awareness of cultural nuances are particularly important when gathering information and storytelling.[169]

A. Cultural Nuances Matter

It is critical for attorneys to be aware of the cultural nuances regarding storytelling when employing technology to gather client information and case details. Attorneys cannot expect every client to be able to input a story or series of events chronologically into a program application or a guided intake interview. Some cultures are not accustomed to telling stories in response to open-ended or non-directive questions.[170] If a virtual interview program asks a client to provide information chronologically, individuals who tell stories in a circular fashion that revolve around specific events or milestones may find themselves frustrated with the process.[171] Persons from cultures that do not typically recount free flowing narratives may have difficulty with open-ended ("who, what, when, where") questions due to the lack of structure.[172] This is particularly true of persons from groups that may distrust legal professionals.[173] To assist these end users, information-gathering technology needs to gather stories in

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165. *See* Bryant, *The Five Habits*, *supra* note 160, at 99.
166. Bryant & Peters, *Five Habits*, *supra* note 160, at 48–49.
167. *See id.* at 48.
168. *Id.* at 49–50.
169. *Id.*
170. *See* Tremblay, *supra* note 149, at 398 (explaining that cultures accustomed to verbal restraint struggled without structure and with non-directive techniques).
171. *See* Bryant & Peters, *Five Habits*, *supra* note 160, at 50 (describing cultural difficulties with linear storytelling).
172. *See* Tremblay, *supra* note 149, at 398.
173. *Id.* (noting that black individuals may distrust white attorneys and that trust is required for free-flowing conversations).

multiple formats to accommodate for differing story-telling preferences. A culturally conscious intake app or guided interview will capture a story told in and out of sequence of time, or in a circular format based on events.[174]

The manner in which conversations between individuals take place is also culturally defined. Technology used to gather information needs to respect the language, literacy, and values of culturally diverse end users. For cultures that discourage self-disclosure, such as some Latinx and Japanese cultures, a "tell me more" or "what happened next" interview approach may result in non-responsive answers.[175] During an in-person interview, a legal professional can ask for clarification or observe an individual's facial expression to identify confusion and frustration to help decipher meanings. When the individual is answering questions remotely, through a chatbot or guided interview, it is difficult (if not impossible) for the legal professional to know that the program is creating a barrier that does not allow the individual to tell her story. Without the full story, the legal professional will not be able to make a proper assessment of the issue.

Cultural preferences may also influence who makes the final decision on behalf of the client. Cultures that value actions and results will want the professional to provide more directions and solutions.[176] Individuals who expect attorneys to be more directive may become frustrated with a software program that only provides options and does not walk the user through the process or does not provide definitive steps for how to resolve the legal issue. Attorneys who are conscious about cross-cultural barriers will seek technology that is designed to work with different communication styles and account for diverse understandings and preferences.

The following subsections highlight some of the cultural nuances of the Latinx community, describe how community members are using technology, and identify technological barriers faced by many Latinxs. The information provided offers a glimpse of the cultural concepts and nuances that legal professionals and legal technology designers and engineers should gather and understand before developing software. Awareness of these distinctions is necessary not only to provide

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174. *See* Bryant & Peters, *Five Habits*, *supra* note 160, at 49–50 (giving examples of format differences across cultures).

175. Tremblay, *supra* note 149, at 398.

176. *Id.*

meaningful access to justice to the Latinx community, but to provide it to all end users.

B. Cultural Competency, Technology, and the Latinx Community

The theories and concepts discussed in this Article apply broadly to diverse communities and individuals. For illustration purposes, I have chosen to use the Latinx community as an example of a growing demographic with varied legal needs, and whose use of mobile technology to communicate and gather information is growing exponentially. Low-income and recent immigrants with limited English proficiency are particularly likely to fall into the access to justice gap. The statistics and data provided below highlight the factors and characteristics that culturally conscious legal technology designers should consider to have a better understanding of the end user's needs, preferences, and barriers. By taking these factors into consideration and modifying the design of the technology accordingly, culturally conscious technology designers can provide more meaningful access to justice not only to the Latinx community, but also to other communities that need increased access to quality legal services.

1. Many Latinxs Fall Within the Justice Gap

Studies show that although the Latinx community is making strides in terms of poverty, education, and other factors linked to socio-economic growth, there is still a long way to go. In October of 2010, the American Bar Association formed the ABA Presidential Commission on Hispanic Legal Rights and Responsibilities.[177] The purpose of the Commission was to "explore and report on the urgent legal issues and challenges facing the Latino population."[178] According to the report, many Latinx community members still face significant legal barriers and discrimination.[179] Based on information gathered from public forums, committee meetings, and additional research conducted by the Commission, the report found that the Latinx community continues to face legal barriers in the areas of: housing and employment discrimination, lack of quality education for youth,

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177. ABA COMM'N ON HISPANIC LEGAL RIGHTS AND RESPONSIBILITIES, LATINOS IN THE UNITED STATES: OVERCOMING LEGAL OBSTACLES, ENGAGING IN CIVIC LIFE 1, 2 (2013) [hereinafter ABA, LATINOS IN THE UNITED STATES], https://www.americanbar.org/content/dam/aba/images/commission_on_hispanic_legal_rights_responsibilities/hispanicreportnew.pdf.

178. *Id.* at 2.

179. *Id.* at 47.

access to quality healthcare, lack of equal voting rights, racial profiling, and wage theft.[180] Relative to white communities, the Latinx community also has higher rates of unemployment, and high numbers of Latinxs work in low-wage jobs, which result in lower median incomes.[181] Factors like English language proficiency and level of education impact their ability to obtain legal assistance.

Although the number of Latinxs living in poverty has fallen, it remains high. Consider that seventeen percent of Americans are Hispanic, yet twenty-two percent of Americans living in poverty are Hispanic.[182] Latinxs who have limited English proficiency ("LEP") are more likely to have lower levels of income and education.[183] With legal aid organizations turning down nearly one million low-wage people due to inadequate resources, many of the Latinxs living in poverty will fall within the justice gap.[184] As of 2017, sixty-two to seventy-two percent of low-income individuals received inadequate or no legal assistance, and studies find that as many as eighty percent of low-income people do not receive the legal aid they need.[185] Low-income individuals simply cannot afford legal services at "market" rate.

Low education levels within the Latinx community create barriers to access to justice. Although high school dropout rates have declined, Latinxs continue to have higher high school dropout rates than white, black, and Asian students.[186] Only forty-eight percent of foreign-born Hispanics have a high school diploma.[187] Economic factors keep Latinx youth from pursuing college educations. Only fifteen percent of Latinxs ages twenty-five to twenty-nine have a bachelor's degree or

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180. *Id.*

181. *Id.* at 48–49.

182. Antonio Flores, *Facts on U.S. Latinos, 2015: Statistical Portrait of Hispanics in the United States*, PEW RESEARCH RES. CTR. (Sept. 18, 2017), http://www.pewhispanic.org/2017/09/18/facts-on-u-s-latinos/#hispanic-rising-share; *see also* Antonio Flores, Gustavo Lopez & Jynnah Radford, *Facts on U.S. Latinos, 2015: Characteristics of the U.S. Hispanic Population: 1980-2015*, PEW RESEARCH RES. CTR. (Sept. 18, 2017), http://www.pewhispanic.org/2017/09/18/facts-on-u-s-latinos-trend-data/.

183. David Victorson et al., *eSalud: Designing and Implementing Culturally Competent eHealth Research with Latino Patient Populations*, 104 AM. J. PUB. HEALTH 2259, 2259 (2014).

184. *The Unmet Need for Legal Aid*, LEGAL SERVS. CORP., https://www.lsc.gov/what-legal-aid/unmet-need-legal-aid (last visited Apr. 2, 2019).

185. *Id.*

186. Jens Manuel Krogstad, *5 Facts About Latinos and Education*, PEW RESEARCH RES. CTR. (July 28, 2016), https://www.pewresearch.org/fact-tank/2016/07/28/5-facts-about-latinos-and-education/.

187. RICHARD FRY, PEW HISPANIC CTR., HISPANICS, HIGH SCHOOL DROPOUTS AND THE GED, at ii (May 13, 2010), http://www.pewresearch.org/wp-content/uploads/sites/5/reports/122.pdf.

higher.[188] Lower levels of education can make it difficult for an individual to understand or identify legal issues. Lower educational levels also make it more difficult to understand and follow complicated legal jargon and procedures, compounding the difficulties of trying to self-navigate the legal system without an attorney.

Low-income communities are also less likely to seek help from the civil justice system. Factors such as past negative experiences with the criminal justice system, challenges with receiving public benefit, perceptions that lack of fairness in criminal justice will mean lack of fairness in civil justice, beliefs that justice must be bought, and the desire to remain self-sufficient deter individuals from seeking help.[189] Out of the forty-seven percent of low-income individuals experiencing civil legal needs, only about twenty-five percent sought legal advice.[190] Low-income people—especially those who are non-white—are more likely to report experiencing civil legal problems than high-income people, but they are less likely than high-income people to use the legal system.[191] Given the extent to which Latinxs face serious legal barriers and the large numbers living with below average incomes, Latinxs are very likely to fall within the justice gap and are very much in need of legal technologies that will help bridge that gap.

The following demographics provide information about how large the Latinx community is, where they reside, their ability to speak and comprehend English, and their use of various technological tools. These attributes are additional examples of cultural nuances that legal professionals and technology designers should know and consider when designing and creating legal technology for diverse communities.

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188. Krogstad, *supra* note 186.

189. Sara Sternberg Greene, *Race, Class, and Access to Civil Justice*, 101 IOWA L. REV. 1263, 1266–67 (2016).

190. *Id.* at 1265.

191. *Id.* at 1266.

2. A Growing Latinx Population

The number of Hispanics living in the United States has more than doubled since 1980.[192] In 2016, approximately forty-five percent of United States immigrants were of Latinx or Hispanic heritage.[193] Latinxs are the largest and youngest minority group in the United States.[194] Given the size of the Latinx population, and the number who fall within in the access to justice gap for any of the factors listed above, legal technology meant to increase access to justice needs to consider the Latinx audience.

Latinxs are living all over the United States. Over half of the Latinx residents in the United States live in California, Texas, and Florida respectively.[195] While California has the largest Latinx population, other states appear to have fast growth of the Latinx communities: from 2000 to 2015, the population of Latinxs in Georgia more than doubled, the Latinx population in Florida increased by over eighty-five percent, and the Latinx population in Texas increased over sixty percent.[196] Southern states have also seen the Latinx community grow by up to forty-three percent in states like Alabama, Arkansas, Kentucky, North Carolina, and Tennessee.[197] It is important to know the demographics of the service area for which the technology is intended, especially if the technology will provide state or local jurisdiction specific legal assistance. Knowledge of the local demographics will also guide the legal professionals and technology

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192. Renee Stepler & Anna Brown, *2014, Hispanics in the United States Statistical Portrait*, PEW RES. CTR. (Apr. 19, 2016), http://www.pewhispanic.org/2016/04/19/2014-statistical-information-on-hispanics-in-united-states/.

193. Jie Zong, Jeanne Batalova & Jeffrey Hallock, Frequently Requested Statistics on Immigrants and Immigration in the United States, Migration Pol'y Inst. (Feb. 8, 2018), https://www.migrationpolicy.org/article/frequently-requested-statistics-immigrants-and-immigration-united-states.

194. *Between Two Worlds: How Young Latinos Come of Age in America*, PEW RES. CTR. (July 1, 2013), http://www.pewhispanic.org/2009/12/11/between-two-worlds-how-young-latinos-come-of-age-in-america/.

195. *Hispanics in the US Fast Facts*, CNN (Mar. 22, 2018, 1:14 PM), https://www.cnn.com/2013/09/20/us/hispanics-in-the-u-s-/index.html; *see also Facts for Figures: Hispanic Heritage Month 2017*, U.S. CENSUS BUREAU (Aug. 31, 2017), https://www.census.gov/newsroom/facts-for-features/2017/hispanic-heritage.html.

196. Antonio Flores, *How the U.S. Hispanic Population Is Changing*, PEW RES. CTR. (Sept. 18, 2017), http://www.pewresearch.org/fact-tank/2017/09/18/how-the-u-s-hispanic-population-is-changing/.

197. ABA, LATINOS IN THE UNITED STATES, *supra* note 177, at 9; *see also* PEW RES. CTR., CENSUS 2010: 50 MILLION LATINOS: HISPANICS ACCOUNT FOR MORE THAN HALF OF NATION'S GROWTH IN PAST DECADE 1, 2 (2011), http://www.pewresearch.org/wp-content/uploads/sites/5/reports/140.pdf.

designers need for features like multilingual text and translation services, diverse images and graphics, and low-literacy text.

3. Latinxs Are a Diverse Community

It is important to recognize that the Latinx community, like many other ethnic communities, is not homogeneous. The community is comprised of many different nationalities and racial ethnicities whose values, preferences, and needs differ from one to the other. There are also cultural differences between U.S. and foreign-born Latinxs. To provide culturally appropriate and meaningful services, technology designers need to know the demographics of the end users and be aware of differences between subgroups within the community. Some communities that have been long established in the United States may be able to use mainstream technologies, while more recent immigrants from other parts of Latin America may need culturally competent design considerations such as simple language, visual aspects, and more opportunities to interact orally rather than through text.

The degree to which a new community integrates into another helps to determine what information is relevant and the best way to deliver the information. Within individual ethnic communities the level of acculturation or acceptance of another culture's norms and values varies. Like many other ethnic communities, the Latinx community is very diverse; Latinx identity is based on a variety of factors including regional differences, national origin, physical characteristics, and fluency in Spanish, making it difficult for even the United States Census to define.[198] Communities and individuals within the community acculturate into mainstream American culture at different levels.[199] What one community may find useful may not benefit another.

Subgroups[200] within a community will differ in their preferences, beliefs, values, traditions, and practices.[201] A subgroup that is less

198. *Latino Life: Are We Tolerant of Our Own Hispanic Diversity?*, NBC NEWS (Aug. 2, 2014, 8:55 AM), https://www.nbcnews.com/news/latino/latino-life-are-we-tolerant-our-own-hispanic-diversity-n168716 (emphasizing the tendency, within and outside of Latinx communities, to only focus on individuals of Mexican and Puerto Rican heritage and to not recognize Latinx people who are racially black or are "white-passing").

199. Victorson et al., *supra* note 183, at 2261–63.

200. "[S]ubgroups" refers to Latinxs from different national origins. For example, within the Latinx community, national subgroups include Latinxs from Mexico, Puerto Rico, Dominican Republic, El Salvador, Guatemala, Cuba, etc.

201. Tremblay, *supra* note 149, at 407.

acculturated will be more likely to want information in their native language that is culturally tailored to their home values, whereas a subgroup that has long acculturated into American society may not, and some communities maintain strong cultural ties to their homeland regardless of their acculturation into the United States.

Knowledge about the community and understanding about the level of acculturation allows legal professionals to adapt their communication approach and creates technology that meet the needs of the community. For example, Latinxs of South American heritage use the Internet more frequently than Latinxs of Puerto Rican and Cuban heritage, who in turn use the Internet more frequently than those who descend from the Dominican Republic, Mexico, and the rest of Central America.[202] While they all use the Internet at different rates, the takeaway is that they are all using the Internet at very high rates—so the question is not *can* they access the information, but *how* do they access it in a format that is user-friendly and meaningful. The following sections provide a broad overview of a complex and diverse community. To design culturally competent technology that meets the end users' needs, legal professionals need to work with technology designers to identify the communities they are trying to reach and assess the degree to which the factors below may change how the end user will experience the technology.

4. Tradition and Culture Matter

Like many other communities, Latinxs care about their culture and value businesses that do the same. In a 2010 study, eighty percent of Latinxs reported that preserving cultural traditions was important to them.[203] In particular, the study found that eighty-four percent of Latinxs appreciated it when companies communicate with them in Spanish.[204] Five years later, a 2015 Google study confirmed that Latinxs still highly value their culture.[205] Seventy percent of Hispanics surveyed stated that they preferred to shop from culturally

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202. Victorson et al., *supra* note 183, at 2263.

203. Roberto Ruiz, *Culture: As Important As Ever with Hispanics*, UNIVISION (Sept. 15, 2014), https://corporate.univision.com/blog/demographics-culture/2014/09/15/culture-as-important-as-ever-with-hispanics/.

204. *Id.*

205. Eliana Murillo, *New Research Shows How to Connect with the U.S. Hispanics Online*, THINK WITH GOOGLE 5–6 (June 2015), https://www.thinkwithgoogle.com/consumer-insights/new-research-shows-how-to-connect-with-digital-hispanics-online/.

relevant websites.[206] Even if the information is only provided in English, the majority of the Hispanics prefer websites that reflect Hispanic culture with pictures of diverse individuals, images of family, and bilingual content.[207]

To reach the Latinx market, legal professionals will need to understand Hispanic "tastes, traditions and values"—providing bilingual information is not enough.[208] A 2015 Google survey identified five design features that made websites more culturally relevant to the Hispanic community.[209] Some of the features that designers can incorporate into software programs include: culturally relevant images of families and individuals, Spanish language content, and opportunities for the Lantix community to voice their opinions through testimonials that reflect their demographic.[210]

Latinxs also value formal and informal social networks.[211] Family and community input matters.[212] It is important for Latinxs to have a way to share both important information and decision-making with family members. Traditional interviewing and client counseling models assume that the client will make decisions on his or her own or based on his or her individual values.[213] Relational perspectives of "the individual" versus "the collective" may impact how an individual makes choices, who has access to information, and who makes final decisions.[214] Furthermore, Latinxs often turn to family members or community leaders for decision-making guidance.[215] Cultures, including Latinxs', that value collective decisions may need to easily share information or have the ability to log more than one person at a

206. *Id.*

207. *Id.*

208. Steve Brooks, *9 Ways to Fine-Tune Your Marketing to Hispanic Consumers*, RESTAURANT BUS. (July 20, 2015), https://www.restaurantbusinessonline.com/marketing/9-ways-fine-tune-your-marketing-hispanic-consumers.

209. Murillo, *supra* note 205, at 5.

210. *Id.*

211. *See* Miguel Tirado, *Role of Mobile Health in the Care of Culturally and Linguistically Diverse U.S. Populations*, PERS. HEALTH INFO. MGMT. 1, 5 (2011) (recommending "culturally appropriate" changes for telehealth services).

212. *Id.*

213. *See* Tremblay, *supra* note 149, at 400 (stating that assumptions about people's behavior are influenced by culture and interpersonal patterns).

214. *Id.*

215. *See id.* (explaining that ethical considerations for cultures who value collective decision making may involve careful explanations of waiving attorney-client privilege and confidentiality).

time on a program application or client portal in order to input information, evaluate options, or make decisions.[216]

For success stories and roadmaps regarding the incorporation of culture into technological software and programs, the legal profession should follow the lead of other professions. The healthcare industry, for example, sees the potential of the Latinx market and is leading the way with regards to technology and outreach to the community.[217] The healthcare industry, is creating culturally conscious program applications, encouraging cross-cultural awareness, and developing strategic plans to reach this growing market.[218] Recent studies have demonstrated how the use of technology and mobile devices can provide culturally appropriate education and information to the Latinx community.[219]

While it is impossible to consider and implement every software and program design that will meet all of the needs of diverse end users, if legal professionals work with technology designers and engineers to understand their end users, they can identify and address common factors and nuances in order to provide the end user with a better experience.

The following sections will further illustrate the need for culturally competent design features.

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216. *See* Bryant & Peters, *Five Habits*, *supra* note 160, at 50 (describing the differences between individual and collective cultures).

217. *See* Lenny López & Richard W. Grant, *Closing the Gap: Eliminating Health Care Disparities Among Latinos with Diabetes Using Health Information Technology Tools and Patient Navigators*, 6 J. DIABETES SCI. & TECH. 169, 169–76 (2012).

218. Javier von Westphalhen, *Digital Health Engagement*, LATISM (May 4, 2015), http://latism.org/digital-technology-and-engagement-health-platform/.

219. López & Grant, *supra* note 217, at 169, 170–76; *see also* DeAnne K. Hilfinger Messias & Robin Dawson Estrada, *Patterns of Communication Technology Utilization for Health Information Among Hispanics in South Caroline: Implications for Health Equity*, 1 HEALTH EQUITY 35, 39–41 (2017), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6071881/pdf/heq.2016.0013.pdf; CTRS. FOR DISEASE CONTROL & PREVENTION, CULTURAL INSIGHTS: COMMUNICATING WITH HISPANICS/LATINOS 4–8, https://www.cdc.gov/healthcommunication/pdf/audience/audienceinsight_culturalinsights.pdf; Nicole Fisher, *Latinos and Hispanics Poised to Transfer U.S. Health System with $1.7 Trillion Purchasing Power*, FORBES (Oct. 31, 2018, 9:34 AM), https://www.forbes.com/sites/nicolefisher/2018/10/31/latinos-and-hispanics-poised-to-transform-u-s-health-system-with-1-7-trillion-purchasing-power/#704fcd3b4c59.

5. Language Preferences Matter

Quality translations of text, audio, and videos are costly projects that require time, regular updates, and linguistic expertise to be done properly. Given the cost and effort to properly provide multilingual translations and interpretation, and the limited budgets of many legal aid and government organizations, it is important to know the language skills and preferences of legal technology end users.

Spanish is the most commonly spoken language in American homes, other than English.[220] A 2015 study by Google found that Spanish language searches by bilingual users tripled from 2011 to 2014.[221] Of Hispanics who speak another language at home, forty-one percent are considered to be of limited English proficiency, or speak English less than "very well."[222] The biggest difference in English speaking skills is between U.S. and non-U.S. born Hispanics. In 2013, eighty-nine percent of U.S. born Hispanics spoke only English or spoke English very well at home, compared to only thirty-four percent of foreign-born Hispanics.[223]

The ability to speak English greatly affects Internet usage.[224] Language capacity affects Internet usage because most web content is in English.[225] English language skills are needed to navigate the Internet and most software programs.[226] Only twenty-five percent of the world speaks English, yet over half of websites (fifty-four percent) are in English.[227] For example, while there are over five million

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220. Zong et al., *supra* note 193 (stating that in 2016, sixty-two percent of Americans who speak a language other than English at home speak Spanish).

221. Murillo, *supra* note 205, at 7.

222. Zong et al., *supra* note 193 (referring to U.S. Census self-classification of ability to speak English as "very well").

223. JENS MANUEL KROGSTAD, RENEE STEPLER & MARK HUGO LOPEZ, PEW RES. CTR., ENGLISH PROFICIENCY ON THE RISE AMONG LATINOS 5 (May 12, 2015), http://www.pewresearch.org/wp-content/uploads/sites/5/2015/05/2015-05-12_hispanics-english-proficiency_FINAL.pdf.

224. *See generally* Hiroshi Ono & Madeline Zavodsky, *Immigrants, English Ability and the Digital Divide*, 86 SOC. FORCES 1455 (2008) (examining the discrepancy of information technology usage among immigrants in the United States compared to natives).

225. Ismail Yaman, *Digital Divide Within the Context of Language and Foreign Language Teaching*, 176 PROCEDIA 766, 768 (2015).

226. *Id.* at 768–69.

227. Kevin Zawacki, *When the Internet Doesn't Speak Your Language*, MOZILLA INTERNET HEALTH REP. (Jan. 2017), https://internethealthreport.org/v01/stories/when-the-internet-doesnt-speak-your-language/.

articles available in English on Wikipedia's website, there are less than 1.5 million articles available in Spanish.[228]

Internet usage is lowest among Latinxs who are more proficient in Spanish than English—seventy four percent of Spanish-dominant individuals use the Internet compared to ninety-four percent who are English-dominant and eighty-six who are bilingual in Spanish and English.[229] Of Hispanics who do not use the Internet at all, fifty-eight percent are Spanish-dominant, and seventy-nine percent were born outside of the U.S.[230] Spanish-dominant Latinxs are also less likely to have a broadband[231] connection at home than English-dominant Latinxs, and Spanish-dominant Hispanics are also less likely to use a mobile device to access the Internet than those who are English-dominant.[232] These numbers are in stark contrast with Latinxs who were born outside of the U.S., who are accessing the Internet with their smartphones at very high rates.[233]

The low rate of Internet use among Spanish-dominant Latinxs can be attributed to financial constraints of data plans, unfamiliarity with how to navigate the Internet browser, and a lack of visual cues that

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228. *List of Wikipedias*, WIKIMEDIA, https://meta.wikimedia.org/wiki/List_of_Wikipedias (last visited Apr. 2, 2019); *see also* Federico Guerrini, *Wikipedia Releases Transparency Report and Pledges to Improve Diversity*, FORBES (July 25, 2018, 6:00 AM), https://www.forbes.com/sites/federicoguerrini/2018/07/25/wikipedias-ultimate-challenge-decolonizing-internet-knowledge/#6fa71753630b (noting that Wikipedia is seen as a credible and authoritative source of information with a widespread impact).

229. ANNA BROWN, GUSTAVO LÓPEZ & MARK LOPEZ, PEW RES. CTR., DIGITAL DIVIDE NARROWS FOR LATINOS AS MORE SPANISH SPEAKERS AND IMMIGRANTS GO ONLINE 8 (July 20, 2016), http://www.pewhispanic.org/wp-content/uploads/sites/5/2016/07/PH_2016.07.21_Broadbank_Final.pdf.

230. MARK HUGO LÓPEZ, ANA GONZALEZ-BARRERA & EILEEN PATTEN, PEW RES. CTR., CLOSING THE DIGITAL DIVIDE: LATINOS AND TECHNOLOGY ADOPTION 9–10 (Mar. 7, 2013), http://assets.pewresearch.org/wp-content/uploads/sites/7/2013/03/Latinos_Social_Media_and_Mobile_Tech_03-2013_final.pdf.

231. Broadband service refers to high-speed Internet access that is always on. Broadband service is faster than dial-up access service. *Types of Broadband Connections*, FED. COMM. COMMISSION (June 23, 2014), https://www.fcc.gov/general/types-broadband-connections.

232. BROWN ET AL., *supra* note 229, at 11 (stating that twenty-one percent of Spanish-dominant Latinxs have a broadband connection compared to sixty-five percent of English-dominant Latinxs and fifty-six percent of bilingual Latinxs, and seventy-one percent of Spanish-dominant Latinxs access the Internet through mobile devices compared to eighty-six percent of English-dominant and eighty-three percent of bilingual Latinxs).

233. MADDEN, *supra* note 134, at 8 (stating that seventy percent of Hispanics not born in the United States most commonly access the internet through their smartphones, in comparison with just fifty-three percent of U.S.-born Hispanics).

guide the user through the program experience.[234] Regardless of the ability to speak English or place of origin, Latinxs are using the Internet at high rates. Legal assistance services and programs that can be accessed through the Internet are, therefore, key to expanding access to justice to the Latinx community.

Multilingual design is also important. A Google Consumer Survey found that Hispanics often conduct bilingual searches in English and Spanish.[235] Even Latinxs who predominantly speak Spanish do not conduct online activities exclusively in Spanish.[236] Over fifty percent of Spanish-dominant Hispanics spend most or all of their time online in English and almost all of them are comfortable conducting some online activities in English.[237] Interestingly, due to the prevalence of Google and Gmail, Android users (who are more likely to be low-income or immigrant, as explained in a later section of this Article) tend to spend a greater amount of time searching and emailing on their smartphones, while iPhone users tend to spend more time using media, such as social networking, news, and watching videos.[238] This provides additional reasons for legal professionals and technology designers to invest time and resources into developing bilingual online search terms and search results.

Like many other ethnicities, Latinxs flow in and out of their native language and English. Many will be able to "work around" English only content, by creatively navigating their way through it, by recognizing images (for example, clicking on an arrow pointing right

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234. Yazmín A.G. Trejo & Alisú Schoua-Glusberg, *Device and Internet Use Among Spanish-Dominant Hispanics: Implications for Web Survey Design and Testing*, SURV. PRAC. (May 31, 2017) 1, 3 http://www.surveypractice.org/article/2779-device-and-internet-use-among-spanish-dominant-hispanics-implications-for-web-survey-design-and-testing (citing AARON SMITH & DANA PAGE, PEW RES. CTR., U.S. SMARTPHONE USE IN 2015, at 16 (Apr. 1, 2015), http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/).

235. Lisa Gevelber, *Your Next Big Opportunity: The U.S. Hispanic Market*, THINK WITH GOOGLE (July 2014), https://www.thinkwithgoogle.com/articles/us-hispanic-market-digital.html.

236. Murillo, *supra* note 205, at 7.

237. *Id.* (stating that fifty-two percent of survey respondents spoke English all or most of the time online and ninety-four percent are comfortable consuming English online for at least one common activity).

238. COMSCORE, THE U.S. MOBILE APP REPORT 10 (2014), https://www.comscore.com/Insights/Presentations-and-Whitepapers/2014/The-US-Mobile-App-Report; Jim Edwards, *These Maps Show That Android Is for Poor People*, BUS. INSIDER (Apr. 3, 2014, 8:02 PM), https://www.businessinsider.com/android-is-for-poor-people-maps-2014-4; *see also* Ayaz Nanji, *How iPhone and Android Ownership Varies by Demographic*, MARKETINGPROFS (June 13, 2013), http://www.marketingprofs.com/charts/2013/10957/how-iphone-and-android-ownership-varies-by-demographic.

usually means "next"), memorizing simple terms, and seeking assistance from family members. The lack of multilingual content, however, will hinder access to justice for Latinx community members who speak limited English. The ability to search and function in both English and Spanish is needed and valued by the community.[239] For legal services and government programs that cannot afford the maintenance of fully translated websites and applications, the data presented suggests that at a minimum search terms should be translated into Spanish. The next section will provide additional information about how Latinxs access technology.

6. Latinxs and Use of Technology

Although there is still a digital divide between Latinxs and non-Latinx Americans who go online, the gap is getting smaller.[240] This may be attributed to the elimination of the gap in cell phone ownership. Latinxs lead in the adoption of cell phones, smartphones, and other mobile technology.[241] Despite the frequency with which Latinxs go online from mobile devices, which is nearly the same rate as other Americans, the Latinx community remains an untapped market.[242]

In part, this may be due to their limited access to computers. Latinxs own desktops at a lower rate than other Americans.[243] In addition, a recent study found that fifty-three percent of immigrants had jobs where there is little to no access to desktop computers.[244] Consider that only sixty percent of Latinxs own a desktop or laptop computer, while eighty-eight percent of U.S. born Latinxs and only sixty-two percent of foreign born Latinx own smartphones.[245] Many Latinxs therefore depend on a smartphone or mobile device to check

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239. Paul Taylor, Mark Hugo, Jessica Martinez, and Gabriel Velasco, *Language Use Among Latinos*, PEW RES. CTR. (Apr. 4, 2012), https://www.pewhispanic.org/2012/04/04/iv-language-use-among-latinos/.

240. LÓPEZ ET AL., *supra* note 230, at 5.

241. Gevelber, *supra* note 235; *see also* LÓPEZ ET AL., *supra* note 230, at 9–10.

242. Gevelber, *supra* note 235.

243. Andrew Perrin, *Smartphones Help Black, Hispanics Bridge Some—But Not All—Digital Gaps with Whites*, PEW RES. CTR. (Aug. 31, 2017), http://www.pewresearch.org/fact-tank/2017/08/31/smartphones-help-blacks-hispanics-bridge-some-but-not-all-digital-gaps-with-whites/.

244. Zong et al., *supra* note 193 (finding that in 2016, 24.1% of immigrants worked in service occupations; 14.9% in production, transportation, and material moving occupations; and 12.9% in natural resources, construction, and maintenance occupations).

245. Perrin, *supra* note 243.

email and download documents. In fact, Latinxs are three times more likely than non-Hispanic white communities to access the Internet from a mobile device, rather than a desktop computer.[246] Unless the information can be provided through their smartphone or another mobile device, Latinx end users may have to plan a trip to a library, a mail/print shop, or office supply store or visit a family member's home to seek online legal services or assistance.

7. Cost of Internet Services

The cost of accessing and using technology, particularly mobile technology, is a real consideration for low-income families and individuals.[247] Low-income Latinxs are more likely to engage with virtual services when they do not require costly software or hardware.[248] It is also important to recognize that the cost of Internet service plans or the availability of broadband[249] services may also be a barrier, particularly to low-income and rural communities.[250] Less expensive "prepaid" Internet service plans offer limited broadband coverage.[251] The limited broadband coverage may not be good enough to support legal technology software and program needs. Strong broadband coverage may be required to run some of the legal technology applications without interruptions or reductions in speed and processing. Legal technology designers, therefore, need to consider creating programs that do not require high-speed broadband to run well.

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246. *Id.* (citing Monica Anderson, *Racial and Ethnic Differences in How People Use Mobile Technology*, PEW RES. CTR. (Apr. 30, 2015), http://www.pewresearch.org/fact-tank/2015/04/30/racial-and-ethnic-differences-in-how-people-use-mobile-technology/).

247. *See* COMMUNITY L., https://community.lawyer/cl-about (last visited Apr. 2, 2019) (a software company that offers legal services organizations tools to help keep the costs of legal technology down to help increase access to justice).

248. López & Grant, *supra* note 217, at 171 (referring to similar studies regarding the benefit of technology providing medical information).

249. "The term broadband commonly refers to high-speed Internet access that is always on and faster than the traditional dial-up access." *Types of Broadband Connections*, *supra* note 231.

250. Tirado, *supra* note 211, at 2–3 (discussing the cost of Internet services creating a barrier to healthcare); *see also* Teresa Mathew, *Broadband Is Largely Inaccessible to Those Who Need It Most*, CITYLAB (Sept. 18, 2017), https://www.citylab.com/equity/2017/09/broadband-is-the-most-inaccessible-to-those-who-need-it-most/539880/.

251. Tirado, *supra* note 211, at 3; *see also* Mathew, *supra* note 250.

The final Part of this Article will offer culturally competent design principles that will address some of the preferences and barriers described above.

III. CULTURALLY COMPETENT DESIGN PRINCIPLES

As this Article highlights, navigating the law is complicated—the road to justice is filled with legal jargon, complicated rules, and unusual procedures that often overwhelm and frustrate individuals who are not trained or familiar with the law. Legal technological innovations can help narrow the access to justice gap by using culturally competent design features that make program applications more accessible to diverse end users.

I propose that culturally competent technological design principles can fall into two broad categories. First are user experience principles, which are factors that affect the end user's ability to engage meaningfully with technology, such as ease of use, ability to understand, and value of use of the program.[252] The second set of principles relate to the mechanics of the technology design. These principles consider factors like coding of AI formulas, hardware and software considerations, and web page or application drafting techniques. Below are suggestions of ways to incorporate culturally conscious design principles into legal technology innovations to expand access to justice for all users.

A. User Experience Principles

The following are factors that impact the end user's experience when using an application.

1. The Legal Text Should Be Easy to Read and Understand

Everyone benefits from text that is easy to read and understand. This is particularly true when you consider that many American adults have low literacy skills.[253] A 2017 study of English literacy of

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252. *See generally* Margaret Hagan, *The User Experience of the Internet As a Legal Help Service: Defining Standards for the Next General of User Friendly Legal Services*, 20 VA. J.L. & TECH. 394 (2016) (reporting on a study of the user experience of internet savvy end users—most of whom had a high school education and spoke English well—and virtual legal services).

253. *See* JOHN SABATINI, UNDERSTANDING THE BASIC READING SKILLS OF U.S. ADULTS: READING COMPONENTS IN THE PIAAC LITERACY SURVEY 31–33 (Dec. 2015), https://www.ets.org/s/research/report/reading-skills/ets-adult-reading-skills-2015.pdf

immigrants residing in the U.S. found that Hispanics have the lowest levels of English literacy, with sixty-three percent of the population falling below basic levels.[254] Even, Hispanics who have been living in the U.S. for more than fifteen years had low levels of English literacy, with forty-three percent of this population scoring below basic.[255] The ability to read and comprehend the information provided by legal technology innovations is a significant factor in determining whether the technology will be useful.

For example, simple and easy-to-understand language is particularly important to protect end users' privacy.[256] Privacy tools should include warnings and notifications that alert the end user that the software may be placing personal information at risk. Protective settings should automatically be active, rather than needing the end user to select additional privacy protections. Monitoring by ISPs should require end users to opt-in to the review and release of information, which would only be an option after the ISP provides clear and straightforward explanation of how the ISP is using the information it collects.

The principles below identify additional ways that complicated legal terms and advice can be simplified with technology.

a. Consider Readability

New tech innovations, such as WriteClearly and ReadClearly, have made it possible for legal professionals and technology designers to assess and improve the reading comprehension of text with just a few clicks of a keyboard. A 2017 Legal Assistance Corporation study identified readability and the use of "plain" or easy to understand language to be "crucial" when provided legal services to individuals with limited literacy skills.[257] Programs like WriteClearly allow users

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(reviewing the 2011 PIAAC Literacy Survey, *U.S. Household Study Data Collection*, NAT'L CTR. FOR EDUC. STAT. https://nces.ed.gov/surveys/piaac/household.asp (last visited Apr. 2, 2019)).

254. Jason Richwine, *Immigrant Literacy: Self-Assessment Vs. Reality*, CTR. FOR IMMIGRATION STUD. (June 21, 2017), https://cis.org/Immigrant-Literacy-Self-Assessment-vs-Reality.

255. *Id.*

256. *See supra* Section I.D.1.

257. COLUM. L. SCH., OPTIMIZING ONLINE OUTREACH FOR LEGAL SERVICES CORPORATION 21–26 (Jan. 18, 2017), https://www.lsntap.org/sites/lsntap.org/files/optimizing-online-outreach-for-legal-services-organizations-report.pdf (report of Legal Services Corporation regarding its work in serving low-income Americans through technology).

to check the reading level of web content to help ensure readability for low-literacy users.[258]

ReadClearly is a free, online tool that allows individuals to look up explanations for complicated terminology.[259] It uses a pre-built glossary to turn legal jargon into easily understandable, plain language.[260] ReadClearly also offers simple legal glossary terms in Spanish.[261] Working hand-in-hand with this technology is WriteClearly, which analyzes any webpage's reading grade level and recommends changes to improve readability.[262] Going one step further, GuideClearly is an interactive guide that can be embedded into web pages, using a series of decision tree questions to simply guide end users to resources applicable to their legal situation.[263]

ReadClearly, WriteClearly, and GuideClearly are available free of charge, and none of the tools require technical expertise to maintain or use. However, these programs do not currently operate in Spanish. Text that is run through these programs needs to be translated into Spanish. Although it is an extra step, by using these programs to simplify the readability of text, the end result is that the translated text is easier to read and understand. The programs offer easy and accessible ways for sophisticated designers, and less tech-savvy lawyers, to make legal assistance and advice more accessible not only to end users with limited English proficiency, but to all end users.

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258. *Id.*

259. ReadClearly (as well as WriteClearly and GuideClearly) were developed by Abhijeet Chavan, creator of OpenAdvocate. *See* Abhijeet Chavan, *Add Legal Glossaries to Websites with ReadClearly 3.0*, MEDIUM (Sept. 12, 2016, 10:15 AM), https://medium.com/innovations-in-legal-aid/add-legal-glossaries-to-websites-with-readclearly-3-0-57d62a3baf31; *see also ReadClearly*, OPENADVOCATE, https://openadvocate.org/readclearly/ (last visited Apr. 2, 2019).

260. Chavan, *supra* note 259.

261. *See ReadClearly*, *supra* note 259.

262. *WriteClearly*, OPENADVOCATE, https://openadvocate.org/writeclearly/ (last visited Apr. 2, 2019).

263. *See* Abhijeet Chavan, *GuideClearly: Add Interactive Guides to Your Website*, MEDIUM (Feb. 3, 2016, 6:14 AM), https://medium.com/@chavan/guideclearly-add-interactive-guides-to-your-website-97e4e751fd26; *see also GuideClearly*, OPENADVOCATE, https://www.guideclearly.com/ (last visited Apr. 2, 2019).

b. A Picture Is Worth a Thousand Words

The addition of graphics and images can help end users comprehend information. Graphics add meaning to text and improve literacy comprehension,[264] and simple captions help end users identify what the graphic is portraying.[265] Images communicate ideas more effectively to individuals with limited literacy and language skills, because one's ability to understand images is independent of one's ability to comprehend the language.[266] Many individuals with limited English proficiency that "work around" English language websites and mobile applications are therefore able to do so, in part because of graphics.[267] Viduaysalud.com, a Spanish language website that is very similar to WebMD.com, provides search results in the form of visual images.[268] When an end user runs a search, say for example "dolor de cabeza" or "headache" in Spanish, the results from Vidaysalud are mostly images that convey the idea of a "headache," which makes it easier to scan the results to identify relevant information.[269] Compare Vidaysalud to WebMD where search results for "headache" are almost entirely displayed using text.[270] The use of images provided by Vidaysalud, allows the end user, regardless of literacy, to quickly identify relevant search results.

Access to justice programs like the Stanford Law School's Legal Design Lab are using design principles and visual elements to facilitate complicated legal communication.[271] Legal Design Lab

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264. *See* FRANK W. BAKER, Visual Literacy, *in* MEDIA LITERACY IN THE K–12 CLASSROOM 41 (2012), https://id.iste.org/docs/excerpts/MEDLIT-excerpt.pdf; *see also* COLUM. L. SCH., *supra* note 257, at 26 (acknowledging the importance of graphics and limited availability of related research).

265. Jacob Nielsen & John Morkes, *Concise, Scannable, and Objective: How to Write for the Web*, NIELSEN NORMAN GROUP (Jan. 1, 1997), http://www.nngroup.com/articles/concise-scannable-and-objective-how-to-write-for-the-web/.

266. NORMAN HERR, *Teaching Science to English Language Learners*, *in* THE SOURCEBOOK FOR TEACHING SCIENCE 508, 508–09 (2007), https://www.csun.edu/science/ref/language/teaching-ell.html.

267. *See id.*

268. *See* VIDAYSALUD, https://www.vidaysalud.com (last visited Apr. 2, 2019).

269. *See* VIDAYSALUD, https://www.vidaysalud.com (last visited Apr. 2, 2019).

270. *Compare* VIDAYSALUD, https://www.vidaysalud.com (last visited Apr. 2, 2019), *with* WEBMD, https://www.webmd.com (last visited Apr. 2, 2019).

271. The Legal Design Lab is a collaboration between lawyers, designers, and technologists who work together to: (1) teach and train others on how legal design and technology can be used to solve real world problems, (2) use research to create concept-driven legal products and services, and (3) share their innovations through open sourcing. *Design Principles*, STAN. LEGAL DESIGN LAB, http://www.legaltechdesign.com/communication-design/design-principles/; *Our Mission*, STAN. L. SCH., https://law.stanford.edu/organizations/pages/legal-design-lab/#slsnav-our-mission.

projects focus on users' needs and motivations, and are designed to assist even the most unsophisticated user by providing information and visual images that help users make choices.[272] They keep content visually simple and consistent while providing significant user guidance through the navigation of the program or project.[273] They provide multiple forms of interaction in which there is an immediate response to the user's actions, such as checklists and status updates.[274] Their user-friendly format provides easy-to-understand content that is in plain language, and applies graphics (icons, photographs, cartoons, diagrams) to convey information.[275] The combination of simple language content and images helps provide context to the content and greatly expands the ability of end users to not only use, but to benefit from legal technology.

The final user experience principle, discussed in the next subsection, addresses the need to inform the community about these technological tools. The community needs to be aware of the tools to use them. This next section also encourages legal and technological professionals to look beyond the experiences of legal professionals for guidance on how to expand access to justice.

2. Go Beyond the Legal Profession

Collaborating with well-known and trusted community-based organizations will help the legal community break down barriers, inform people about the availability of legal technological tools and services, and build trust and credibility between the community and the legal service provider.[276] Community leaders tend to share values that align with their communities' needs and concerns. Community health clinics that actively work to connect with Latinx communities are also a go-to for Latinxs.[277] Non-legal community organizations and social groups provide an opportunity to collaborate with community leaders who can help give credibility, promote, and even train individuals on the use of legal technology.[278]

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272. *Design Principles*, *supra* note 271; *Our Mission*, *supra* note 271.

273. *Design Principles*, *supra* note 271; *Our Mission*, *supra* note 271.

274. *Design Principles*, *supra* note 271; *Our Mission*, *supra* note 271.

275. *Design Principles*, *supra* note 271; *Our Mission*, *supra* note 271.

276. DWAYNE S. MARSH ET AL., POLICYLINK, LEADERSHIP FOR POLICY CHANGE 5–20 (2003), http://www.racialequitytools.org/resourcefiles/marsh.pdf.

277. Andrea K. Walker, *Health Disparities Found for Baltimore Latinos*, BALT. SUN (Oct. 20, 2011, 10:31 PM), http://www.baltimoresun.com/health/bs-hs-latino-health-20111020-story.html.

278. *See generally* Amy McCaig, *Some Black and Latino Christians Rely on Religion for Healing*, RICE UNIV. (Feb. 12, 2018) http://news.rice.edu/2018/02/12/some-

Other professions may also provide some guidance. Faced with barriers that mirror those of the legal profession, the medical industry has relied on technology to help eliminate health disparities faced by Latinx communities.[279] Medical studies regarding the effectiveness of using technology to deliver health information and resources to the Latinx community suggest that using technology to provide medical information and services to immigrant communities, particularly the Latinx community, could dramatically improve access to healthcare and health related matters in the future.[280] As the legal industry expands it use of technology to increase access to justice, it can learn from the lessons of the medical community and its implementation of technology to reach and better serve marginalized communities.

B. Principles of Legal Technology Design Mechanics

The following are design principles related to the mechanics of designing and developing legal technology that will improve the user experience for diverse groups of end users.

1. Make it Mobile

Another lesson that may be adapted from the medical community, is that mobile communication, whether through a smartphone, a personal tablet, or a laptop, increases an individual's access to health care services.[281] This is particularly true for communities that have

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black-and-latino-christians-rely-on-religion-for-healing-2/ (discussing the importance of health initiatives in congregations).

279. A recent medical study showed that due to language barriers, Latinxs who receive health care services are "less likely to receive empathy, establish rapport, and participate in the decision-making process." Victorson et al., *supra* note 183, at 2259 (citing Kathryn Pitkin Derose & David W. Baker, *Limited English Proficiency and Latinos' Use of Physician Services*, 57 MED. CARE RES. & REV. 76, 76–91 (2000); Claudia L. Schur & Leigh Ann Albers, *Language, Sociodemographics, and Health Care Use of Hispanic Adults* 7 J. HEALTH CARE POOR UNDESERVED 140, 140–158 (1996)). For recent immigrants, who have lower levels of English, lower income levels, and a lack of understanding of American health care systems, it is particularly difficult to "navigate and understand health information," which thereby makes it difficult for them to control their medical needs. *Id.* at 2260 (citing Angelica M. Roncancio et al., *Health Locus of Control, Acculturation, and Health-Related Internet Use Among Latinas*, 17 J. HEALTH. COMM. 631, 631–640 (2012)).

280. *See* López & Grant, *supra* note 217, at 174 (referring to similar studies about the benefit of technology providing medical information); *see also* Courtney R. Lyles & Urmimala Sarkar, *Health Literacy, Vulnerable Patients, and Health Information Technology Use: Where Do We Go from Here?*, 30 J. GEN. INTERN. MED. 271, 271 (2015), https://link.springer.com/content/pdf/10.1007%2Fs11606-014-3166-5.pdf.

281. Tirado, *supra* note 211, at 8.

limited access to public transportation, live in rural areas, or otherwise require long commutes to reach providers.[282] Communities that suffer a similar lack of access to courthouses, legal aid offices, or attorneys may therefore benefit from improved mobile access. Across the United States, smartphone use is on the rise.[283] In fact, since 2011, smartphone ownership among Americans has grown from thirty-five percent to seventy-seven percent, with increased ownership among low-income and elderly Americans.[284] The highest rates of ownership among adults who rely exclusively on smartphones for online access are found in individuals who have not completed a high school education and who are low-income.[285] As the previous sections of this Article have demonstrated, the Latinx community is also using smartphones at very high rates.[286]

A2J Author, the guided interview program discussed earlier, is constantly evolving and improving to increase its capacity to serve diverse end users. In recent years, it has become more mobile friendly, by incorporating technology that will adjust the screen view to the size of the end user's device.[287]

The statistics are clear: if the legal profession wants to use technology to increase access to justice, the technology has to be mobile friendly. This is even more true if the audience is low-income and from immigrant communities.

a. Mobile Design Considerations

Presenting information on smartphones effectively requires working around the limitations of mobile devices.[288] Space is at a premium on mobile phones. Therefore, the presentation of information needs to be prioritized. The information provided on a second screen capture cannot be more important than the information

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282. *Id.*

283. Andrew Perrin, *10 Facts About Smartphones As the iPhone Turns 10*, PEW RES. CTR. (June 28, 2017), http://www.pewresearch.org/fact-tank/2017/06/28/10-facts-about-smartphones/.

284. *Id.*

285. *Id.*; *Mobile Fact Sheet*, PEW RES. CTR. (Feb. 5, 2018), http://www.pewinternet.org/fact-sheet/mobile/.

286. *See Mobile Fact Sheet*, *supra* note 285.

287. Jessica Frank, *A2J Author, Legal Aid Organizations, and Courts: Bridging the Civil Justice Gap Using Document Assembly*, 39 W. NEW ENG. L. REV. 251, 260 (2017), http://digitalcommons.law.wne.edu/lawreview/vol39/iss2/3.

288. Raluca Budiu, *Mobile User Experience: Limitations and Strengths*, NIELSEN NORMAN GROUP (Apr. 19, 2015), https://www.nngroup.com/articles/mobile-ux/.

provided on an initial screen because mobile users may never get to it.

Users will only read or scroll down for more information if they are interested in the initial material.[289] Grabbing the user's attention on a small screen means that important information must fit within the initial screen. Designers, therefore, should consider using a mini-table of contents at the top of pages to hyperlink users quickly to important information. Users like hyperlinks: words, phrases, or images that the user can click on to go from the page with the link to another page that will provide more information about the item they clicked on.[290] Hyperlinks provide the ability to delve deeper into the subject matter and add credibility to the writer; labels for hyperlinks should, however, be easy to understand for the audience.[291]

Along the same lines, designers should minimize the number of steps required to complete a task to decrease wait time for page loading.[292] Mobile users are "on the move," so they have limited time to wait for information to load. This is especially important for end users with limited or poor broadband service.

Technology designers should anticipate that smartphone users will be interrupted while using the phone.[293] By definition, mobile phones travel with users. As such, the users are likely to be in a variety of situations that may interrupt the use of their mobile devices. Information should automatically save often, be easy to recover and return to in between sessions, and be easy to forward so it can be viewed on a larger device later or shared with others via links or email.

Interactions on mobile sites should be easy—users should be able to complete tasks on the app without needing to go to another app or website to get additional information.[294] Designers should incorporate all features of a smartphone, such as the camera, video, and microphone features to capture information that is difficult or tedious to type. Smartphones allow end users to take pictures of relevant documents instead of typing written answers or converting documents into pdf format to scan to the legal professional. End users may also provide answers to questions orally using the microphone and voice-

289. *Id.*

290. *See* Paul Gil, *Learn More About Hyperlinks and How They Work*, LIFEWIRE (Nov. 3, 2018), https://www.lifewire.com/how-do-hyperlinks-work-2483287.

291. Morkes & Jacob, *supra* note 265.

292. Budiu, *supra* note 288.

293. *Id.*

294. *Id.*

to-text technology to transcribe the information into text.[295] These are notably useful features to consider when working with individuals who have limited English proficiency or lower literacy and reading comprehension.

After developing an application that is mobile friendly, filled with illustrative images, and easy to read, conventional ideas of "good web writing" are just as important in the context of culturally competent design. The information should be written in simple language, well organized, and provide easy ways to access more information, if necessary.[296]

b. Consider Android Devices

The demographics of smartphone users need to be considered when deciding whether to create an app for an Android versus an iPhone operating system. There is a notable difference in demographics between the users. The median income of a person who uses an iPhone is forty percent higher than that of an Android user.[297] Android phones are available across a wide range of budgets, making them more affordable to lower-income individuals.[298] Android devices are more popular than iPhones worldwide, particularly in the Latinx community.[299] Latinxs use Android devices at a much higher rate than non-Latinxs.[300] Given these numbers, immigrant and non-immigrant clients within the justice gap are more likely to be Android users. Legal professionals using mobile apps to exchange information, provide advice, or services need to ensure that the apps are available for both Android and iPhones in order to reach low-income and immigrant end users.

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295. *See, e.g.*, RIGHTSNOW, https://www.rightsnowapp.com/ (last visited Apr. 2, 2019) (a voice-command mobile application that allows end users to asking legal questions by speaking into the application, which then provides answers orally).

296. Morkes & Jacobs, *supra* note 265.

297. *See* COMSCORE, *supra* note 238, at 8 (reporting a median income of $85,000 for iPhone users, compared to $61,000 for Android users).

298. Avery Hartmans, *People in Wealthier States Prefer iPhones Over Samsung Galaxy Phones*, BUS. INSIDER (Oct. 1, 2016, 11:00 AM), https://www.businessinsider.com/rich-people-prefer-iphones-over-samsung-phones-study-2016-9.

299. *See* Jkielty, *Android v iOS Market Share*, DEVICE ATLAS (Jan. 8, 2019), https://deviceatlas.com/blog/android-v-ios-market-share; *see also Subscriber Share Held by Smartphone Operating Systems in the United States from 2012 to 2018*, STATISTA (2019), https://www.statista.com/statistics/266572/market-share-held-by-smartphone-platforms-in-the-united-states/; THINK NOW RESEARCH, MOBILE TRENDS 2014, at 5 (2014) http://campaigns.thinknowresearch.com/downloads/files/thinknow-research-hispanic-mobile-trends-2014.pdf.

300. THINK NOW RESEARCH, *supra* note 299, at 5.

2. It All Starts with the Search

After investing so much time, energy, and effort into making the technology user- friendly for all, end users need to be able to find it. If the information can be found then users will be engaged, visit the website, and be more likely to find the legal services they are seeking. Seventy-nine percent of Hispanics who participated in a July 2015 survey stated that they use a search engine on a daily basis.[301] Latinxs rely heavily on search engines to make decisions and for general research. They are more likely than non-Hispanics to rely on information from search engines to make purchasing decisions.[302] If an initial search can be conducted in Spanish, even if it leads the end user to English-only content, the Latinx end user will still become engaged so long as the information is easy to understand.[303] For all of the reasons stated throughout this Article about the importance of online searches in expanding access to justice, legal professionals and technology designers need to invest in making their programs easily available on multilingual search engines and provide search results that will easily guide end users to their legal assistance programs.

In addition to the innovative use of images and graphics previously mentioned, Stanford's Legal Design Lab has developed a project, called A Better Legal Internet, that helps online legal service providers improve their connection with targeted audiences.[304] The project connects non-lawyers with vital legal "information, forms, procedures, and services" to help them solve their legal problems.[305] The program reviews, redesigns, and marks up existing websites and online programs to identify visual, usability, and design issues and provide suggestions for how to improve these issues so that the community can find the information more easily.[306]

The goal of the project is to improve access to justice at the point when individuals are initially using the Internet for help—the online searches.[307] Internet searches for legal help can be challenging because they include too many advertisements for lawyers, they

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301. Murillo, *supra* note 205, at 3.

302. *See id.* (reporting that fifty-four percent of Hispanics rely on online sources to help them decide about purchases compared to thirty-four percent of non-Hispanics).

303. Gevelber, *supra* note 235.

304. STAN. LEGAL DESIGN LAB, https://betterinternet.law.stanford.edu/.

305. *Id.*

306. *See About the Project*, STAN. LEGAL DESIGN LAB, http://betterinternet.law.stanford.edu/about-the-project/ (describing the project's goals to make existing legal help websites more readable).

307. *Id.*

provide legal information that is too general, they lack personal testimonies, their results are not jurisdiction-specific, and the action steps are unclear.[308] The project seeks to develop best standards for online search results so that online legal service providers can clearly direct people to appropriate information and services and search results that are easier to use.[309] The project also uses tags to categorize and encode information provided by legal service providers so that search engines can easily recognize the jurisdiction, general information, and generate a referral source who can provide the help.[310]

While it may not be possible to incorporate all of the search features of the Design Lab's project due to lack of expertise, limited funding, or inability to maintain the features long term, legal professionals and technology designers should review the standards developed by the project and strive to meet as many as possible.

3. Beware of Unintended Biased Results

Technology is not helpful if the end result harms the communities it is employed to assist. As described above, without careful coding considerations, legal technologies that integrate artificial intelligence, or AI, into their decision-making programs run the risk of producing racially biased results. Experts suggest that to minimize the chances of producing biased results, measures need to be taken that will: (1) provide explanations for the decisions reached by programs using AI, (2) acknowledge the likelihood that the result is accurate; (3) ensure that calculations are applied consistently; and (4) create a process for challenging the results.[311] AI designers need to account for the potential to foster implicit biases and address it by devoting resources to make the process of calculating and producing AI based results more transparent.[312]

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308. *Id.*

309. *Id.*

310. *Id.*

311. *See* Curt Levey & Ryan Hagemann, *Algorithms with Minds of Their Own*, WALL STREET J. (Nov. 12, 2017, 4:11 PM), https://www.wsj.com/articles/algorithms-with-minds-of-their-own-1510521093 (explaining how AI program designers can be accountable and providing the example that FICO uses this method to review payment card fraud).

312. *See Racial Bias and Artificial Intelligence: CFJ's Response to CBC Members' Letter to Tech Industry*, COMMITTEE FOR JUST. (Nov. 21, 2017), https://www.committeeforjustice.org/single-post/Racial-Bias-and-Artificial-Intelligence (responding to a letter that two members of the Congressional Black Caucus wrote to the Internet Association urging it to hold members accountable for spreading racial and gender

In 2017, with support from the Laura and John Arnold Foundation, a philanthropic organization that supports studies that tackle inequities in the criminal justice system, New Jersey's state courts revamped their pre-trial procedures by participating in a Public Safety Assessment (PSA) testing program.[313] Unlike the Correctional Offender Management Profiling for Alternative Solutions (COMPAS) program discussed above, the PSA program takes steps to significantly reduce the possibility of AI producing racially biased results.[314] The program uses an algorithm that can be inspected by the public and is based on factors that are less likely to lead to racially biased results such as: age at the time of the offense, whether the offense is violent, pending charges, prior convictions (not arrests), failure to appear in court, and prior sentences.[315] PSA is currently being tested by thirty jurisdictions and the results are carefully monitored by the Arnold Foundation to identify and eliminate racial, gender, or other socio-economically related biases.[316]

In addition to monitoring and adjusting AI protocols and formulas, the legal technology community, itself, needs to become more racially and ethnically diverse so that designers can be better aware of how outcomes may impact end users and adjust inputs and calculations accordingly. Design teams that lack diversity may not be familiar with the experiences and problems faced by communities of color.[317] The unfamiliarity makes it more likely that they will pass along implicit

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biases through artificial intelligence); Letter from Emanuel Cleaver, II & Bonnie Watson Coleman to Michael Beckerman, President & CEO of the Internet Ass'n (2017), https://cleaver.house.gov/sites/cleaver.house.gov/files/Letter%20to%20Internet%20Assoc.pdf; *see also* Levey & Hagemann, *supra* note 311 (noting former Attorney General Eric Holder's concern about AI criminal sentencing models negatively impacting minorities).

313. *Pretrial Justice*, ARNOLD VENTURES, https://www.arnoldventures.org/work/pretrial-justice (last visited Apr. 2, 2019).

314. *See* Tremblay, *supra* note 149, at 408 (observing a requirement to identify assumptions in day-to-day experiences to ensure culturally competent lawyering).

315. Matt O'Brien & Dake Kang, *AI in the Court: When Algorithms Rule on Jail Time*, U.S. NEWS (Jan. 31, 2018, 3:09 AM), https://www.usnews.com/news/best-states/ohio/articles/2018-01-31/ai-in-the-court-when-algorithms-rule-on-jail-time.

316. *Data-Driven Tool Gives Harris County Judges New Way to Assess Defendants' Pretrial Risk Level*, ARNOLD FOUND. (May 24, 2016), http://www.arnoldfoundation.org/data-driven-tool-gives-harris-county-judges-new-way-assess-defendants-pretrial-risk-level/.

317. Kristen Sonday, *The Face of Legal Technology in 2018 (and What it Means for the Future of Access to Justice)*, MEDIUM (May 22, 2018), https://medium.com/@kristensonday/the-face-of-legal-technology-in-2018-213e9479e0b2; Jason Tashea, *Legal Tech Has a Diversity Problem, New Report Says*, ABA J. (May 9, 2018, 7:00 AM), http://www.abajournal.com/news/article/legal_tech_has_a_diversity_problem_says_new_report/.

biases in software and program designs.[318] According to Kristen Sonday, author of a 2018 report regarding the diversity of legal technology leaders, "[b]cause the justice gap disproportionately affects women, immigrants, minorities, . . . those groups should have influence into the tech solutions that we are building and have their voices heard because they are so close to the issues."[319]

The combination of creating accountability for the information inputted and how the outcomes are produced, as well as working with designers from diverse racial and ethnic backgrounds will greatly reduce the chances that AI based technology will produce implicitly biased results.

4. Use Experts and Increase Funding to Ensure Long-Term Success

To provide sustainable, long-term access to justice, legal technological innovations cannot be a one-time or one-off fix. It is not enough to make a website mobile, without also implementing mobile friendly features, or spending considerable effort to properly and thoughtfully translate program text, if the translations are not updated when the English text is edited or changed. Legal professionals who use technology to provide access to justice programs and funders who support those programs, need to invest in long-term design experts who can develop and maintain culturally competent design features.

In addition to expert assistance, legal service providers need to have a basic understanding of the principles of culturally competent technological designs. Staff who update and maintain legal technology platforms need to receive regular cross-cultural competency trainings to identify and implement culturally conscious technology protocols.[320] This is particularly important if the office or agency providing the legal technology program does not have an "in-house" technology designer who knows how to incorporate culturally conscious design.

To incorporate and maintain these expert services, public funding sources, like TIG, and private program funders need to allocate

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318. Tashea, *supra* note 317; Miguel Willis, *The "Technology to Improve Access to Justice for the Poor" Fallacy Part 2*, INNOVATIVE L. STUDENT (Mar. 16, 2018), https://www.innovativelawstudent.com/2018/03/technology-improve-access-justice-poor-fallacy-part-2/.

319. Sonday, *supra* note 317; Tashea, *supra* note 317.

320. *See* Tirado, *supra* note 211.

longer-term funding to support the maintenance of well-designed, culturally competent legal technology programs.

CONCLUSION

Technology is increasing access to justice throughout the legal profession and diverse communities throughout the U.S. are using technology with more frequency to access legal services. Meaningful access to justice, however, requires that legal professionals work with legal technology designers to learn the preferences, values, and barriers of the audience, in order to create technological innovations that will benefit diverse end users. Legal technology that does not take diversity into consideration will not only be ineffective, but it may also cause harm to already vulnerable communities. By applying cultural competence theories and concepts to legal technology design, the principles presented in this Article demonstrate that culturally competent designs can make legal technology more accessible, avoid negative results, and provide meaningful access to justice to a larger community of end users.