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Legal Technology and the Future of Women in Law

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Résumé de l'article

Les effets de l'automatisation sur l'ensemble du milieu juridique ont déjà fait couler beaucoup d'encre, mais il n'en est pas de même pour les effets de l'automatisation sur les femmes qui exercent une profession juridique. Dans ce document, l'auteure résume les changements que la technologie juridique entraînera vraisemblablement dans la prestation des services juridiques et explore la façon dont ces changements pourraient avoir une incidence sur les obstacles à l'avancement auxquels se heurtent les femmes qui exercent une profession juridique. Selon l'auteure, bien que l'utilisation de la technologie juridique puisse améliorer la conciliation entre le travail et la vie personnelle pour les femmes et le degré de satisfaction qu'elles éprouvent à l'égard de leur travail en favorisant un horaire de travail plus flexible, des changements positifs au système d'heures de facturation et des mécanismes de promotion et d'embauche plus équitables, elle pourrait aussi mener, si elle ne fait pas l'objet de contrôles, à une hausse des heures de travail pour un salaire moindre, à une concurrence plus féroce entre les associés quant au partage des dossiers, et à la perpétuation du sexisme existant lors de l'utilisation d'algorithmes dans le cadre du processus d'embauche et de promotion. L'auteure formule plusieurs recommandations sur les mesures que les barreaux, les associations d'avocats et d'autres organismes de réglementation pourraient prendre pour veiller à ce que la technologie juridique favorise l'égalité et la diversité au sein de la profession juridique plutôt que de leur faire obstacle. Ainsi, l'auteur propose : 1) que des données détaillées sur les avocates et les avocats soient recueillies afin que des politiques plus éclairées soient adoptées en matière d'égalité et de diversité; 2) que les cabinets d'avocats soient tenus de présenter des rapports sur les mesures qu'ils prennent pour favoriser l'égalité et la diversité; 3) que l'on encourage l'utilisation de techniques de gestion visant à promouvoir un meilleur équilibre entre le travail et la vie personnelle et l'établissement de systèmes de tarification plus souples; 4) que l'on favorise l'entrepreneuriat féminin en matière de technologie juridique; 5) que l'on exige l'utilisation de méthodes axées sur l'équité technologique lors de l'emploi d'algorithmes dans le cadre de la gestion des cabinets d'avocats afin d'assurer l'équité, la précision et l'imputabilité.

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Legal Technology and the Future of Women in Law

Kayal Munisami*

Much has been written about how automation will change the legal profession as a whole, less so about how automation might affect women in legal practice. This paper briefly maps the likely changes that legal tech (legal technology) will bring to the provision of legal services, and explores how these changes might affect the barriers to advancement that women face in the profession. It determines that, while the use of legal tech may improve women's work/life balance and overall job satisfaction by bringing about more flexible working hours, positive changes to the billing hours' system, and fairer hiring and promotion mechanisms, an unfettered inclusion of legal tech might lead to increased working hours for less wages, increased competition for case files among associates, and the perpetuation of existing gender biases when using algorithms in the hiring and promotion process. Finally, the paper makes several recommendations on how law societies, bar associations and other relevant regulatory bodies could ensure that legal tech promotes rather than hinders Equality & Diversity in the legal profession. It proposes that: (1) detailed data on men and women lawyers should be collected to better inform equality and diversity policies; (2) law firms should be required to report on their progress in pursuing equality and diversity; (3) management techniques to promote work/life balance and more flexible pricing systems should be encouraged; (4) female entrepreneurship in legal tech should be promoted; and, (5) technological due process procedures should be required when using algorithms in law firm management to ensure fairness, accuracy and accountability.

Les effets de l'automatisation sur l'ensemble du milieu juridique ont déjà fait couler beaucoup d'encre, mais il n'en est pas de même pour les effets de l'automatisation sur les femmes qui exercent une profession juridique. Dans ce document, l'auteure résume les changements que la technologie juridique entraînera vraisemblablement dans la prestation des services juridiques et explore la façon dont ces changements pourraient avoir une incidence sur les obstacles à l'avancement auxquels se heurtent les femmes qui exercent une profession juridique. Selon l'auteure, bien que l'utilisation de la technologie juridique puisse améliorer la conciliation entre le travail et la vie personnelle pour les femmes et le degré de satisfaction qu'elles éprouvent à l'égard de leur travail en favorisant un horaire de travail plus flexible, des changements positifs au système d'heures de facturation et des mécanismes de promotion et d'embauche plus équitables, elle pourrait aussi mener, si elle ne fait pas l'objet de contrôles, à une hausse des heures de travail pour un salaire moindre, à une concurrence plus féroce entre les associés quant au partage des

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dossiers, et à la perpétuation du sexisme existant lors de l'utilisation d'algorithmes dans le cadre du processus d'embauche et de promotion. L'auteure formule plusieurs recommandations sur les mesures que les barreaux, les associations d'avocats et d'autres organismes de réglementation pourraient prendre pour veiller à ce que la technologie juridique favorise l'égalité et la diversité au sein de la profession juridique plutôt que de leur faire obstacle. Ainsi, l'auteur propose : 1) que des données détaillées sur les avocates et les avocats soient recueillies afin que des politiques plus éclairées soient adoptées en matière d'égalité et de diversité; 2) que les cabinets d'avocats soient tenus de présenter des rapports sur les mesures qu'ils prennent pour favoriser l'égalité et la diversité; 3) que l'on encourage l'utilisation de techniques de gestion visant à promouvoir un meilleur équilibre entre le travail et la vie personnelle et l'établissement de systèmes de tarification plus souples; 4) que l'on favorise l'entreprenariat féminin en matière de technologie juridique; 5) que l'on exige l'utilisation de méthodes axées sur l'équité technologique lors de l'emploi d'algorithmes dans le cadre de la gestion des cabinets d'avocats afin d'assurer l'équité, la précision et l'imputabilité.

I. INTRODUCTION

The hype about Artificial Intelligence [AI] and automation has increasingly sparked debates in various areas of legal scholarship ranging from AI and the rule of law;¹ to legal personhood for AI;² to accountability issues in AI and algorithmic decision-making;³ and other issues. Today, nearly every publication⁴ about the future of the legal profession considers the impact of automation on legal jobs, the

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- ¹ See e.g. Frank Pasquale, “A Rule of Persons, not Machines: The Limits of Legal Automation” (2019) 87 Geo Wash L Rev 1; Mireille Hildebrandt, “Law as Computation in the Era of Artificial Legal Intelligence” (2018) 68:1 UTLJ 12; Daniel L Chen, “Machine Learning and the Rule of Law” (2018) Toulouse School of Economics Working Paper 18-975.
- ² See e.g. Lawrence Solum, “Legal Personhood for Artificial Intelligences” (2008) 70 NC L Rev 1231; Lynn LoPucki, “Algorithmic Entities” (2018) 95 Wash U L Rev; Evan Zimmerman, “Machine Minds: Frontiers in Legal Personhood” (2015) online SSRN: <<https://ssrn.com/abstract=2563965>>.
- ³ See e.g. Sandra Wachter, Brent Mittelstadt & Luciano Floridi, “Why a Right to Explanation of Automated Decision-Making Does Not Exist in the General Data Protection Regulation” (2017) 7:2 Intl Data Privacy L 76, online: Oxford Academic <<https://doi.org/10.1093/idpl/ix005>>; Sandra Wachter & Brent Mittelstadt, “A Right to Reasonable Inferences: Re-thinking Data Protection Law in the Age of Big Data and AI” (2019) Colum Bus L Rev, online SSRN <<https://ssrn.com/abstract=3248829>>; Finale Doshi-Velez et al, “Accountability of AI under the Law: The Role of Explanation” (2018) Berkman Klein Working Group on Explanation and the Law, Berkman Klein Center for Internet and Society, Working Paper, online: <<http://nrs.harvard.edu/urn-3:HUL.InstRepos:34372584>>.
- ⁴ See e.g. International Bar Association Legal Policy and Research Unit, “‘Times are a-changin’: disruptive innovation and the legal profession” (May 2016) International Bar Association, online: <https://www.ibanet.org/Legal_Policy_Research_Unit_reports.aspx>; Richard Susskind, *Tomorrow’s Lawyers: An Introduction to your Future* (Oxford: Oxford University Press, 2017)[Susskind, *Tomorrow’s Lawyers*]; Mitchell Kowalski, *Avoiding Extinction: Reimagining Legal Services for the 21st Century* (American Bar Association, 2012); John O McGinnis & Russell G Pearce, “The Great Disruption: How Machine Intelligence will Transform the Role of Lawyers in the Delivery of Legal Services” (2014) 82 Fordham L Rev 3041; Raymond H Brescia et al, “Embracing Disruption: How Technological Change in the Delivery of Legal Services Can Improve Access to Justice” (2015) 78:2 Alb L Rev 553; Laurel S Terry, “The Future Regulation of the Legal Profession: The Impact of Treating the Legal Profession as ‘Service Providers’” (2008) J Professional Lawyer 18; Colin PA Jones, “AI and the Legal Profession: Could Artificial Stupidity and Responsibility Avoidance Prove to be the Biggest Agents of Change?” (2018) 69:3 SCL Rev 637; Benjamin Alarie, Anthony Niblett, & Albert H Yoon, “How Artificial Intelligence Will Affect the Practice of Law” (2018) 68:1 UTLJ 106.

provision of legal services, current law firm practices, the structure of the legal profession itself, and the rise of legal technology (legal tech).⁵ The current literature bears a common message: AI and automation have already transformed many aspects of the profession, and significant change is knocking on our doors. However, the literature tends to diverge on the extent to which the structure of the legal profession itself may change, i.e. the extent to which increased automation will lead to a loss of legal jobs, and whether this would signal the end of the profession as we know it. Some are optimistic,⁶ while others tend to be alarmist.⁷

Accurately predicting exactly how AI will change legal practice is impossible. There are simply too many variables to take into account to do so, including the possibility of a disruptive innovation,⁸ or a Blue Ocean strategy company⁹ overhauling long-established practices in the legal profession seemingly overnight. Further, the extent of that change depends largely on how the profession will react to innovative technologies. Indeed, lawyers are generally risk adverse and resistant to change due to their training and the doctrine of precedent, i.e. lawyers are used to looking to the past for answers and solutions to current and future cases and are therefore not particularly innovative.¹⁰ Concerns over high development costs in technology, malpractice claims arising out of misguided reliance on AI, and fears over data security might also stifle AI's impact in legal practice.¹¹

However, the literature converges on two things. Firstly, there seems to be a consensus on how AI and automation may change the provision of legal services. Indeed, they agree that automation will shift major parts of the legal work lawyers typically do towards 'commoditization' in areas like legal search, e-discovery, brief and memo generation, legal prediction and analytics.¹² Secondly, and more importantly

⁵ Legal Technology or legal tech or law tech refers broadly to the use of technology to provide legal services. See generally, Wikipedia contributors, "Legal Technology", *Wikipedia, The Free Encyclopedia*, online: <https://en.wikipedia.org/wiki/Legal_technology>

⁶ Susskind, *Tomorrow's Lawyer*, *supra* note 4; Richard Susskind & Daniel Susskind, *The Future of the Professions: How Technology will Transform the Work of Human Experts* (Oxford: Oxford University Press, 2015); Brescia et al, *supra* note 4; Pasquale, *supra* note 1; Alarie, Niblett & Yoon, *supra* note 4.

⁷ McGinnis & Pearce, *supra* note 4; Brian Simpson, "Algorithms or Advocacy: Does the Legal Profession Have a Future in a Digital World?" 25:1 *Inf & CommTech L* 1; Terry, *supra* note 4; Jones, *supra* note 4.

⁸ Clayton Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Cambridge, MA: Harvard Business School Press, 1997); Disruptive innovation is "a process by which a product or service takes root initially in simple applications at the bottom of a market and then relentlessly moves up market, eventually displacing established competitors." [in Clayton Christensen, "Disruptive Innovation" (2015), online: *Clayton Christensen* <<http://www.claytonchristensen.com/key-concepts>>

⁹ WC Kim & R Mauborgne, *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*. (Boston: Harvard Business School Press, 2005); See also Blue Ocean Strategy, Red Ocean vs. Blue Ocean, online: <<https://www.blueoceanstrategy.com/tools/red-ocean-vs-blue-ocean-strategy/>>. Kim and Mauborgne use the metaphor of red and blue oceans to describe their view of the market universe. Red oceans represent known market space, i.e. all industries currently in existence, bound by known industry rules and where companies try to outperform their business rivals for a greater share of the market. As the market space gets crowded, prospects for profits and growth are reduced. Blue Oceans are all the industries not currently in existence, rather, unknown market space, 'unexplored and untainted by competition', with great opportunities for profitable growth. A company adopting the blue ocean strategy attempts to bring about 'value innovation'; it creates 'uncontested' market space, makes competition irrelevant, creates and captures new demand, breaks the value-cost trade-off and aligns the system of a firm's activities in pursuit of differentiation and low cost.

¹⁰ Allen Rodriguez, "Legal Hackathons: Innovation Labs for the Legal Industry" (23 October 2015), online: *Law Technology Today* <https://www.lawtechnologytoday.org/2015/10/legal-hackathons-innovation-labs-for-the-legal-industry/>.

¹¹ Brescia et al, *supra* note 4.

¹² See publications listed in note 4 above, in particular, McGinnis & Pearce, "The Great Disruption".

for the purposes of this paper, the literature has so far approached the legal profession as a single, hegemonic entity, and used the term ‘lawyer’ as an all-encompassing term. Due to this macro perspective, the impact of automation on specific groups of people in the profession has not been given much consideration, save in instances of algorithms perpetuating existing racial and gender biases,¹³ and very summarily when considering the loss of legal jobs due to automation.¹⁴ Different people experience the legal profession in different ways. It follows then that automation will not affect every lawyer in the same way. However, the impact of automation on the legal profession and equality & diversity problems in that same profession have so far been treated as distinctly separate issues.¹⁵

This paper attempts to marry the two by looking specifically at the impact of automation on women in legal practice. It essentially asks the ‘woman question’.¹⁶ It is applied in this paper, firstly, as a criticism of the current literature on AI, automation, and the legal profession, which has so far been mostly silent on the perspectives of women by viewing the legal profession as a whole rather than as a sum of different people from different gender, ethnic and racial backgrounds, with different life experiences; and, secondly, in an attempt to determine how automation and the rise of legal tech could affect the existing barriers that women face in the profession. Doing so is not, however, without difficulty. Indeed, publicly available, specific, statistical data on women in law in Canada is quite limited, and the data available on women’s equality and diversity issues tends to be aggregated, which makes an in-depth analysis on how exactly women in law in Canada could be affected by automation very difficult without significant resources. As such, this paper presents more of an exploration of how automation and the rise of legal tech may affect women lawyers.

Part two of this paper considers the Future of Law. Drawing heavily from research by the Canadian Bar Association [CBA], I attempt to map the likely changes automation will bring to the legal profession, notably the commoditization of legal work; the emergence of new business structures and models in legal practice; and, briefly, the effect of increased automation on the legal job market in Canada. Part three considers women in law. It considers the various barriers women face in the legal profession (such as discrimination, gender bias, the lack of work/life balance, the lack of mentorship and so on). Part four discusses the impact of automation on women in law. It criticizes the lack of literature on this subject due to the treatment of the legal profession as an all-encompassing, single entity rather than as a diverse profession. It discusses whether women lawyers are more at risk of job displacement than men; the likely impact of increased automation on retention rates for women in law firms; the implications of using

¹³ See e.g. Julia Angwin et al, “Machine Bias” (23 May 2016), online: *ProPublica* <<https://www.propublica.org/article/machine-bias-risk-assessments-in-criminal-sentencing>>.

¹⁴ See e.g. Deloitte, “Developing legal talent: Stepping into the future law firm” (February 2016), online: <<https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/audit/deloitte-uk-developing-legal-talent-2016.pdf>>; Dana Remus & Frank Levy, “Can Robots be Lawyers? Computers, Lawyers and the Practice of Law” (27 November 2016), online: SSRN <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2701092>; Hugh Son, “JPMorgan Software does in seconds what took lawyers 360,000 hours”, (27 February 2017), online: *Bloomberg* <<https://www.bloomberg.com/news/articles/2017-02-28/jpmorgan-marshals-an-army-of-developers-to-automate-high-finance>>.

¹⁵ See e.g. Canadian Bar Association, “The Future of Legal Services in Canada: Trends and Issues”, (2013) online: Canadian Bar Association, <https://www.cba.org/CBAMediaLibrary/cba_na/PDFs/CBA%20Legal%20Futures%20PDFs/trends-issues-eng.pdf> [CBA, “Future 2013”] where the CBA makes little mention of the impact of AI on Equality & Diversity.

¹⁶ The ‘woman question’ essentially identifies the gender implications of a social practice or rule, which might appear to be neutral or objective on the surface but in fact fails to take into consideration the different experiences and values that seem more typical of women than of men. See Katharine T Bartlett, “Feminist Legal Methods” (1990) 103:4 *Harv L Rev* 829 at 837.

algorithms in the hiring process, performance review for promotions, and case file allocation; and, the greater flexibility afforded by AI-aided alternative legal business structures like virtual law firms. Part five discusses the way forward, and argues that the risk of a negative impact on Equality & Diversity is too significant for the Federation Law Societies of Canada (FLSC) and the various bar associations and law societies in Canada not to take an active role in monitoring how AI and legal technology should be used in the profession. It recommends that a detailed pan-Canadian study be conducted on Equality & Diversity in the profession; endorses mandatory reporting on progress towards Equality & Diversity by law firms; encourages a shift away from the traditional billing hours' system; promotes innovation and entrepreneurship among women lawyers; embraces management techniques from other industries and new management techniques such as AI-aided hiring and promotion processes to reduce gender bias; and supports the introduction of technological due process procedures to ensure that these algorithms remain fair, accurate, accountable and transparent. Finally, part six concludes that there is still time for the legal profession to act now and use AI as a tool to achieve its Equality & Diversity goals.

II. AI, AUTOMATION AND LEGAL TECHNOLOGY

The Canadian legal profession is going through a period of considerable change.¹⁷ In its 2013, report, "The Future of Legal Services in Canada", the CBA noted that the rapid spread and adoption of technology are already having significant effects on the Canadian legal industry and are compelling firms and individual lawyers to re-evaluate their business structures and operating processes.¹⁸ The Report predicted that AI would eventually help the legal profession develop new forms of service delivery, knowledge development and management in Canada.¹⁹ This section maps the likely changes that would occur in the profession, particularly in the provision of legal services, in the near future.

The 2008 financial crisis and the ensuing downturn in the global economy has shifted the power balance between lawyers and clients.²⁰ Clients increasingly expect lawyers to operate like a business with fixed and justifiable costs broken down into predictable pricing structures; they wish to choose which tasks they want provided, by whom, and how they will pay for them.²¹ With greater choice and access to technology-based solutions, previously obscure legal services have been demystified, and legal service clients are now more knowledgeable, sophisticated and connected than ever before.²² Greater technology-enabled transparency has also allowed clients to monitor more closely the rates and legal spending of law firms.²³ Dissatisfied by the discordance between the perceived value of legal services and their actual cost, clients are showing a considerable resistance to the current billing hours' pricing structure.²⁴ As a result, they

¹⁷ Richard Susskind, "Key Trends in the Legal Marketplace" (2012), online: Canadian Bar Association <<http://www.cba.org/CBA-Legal-Futures-Initiative/Reports/Key-Trends-in-the-Legal-Marketplace>>.

¹⁸ Canadian Bar Association, "The Future of Legal Services in Canada", *supra* note 15

¹⁹ CBA, "Future 2013" *supra* note 15 at 5.

²⁰ International Bar Association, *supra* note 4.

²¹ CBA, "Future 2013", *supra* note 15 at 21.

²² Shannon L Spangler, "Disruptive Innovation in the Legal Services Market: Is Real Change Coming to the Business of Law or While the Status Quo Reign?" (American Bar Association Annual Meeting, Boston, 7-11 August 2014).

²³ *Ibid* at 2. See e.g. start-ups such as Flatlaws in Canada, JustiServ in Boston, USA and Lexoo in the UK, which match lawyers with prospective clients based on their financial means and legal needs. Yamri Taddese, "New Lawyer sets up online legal marketplace", *Canadian Lawyer* (13 December 2013), online: <<https://www.canadianlawyermag.com/legalfeeds/author/yamri-taddese/new-lawyer-sets-up-online-legal-marketplace-5487/>>; JustiServ, <www.justiserv.com>; Lexoo, "How it works", <<https://www.lexoo.co.uk/how-it-works>>.

²⁴ CBA, "Future 2013", *supra* note 15 at 21.

increasingly demand easy-to-use services that deliver better value at a lower cost,²⁵ and legal providers feel the pressure of having to do more for less.²⁶ Firms and individual lawyers are increasingly being compelled to re-evaluate their business structures, cost structures, and operating processes, and are being pushed towards disintermediation, insourcing and the unbundling of legal work.²⁷ Consequently, parts of the legal work lawyers typically do are shifting towards ‘commoditization’ through the use of innovative technologies.²⁸ This commoditization is predicted to occur in five main areas of legal work: (1) e-discovery, (2) legal search, (3) document generation, (4) brief and memo generation, and (5) legal analytics.²⁹

1. E-Discovery

E-Discovery refers to the process by which lawyers input keywords as marks of reference in an online legal database to review a large pool of legal documents.³⁰ However, keyword search, even Boolean searches, can often be over- or under-inclusive because some keywords may be absent from potentially relevant documents or present in irrelevant documents.³¹ Predictive coding changes this dynamic. With predictive coding, which uses algorithms to predict whether a document is relevant, lawyers can look at larger sets of documents in less time and at a lower cost.³² Predictive coding might of course miss some relevant documents but such imperfection is no less different than the margin of human error when lawyers perform a document review while affected by fatigue, boredom or other frailties.³³

2. Legal search

Legal search refers to combing through precedents to determine what the law is. McGinnis and Pearce predict that, just like computers have gradually replaced humans in complex calculations, machine intelligence will not only eventually replace lawyers in searching for the law but will do it more effectively.³⁴ They identify two ways in which machine learning can improve legal search. Firstly, they predict that existing semantic search technology will be perfected in the coming years such that lawyers will be able to input natural language queries onto the software, which will respond semantically to these questions with directly relevant information and assess the weight to be attached to these precedents based on their treatment in subsequent case law.³⁵ Secondly, machine learning technologies will be able to identify issues within a set of facts and suggest relevant

²⁵ Spangler, *supra* note 22 at 2.

²⁶ Susskind, *Tomorrow’s Lawyers*, *supra* note 4 at 24.

²⁷ CBA, “Future 2013”, *supra* note 15 at 22.

²⁸ *Ibid* at 24.

²⁹ For a detailed explanation of how commoditization will affect these areas of work, see McGinnis & Pearce, *supra* note 4 at 3046 – 3052. See also International Bar Association, *supra* note 4.

³⁰ Joseph H Looby, “E-Discovery – Taking Predictive Coding out of the Black Box”, *FTI Journal* (2012 November), online: <<http://ftijournal.com/uploads/pdf/FTI%20Journal%20-%20E-discovery%20-%20Taking%20Predictive%20Coding%20Out%20of%20the%20Black%20Box.pdf>>.

³¹ McGinnis & Pearce, *supra* note 4 at 3047.

³² *Ibid*.

³³ *Ibid*.

³⁴ *Ibid* at 3048.

³⁵ *Ibid* at 3049.

authorities that may apply to these facts.³⁶ This kind of technology is already available and in use (e.g. US-based start-up Judicata uses open-source text analytics, search and cloud computing tools and bodies of knowledge to structure information for lawyers via a smart interface).³⁷

3. Document Generation

Lawyers already use templates and legal forms when drafting contracts and wills and simply tailor it to a client's specific needs. Today, machine intelligent software is already doing this type of work. Start-ups such as LegalZoom,³⁸ RocketLawyer,³⁹ Hotdocs,⁴⁰ LawDepot⁴¹ and so on already allow their customers to automatically generate their legal documents online when they fill out questionnaires to tailor their specific needs. The areas of law more likely to be affected are trusts and estate planning, given that the factual situations that may arise tend to be similar for most people and, as such, similar forms are usually used.⁴² McGinnis and Pearce predict that, as data becomes more interconnected, machine learning software would be able to automate a form, tailor it according to specific facts and legal arguments and also track its effect in future litigation such that these software would eventually routinely generate the first draft of most transactional documents.⁴³

4. Brief and Memo Generation

McGinnis and Pearce also found that machine learning software would be able to produce very useful automated drafts for legal memos and briefs that could be comparable to the work undertaken by junior legal associates and research assistants who generate drafts, which an experienced associate can shape into a more polished product, at least for low-value transactions.⁴⁴ This could in turn lessen the workload of lawyers and redirect their efforts to more sophisticated legal work.⁴⁵

5. Legal Analytics

Legal analytics involves using algorithms to analyse vast amounts of legal data to identify patterns and trends to make legal predictions, including on the likely outcome of a case should it go to trial.⁴⁶ Again, this type of technology is already available and in use. For example, Blue J Legal, a Toronto-based start-up, uses machine learning software to build tax law classifiers (e.g. a worker classifier would determine whether a worker is an

³⁶ *Ibid* at 3050.

³⁷ Ansel Halliburton, "Judicata Raises \$5.8M Second Round to Build Out Advanced Legal Research Systems; Keith Rabois Joins Board", *Techcrunch* (2013), online: <<https://techcrunch.com/2013/05/28/judicata-raises-5-8m-second-round-to-build-out-advanced-legal-research-systems-keith-rabois-joins-board/>>.

³⁸ Legal Zoom, "About us", online: <<https://www.legalzoom.com/about-us>>.

³⁹ Rocketlawyer, "How it works", online: <<https://www.rocketlawyer.com/how-it-works.rl>>.

⁴⁰ Hotdocs, "Learn about document automation", online: <<https://www.hotdocs.com/learn-about-document-automation>>.

⁴¹ LawDepot, "About", online: <<https://www.lawdepot.ca/about.php>>.

⁴² McGinnis & Pearce, *supra* note 1 at 3050.

⁴³ *Ibid* at 3050 – 3051.

⁴⁴ *Ibid*.

⁴⁵ Brescia et al, *supra* note 4 at 573.

⁴⁶ Joanna Goodman, "Big Data: Too Much Information", *Law Society Gazette* (23 February 2015), online: <<https://www.lawgazette.co.uk/law/big-data-too-much-information/5046950.article>>.

employee or an independent contractor for tax purposes) from published Supreme Court, Federal Court of Appeal and Tax Court decisions, code every published tax law decision in accordance with these classifiers and generate a predictive algorithm, which, when the user answers a questionnaire-style set of questions to establish a set of facts, automatically writes up a report predicting the likely outcome, the percentage of likelihood of this outcome, a detailed memo explaining the rationale for this outcome, the leading court decisions for this classifier and the precedents that are most similar based on the established set of facts.⁴⁷

Among the five, the use of legal analytics is probably the most worrisome for lawyers, given that it may over time reduce the value of lawyers' assessments.⁴⁸ However, this could in turn lessen the workload of lawyers and redirect their efforts to more sophisticated and challenging legal work.⁴⁹ Further, it does not follow that clients would bypass the lawyer altogether, and rely solely on legal analytics. Indeed, a lawyer's mettle is not just measured by her ability to make legal predictions. A lawyer identifies the appropriate question(s) to ask, exercises reasoned judgment to evaluate the accuracy of the given set of facts, and advises on the most appropriate course of action by considering not only the legal question, but also the client's circumstances and best interests.⁵⁰

The 2013 CBA Report on the Future of Legal Services predicted that, alongside the commoditization of legal work, AI and automation would also help the legal profession develop new forms of service delivery, knowledge development and management in Canada.⁵¹ Unlike England & Wales, Canadian regulations do not currently permit alternative business structures where non-lawyers can compete in the legal market. As such, the range of new legal business models and services in Canada will not be as varied. However, Susskind predicted that the liberalisation and deregulation of the legal profession in English & Wales is likely to have a "ripple effect around the world", and that, in the next ten years, most major jurisdictions in the West will have liberalized their legal professions like England & Wales.⁵² The CBA shares this view, and argues that non-lawyer investment in legal practices, fee-sharing, multidisciplinary practices, and alternative business structures should be allowed, albeit carefully regulated to ensure that the quality of professional legal services provided does not drop.⁵³

In terms of the current Canadian legal business models, the CBA predicts that the traditional law firm partnership will face considerable pressure (due to increased competition and desire for alternative fee arrangements) to adopt new management and hiring approaches to improve efficiency.⁵⁴ Indeed, these firms may either have to grow organically or merge to compete in the legal market.⁵⁵ They may also have to collaborate with other law firms on large projects or for larger clients.⁵⁶ Mid-size firms are likely to face greater difficulties. The CBA predicts that they would need to band together through mergers or

⁴⁷ Alarie, Niblett & Yoon, *supra* note 4 at 119.

⁴⁸ McGinnis & Pearce, *supra* note 4 at 3053.

⁴⁹ Brescia et al, *supra* note 4 at 573; see also Goodman, *supra* note 46.

⁵⁰ Alarie, Niblett & Yoon, *supra* note 4 at 120.

⁵¹ CBA, "Future 2013", *supra* note 15 at 5.

⁵² Susskind, *Tomorrow's Lawyers*, *supra* note 4 at 75.

⁵³ Canadian Bar Association, "Futures: Transforming the delivery of legal services in Canada" (August 2014), online: CBA <http://www.cba.org/cbamedialibrary/cba_na/pdfs/cba%20legal%20futures%20pdfs/futures-final-eng.pdf> [CBA, "Future 2014"].

⁵⁴ CBA, "Future 2013" *supra* note 15 at 30.

⁵⁵ *Ibid* at 30.

⁵⁶ *Ibid*.

collaborative arrangements or splinter into specializations, or risk being squeezed by cost-effective specialists and larger firms that have better professional management, large capital assets, multi-disciplinary competences, a multi-jurisdictional presence, and market domination.⁵⁷ Insofar as small firms and sole practitioners are concerned, the CBA predicts that increased use of technology (which would enable increased specialization, contract or project work and even outsourcing services) could give small firms and sole practitioners an advantage over larger firms.⁵⁸ Virtual law firms would be a particularly lucrative sole practitioner or small firm business model due to its low administrative cost.

There is currently no specific study or risk assessment on what impact increased automation, the changes to the pricing structure, and the inclusion of new business structures will have on the legal job market in Canada. The CBA merely notes that while mid-sized firms and new entrants to the legal profession will face difficulties due to automation, increased automation and the changes to the pricing structure will enable the profession to cater to the latent market for legal services (i.e. those who require legal services but cannot afford to do so, or are put off by the uncertainty created by the billing hours' system).⁵⁹ Indeed, technological advancement could improve Access to Justice by empowering clients to make better-informed decisions as regards how they seek out legal solutions.⁶⁰ It may also create an opportunity for new entrants who seek to gain a competitive edge over traditional law firms by offering new types of legal services, business structures, and more attractive pricing methods.⁶¹ Those who remain in traditional law practices are however more likely to face difficulties since automation will likely take over the routine legal tasks junior lawyers typically undertake early in their career to learn their craft. Senior lawyers, who usually perform more sophisticated legal work, are less likely to be affected by legal automation and may in fact benefit from having some of their more routine tasks automated, this leaving more time for more complex, and more profitable endeavours. As such, it is difficult to determine whether the legal job market will expand or contract in the future.

III. WOMEN IN LAW

Having briefly reviewed the literature on how AI will impact legal practice, this paper now turns to the current literature on women in the legal profession. While Canada boasts of nearly equal percentages of men and women in law schools and entering the legal profession, glass ceilings that may affect the success of women pursuing a career in law (e.g. in Ontario, only 9.3% of women were law firm partners as opposed to 22.3% for men)⁶² and high attrition rates among women lawyers have been a big concern. This section looks at the career obstacles women lawyers generally face to show that men and women experience the legal profession differently.

A recent report by the Canadian Centre for Diversity and Inclusion [CCDI] found a distinctly 'hegemonic masculinity' prevalent in private practice law firm culture, which creates barriers for women and ethnic minorities who do not fit with the dominant masculinity of their environment.⁶³ It found that

⁵⁷ *Ibid* at 31.

⁵⁸ *Ibid*.

⁵⁹ *Ibid*.

⁶⁰ Nandini Ramanujam & Alexander Agnello, "The Shifting Frontiers of Law: Access to Justice and Underemployment in the Legal Profession" (2017) 54 Osgoode Hall LJ 1091 at 1105.

⁶¹ *Ibid*.

⁶² Law Society of Ontario, "Statistical Snapshot of Lawyers in Ontario from the Lawyer Annual Report (LAR) 2016" (2017), online: <http://annualreport.lsuc.on.ca/2017/common/documents/Snapshot-Lawyers18_ENG-final.pdf> at 10.

⁶³ Canadian Centre for Diversity and Inclusion, "Diversity by the Numbers: The Legal Profession" (January 2018), online: <<https://ccdi.ca/media/1391/20180125-dbtn-qualitative-research-final-updated.pdf>> [CCDI, 2018] at 6.

the focus on attaining results and the necessity of spending extremely long hours in the office were part and parcel of the organizational culture of law firms in Canada.⁶⁴ There was an expectation that all junior lawyers must work long hours and, if they can endure it, their hours will eventually reduce as they move up the ladder.⁶⁵ As a result, work-life balance tends to be deprioritized. Numerous studies have shown that these problems pose a particular concern for women lawyers.⁶⁶ Indeed, Epstein noted that childcare and other care responsibilities, performed predominantly by women, detracted from work time and led women to report lower billable hours on average.⁶⁷ Similarly, in a study on the time crunch (i.e. the time we spend in the workplace, at home, or on primary care responsibilities for children and/or the elderly) for women in the legal profession in Canada, Leiper found that women in law have higher than average levels of time crunch, especially with respect to their daily accomplishments (due to long working hours) and their lack of free time with their children, family, and friends.⁶⁸ Further, women who have career gaps, be it due to parental leave or family responsibilities, also experience difficulties in rejoining the legal profession. These difficulties include a stagnation of salary or, at times, a decline in wages, and the inability to return to the same type of job.⁶⁹

The lack of flexibility in working hours is mostly due to the rigidity of the traditional billable hours' system used in law firms, which imposes long days and frequent weekend work on lawyers who are forced to meet a set quota of hours based on employer expectations or their own economic circumstances.⁷⁰ Indeed, the billable hours' system makes it very difficult for women in big firm practice to maintain a successful work-life balance if they are encumbered by care-giving responsibilities.⁷¹ As an alternative, big firms accommodate women by offering part-time employment, flexitime or job sharing and so on for a more manageable working schedule (i.e. the "mommy track").⁷² However, firms then tend to use these choices to legitimate 'glass ceiling' barriers to promotion, salary increase and prestige, thereby creating a "new substratum" within these firms for women choosing the "mommy track".⁷³

Women also get passed over, and are disadvantaged in terms of client access and assignment of case files early in their career, due to cognitive bias from their superiors.⁷⁴ They are not met with the same presumption of competence as their male counterparts, and are often seen as lacking prized traits such as assertiveness, competitiveness, and business savvy.⁷⁵ Indeed, in a study on trust and firm loyalty in Ontario law firms, Kay and Hagan found that women are more likely to be excluded from opportunities to work

⁶⁴ *Ibid* at 7.

⁶⁵ *Ibid*.

⁶⁶ Fiona Kay & John Hagan, *Gender in Practice: A Study of Lawyer's Lives* (Oxford: Oxford University Press, 1995) at 105; Joan Brockman, *Gender in the Legal Profession: Fitting or Breaking the Mould* (Vancouver: UBC Press, 2001) at 34.

⁶⁷ Cynthia Fuchs Epstein et al, "Glass Ceilings and Open Doors: Women's Advancement in the Legal Profession," (1995) 64 *Fordham L R* 291 at 334 – 335.

⁶⁸ Jean McKenzie Leiper, *Bar codes: Women in the legal profession* (Vancouver: UBC Press, 2006) at 102.

⁶⁹ Arun Shoba, Arun Thankon & Vanu Boroah, "The Effect of Career Breaks on the Working Lives of Women" (2004) 10 *Feminist Economics* 1 at 65 – 84.

⁷⁰ Leiper, *supra* note 68 at 81.

⁷¹ Judith Kaye, "Women Lawyers in Big Firms: A Study in Progress toward Gender Equality", (1988) 57 *Fordham L Rev* 111 at 116 – 117; see also Leslie Bender, "Sex Discrimination or Gender Inequality?", (1989) 57:6 *Fordham L Rev* 941 at 943.

⁷² Kaye, *supra* note 71 at 123.

⁷³ *Ibid* at 124.

⁷⁴ Fiona Kay & Elizabeth Gorman, "Women in the Legal Profession" (2008) 2 *Ann Rev Law & Soc Sciences* 299 – 332.

⁷⁵ Deborah Rhode, *The Unfinished Agenda: Women and the Legal Profession* (Chicago: American Bar Association Commission on Women in the Profession, 2001).

on important files, and placed on the periphery of firm practice, especially at the start of their careers.⁷⁶ This leads to an undermining of the trust held by these lawyers towards their coworkers and the law firm, and creates a pattern of disillusionment, which in turn leads women to seek employment with other firms or even outside private practice.⁷⁷ A similar study on women in law firms in Alberta also drew similar conclusions.⁷⁸

The underrepresentation of women as law partners in Canada is well documented. Studies have shown that law firms tend to hold double standards for men and women when evaluating their skills, social networks and cultural dispositions. Indeed, a survey by Kay and Hagan in Ontario showed that the number of hours worked per week, a positive disposition toward firm culture, the number of professional activities, and client origination improved women's prospects for promotion while such considerations had no effect on men's prospects.⁷⁹ Further, Kay and Hagan noted that women's partnership prospects increased when women returned from maternity leave since firms tended to interpret a speedy return (especially when coupled with a steady level of billable hours) as an indication of women's commitment to the law firm.⁸⁰ In contrast, men's affinity with firm culture and their ability to form valuable social ties was taken for granted.⁸¹ A further disadvantage for women arises from the lack of mentorship, particularly in the early years in their careers, less involvement in the social life of the law firm, and less networking to build client relationships as compared to their male counterparts who are more often invited to join the "old boys club".⁸²

Since the CBA's first report on Equality in 1993, the *Touchstones for Change* report, a slew of policies, bylaws, and initiatives have been introduced to promote gender parity in the legal profession, including, but not limited to, initiatives to reduce the gender gap at top level management in law firms; accommodate lawyers with family responsibilities such as flexible work arrangements, job sharing, part-time work, maternity and parental leave benefits; initiatives to raise awareness of unintentional/ hidden bias and stereotypes, and so on.⁸³ In a report on the retention of women lawyers by the Law Society of Ontario (LSO), the LSO noted that "law firms have a legal responsibility to provide environments that allow women to advance without barriers based on gender",⁸⁴ while the Law Society of British Columbia noted

⁷⁶ Fiona Kay & John Hagan, "Building Trust: Social, Distributive Justice, and Loyalty to the Firm" (2003) 28 *Law & Soc Inquiry* 483 at 501.

⁷⁷ *Ibid* at 510.

⁷⁸ Joan Brockman, "Leaving the Practice of Law: the Wherefores and the Whys" (1994) 32:1 *Alta L Rev* 116.

⁷⁹ Fiona Kay & John Hagan, "Raising the Bar: Gender Stratification in Law Firm Capital" (1998) 63:5 *Am Sociological Rev* 728 at 739 – 741.

⁸⁰ *Ibid*.

⁸¹ *Ibid*.

⁸² CCDI 2018, *supra* note 63 at 6.

⁸³ For example, the Justicia Project secured the commitment of major law firms across Canada to promote the retention and advancement of women lawyers in private practice. See Law Society of Ontario, "The Justicia Project", online: <<https://lso.ca/about-lso/initiatives/the-justicia-project>>. See also: Law Society of British Columbia, "The Business Case for Retaining and Advancing Women Lawyers in Private Practice", (July 2009), online: <<https://www.lawsociety.bc.ca/Website/media/Shared/docs/publications/reports/Retaining-women-business-case.pdf>> [LSBC, "Business Case"] at 6–7; Canadian Bar Association, "Equality at a Glance", online: <<https://www.cba.org/Sections/Equality-Committee/Resources/Equality-at-a-Glance>>; and the reports on diversity issues listed in Canadian Centre for Diversity and Inclusion, "Diversity by the Numbers: The Legal Profession" (30 November 2016), online: <https://ccdi.ca/media/1293/dbtn_tlp_2016.pdf> at 18–19.

⁸⁴ Law Society of Upper Canada, "Executive Summary – Retention of Women in Private Practice Working Group" (22 May 2008), online: <https://lawsocietyontario.azureedge.net/media/lso/media/legacy/pdf/c/convmay08_retention_of_women_executive_summary.pdf> at para 4.

that “law firms need to recognize the value of letting women take parental leaves and return to practice, because of the longer term contributions women make to their firms and to the profession.”⁸⁵ Other law societies have produced similar reports, and drew similar conclusions. Unfortunately, since most law firms do not publicly report on their Equality & Diversity commitments, it is difficult to track gender demographics to determine how successful these endeavours are.

IV. THE FUTURE OF WOMEN IN LAW

As discussed in part one of this paper, while the current literature on the Future of Law is very useful in determining how machine learning and automation will change the provision of legal services, it tends to use the term ‘lawyer’ as a one-size-fits-all term instead of going into detail on what automation and the ensuing change in legal services provision could mean for different groups of people within the profession. As such, the literature does not offer much discussion on the potential impact of automation on women in the legal profession.⁸⁶ Indeed, the CBA merely notes that the changes will not affect individuals or firms equally, universally or at the same time.⁸⁷ This section attempts to do so by: first, looking at job displacement for women lawyers due to automation; second, the impact of automation and AI on the attrition rate for women lawyers; and, third, the risks and opportunities for women lawyers in legal tech, particularly regarding the use of algorithms in hiring, promotion and case file allocation processes, and legal start-ups.

A. Job Displacement

With all the hype surrounding AI and how it will disrupt the legal profession, one of the main concerns is the ensuing loss of legal jobs. The first question that comes to mind regarding the future of women lawyers is whether women are more at risk than men of job displacement due to automation. There is no available data on how many legal jobs are likely to be lost overall in Canada.⁸⁸ A few studies conducted abroad might be indicative of a similar trend in Canada, e.g. a study by Deloitte on UK law firms predicted that around 114,000 jobs in the legal sector would become automated in the next 20 years.⁸⁹ In another study on developing legal talent in law firms, Deloitte showed that legal secretaries were at high risk of being made redundant while law firm associates faced a far higher risk than barristers and law firm partners.⁹⁰ Deloitte’s data also showed that legal secretaries were primarily women, and that around 25% of female law graduates were legal associates as opposed to around 18% for men. While Deloitte did not outright draw conclusions on whether women were at greater risk in their study, the data does seem to indicate so on the face of it. Indeed, part two of this paper discussed how automation is likely to take over routine legal work, and part three discussed how women often find themselves pushed towards more

⁸⁵ LBC, “Business Case”, *supra* note 83 at 6.

⁸⁶ For example, neither Susskind, Spangler nor McGinnis & Pearce consider the impact that disruptive innovation in legal services could have on women in the legal profession. See Susskind, *supra* note 4; McGinnis & Pearce, *supra* note 4; and, Spangler, *supra* note 22

⁸⁷ CBA, “Future 2013”, *supra* note 15 at 13.

⁸⁸ One study on job displacement in Canada merely mentions that law is one of the areas at low risk of automation. See Creig Lamb, “The Talented Mr. Robot: The impact of automation on Canada’s workforce” (June 2016), online: Brookfield Institute for Innovation + Entrepreneurship <https://brookfieldinstitute.ca/wp-content/uploads/TalentedMrRobot_BIIE-1.pdf> at 10.

⁸⁹ Jane Croft, “More than 100,000 legal roles to become automated”, *Financial Times* (15 March 2016), online: <<https://www.ft.com/content/c8ef3f62-ea9c-11e5-888e-2eadd5fbc4a4>>.

⁹⁰ Deloitte, *supra* note 14 at 4.

routine, less specialised work. One could therefore argue that women would potentially be more at risk by virtue of the nature of the work that they do.

However, the absence of any empirical data on how women's work in law firms differ from men's makes it difficult to draw definite conclusions. Publicly available, specific, statistical data on women in law in Canada is limited. The latest available gender-specific statistics published by the FLSC only show general provincial statistics on the number of men and women in the profession, how long they have been in practice, and admission statistics by gender.⁹¹ Data from provincial law societies and bar associations similarly lack specific detail on the number of women in different areas of law, the type of profession they are in (i.e. sole practitioners, in-house counsel, in legal education or for the government, etc.), their position in law firms (whether they are legal research assistants, junior barristers, senior partners, etc.), or the type of employment they are in (whether full-time, part-time, flexitime, etc.), and so on.⁹² Available reports on Equality & Diversity, while very useful in identifying the issues women face in the legal profession, mostly provide aggregate results on their demographics.⁹³ Indeed, Canadian law firms generally collect gender-specific data internally, and do not make the results available to the public.⁹⁴ This is due to the lack of mandatory reporting, concerns over the manipulation of numbers, and the impact of blaming and shaming on a law firm's reputation.⁹⁵ While more specific data can be found in academic legal papers where the researcher has conducted their own surveys on women in the legal profession, these tend to be provincial or sector-specific rather than pan-Canadian, and are focused primarily on women in law firms.⁹⁶ Consequently, the lack of precise data makes an in-depth analysis on the extent of job displacement for women in law due to automation very difficult.

B. Work/Life Balance & the Attrition Rate

The potential impact of automation on women's retention rates in law firms is equally difficult to determine. A 2018 report on the impact of technological change on Ontario's workforce found that

⁹¹ Federation of Law Societies of Canada, "2017 Statistical Report of the Federation of Law Societies of Canada" (2017), online: < <https://flsc.ca/wp-content/uploads/2019/04/2017-Stats-Report.pdf>>.

⁹² For example, the Law Society of Ontario's annual reports only show gender classifications by age, types of license and geographical distribution. See Law Society of Ontario, "Annual Report 2018" (2018) at 27 - 35, online: < <http://annualreport.lso.ca/pdf/AnnualReport2018-EN.pdf#page=27>>; the Law Society of British Columbia only publishes gender-specific data on the number of new lawyers, whether their registered lawyers are practising, non-practising or retired, and the age demographic of their practising lawyers. See Law Society of British Columbia, "2018 Annual Report" (2018), at 13 - 14, online: < <https://www.lawsociety.bc.ca/Website/media/Shared/docs/publications/ar/2018-Annual-Report.pdf>>; and the Law Society of Manitoba only publishes data on gender and the nature of practice and gender and years of practice. See Law Society of Manitoba, "2019 Annual Report" (2019) at 8 - 9, online: < <https://lawsociety.mb.ca/wp-content/uploads/2019/12/2019-Annual-Report.pdf>>.

⁹³ See e.g. CCDI, 2018, *supra* note 63; the Equity and Diversity Advisory Committee of the Law Society of British Columbia, "Retrospective Analysis of Gender in the Legal Profession in BC (1992 - 2017)" (2018), online: < <https://www.lawsociety.bc.ca/Website/media/Shared/docs/publications/reports/Gender-analysis-2018.pdf>>; and Canadian Bar Association, *Touchstones for Change: Equality, Diversity and Accountability* (Ottawa: Canadian Bar Association, 1993).

⁹⁴ Asher Alkoby & Pnina Alon-Shenker, "Out of the Closet and Up the Ladder? Diversity in Ontario's Big Law Firms" (2017) 34 Windsor YB Access Just 40 at 47.

⁹⁵ *Ibid* at 47 - 48; See also Sabrina Lyon & Lorne Sossin, "Data and Diversity in the Canadian Justice Community" (2014) 11 JL & Equality 101 at 109 - 110.

⁹⁶ For example, in Fiona M Kay, "Crossroads to Innovation and Diversity: The Careers of Women Lawyers in Quebec" 47 McGill LJ 699, Fiona Kay conducted a survey of women lawyers in Quebec based on full-time v/s alternative work arrangements, their married status, the size of law firms they worked in, the fields of law, the geographic regions within Quebec, their education and professional training, and so on.

automation could augment some of the challenges women have always faced in the workplace and reduce job opportunities, because women face multiple barriers to employment (i.e. inherent gender biases; the lack of flexibility in terms of working hours and days; difficulties to re-enter employment after pauses in their career; more routine, less specialized work than their male counterparts, and so on).⁹⁷ Given that the barriers women lawyers face are no different than the barriers generally faced by women in the workplace, it could be argued that the same is likely to happen in the legal profession. The CBA observed that technology may turn the legal marketplace into a 24/7 operation, and that trends show that there will be a “blending of both work and personal responsibilities, with the demands of each encroaching on the time and attention of the other.”⁹⁸ Indeed, the widespread use of information communication technology has already led to work encroaching on a person’s personal life because lawyers are expected to be available via email after hours and work online from home.⁹⁹ The automation of legal work will likely mean increased competition among new entrants and lawyers in the early stage of their legal careers.¹⁰⁰ This increased competition will likely require them to stand out by being more present at work and working longer hours, even from home, while potentially facing lower incomes than current practitioners.¹⁰¹ This may make it more difficult for women lawyers, especially those with parental and other caring responsibilities, to maintain a viable work/life balance, which would likely undermine current efforts to retain women in legal practice.

C. Opportunities & Risks in Legal Tech

One area that presents a big opportunity for women lawyers is the rise of Legal Tech firms. Legal Tech firms are companies that facilitate the management of legal practice, and help clients get access to legal services through technology.¹⁰² This section focuses the opportunities and the many risks that Legal Tech may afford to women lawyers by discussing firstly, the use of algorithms in hiring or promotion of women in law firms and the assignment of case files; and secondly, the use of Legal Tech as an alternative legal business model.

1. Legal Tech and fairer hiring, promotion and case file allocation

Some of the many AI-enabled services that Legal Tech could provide (e.g. the possibilities for e-discovery, legal prediction and analytics, and so on) have already been discussed in part two of this paper. There is already quite a significant body of literature that analyses the potential issues that these new technologies will bring about, particularly on biases and the need for accountability in algorithm-based decision making in law.¹⁰³ Of particular relevance to women lawyers is their use in the hiring, promotion

⁹⁷ Leah Birnbaum & Jane Farrow, “The Impact of Technological Change on Ontario’s Workforce: Robot Talks Final Engagement Summary” (March 2018), online: Brookfield Institute for Innovation + Entrepreneurship <<http://brookfieldinstitute.ca/wp-content/uploads/RPT-RobotTalks-Summary.pdf>> at 24-25.

⁹⁸ CBA, “Future 2013”, *supra* note 15 at 30.

⁹⁹ Leiper, *supra* note 68 at 81.

¹⁰⁰ CBA, “Future 2013”, *supra* note 15 at 30.

¹⁰¹ *Ibid.*

¹⁰² Sabrina Praduroux, Valeria de Paiva & Luigi di Caro, “Legal Tech Start-ups: State of the Art and Trends” (2016) Proceedings of the Workshop on ‘Mining and Reasoning with Legal texts’ collocated at the 29th International Conference on Legal Knowledge and Information Systems, online: <<https://vcvpaiva.github.io/includes/pubs/2016-legal.pdf>>.

¹⁰³ See e.g. Joshua A. Kroll et al, “Accountable Algorithms” (2017) 165:1 U Pa L Rev 633, online: <https://scholarship.law.upenn.edu/penn_law_review/vol165/iss3/3/>; Danielle Keats Citron, “Technological Due Process” (2008) 85:6 Wash L Rev 1249, online: <https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1166&context=law_lawreview>; Rob Kitchin,

or even case file allocation process. Such technologies have not yet been popularized in legal practice but have been used in other professions. For example, Mitratesch's TAP technology has enabled NetApp to automatically generate risk assessments based on information collected from their sales partners to direct these partners to the appropriate person in NetApp's legal team or a third-party legal provider.¹⁰⁴ Similarly, BetterWorks, an AI-driven employee performance assessment tool, generates employee work graphs in real-time by using defined standards of achievement (as opposed to comparing the employee's performance to her peers).¹⁰⁵ On the face of it, these technologies present an opportunity for women lawyers to be considered through an impartial and fair process on their own merit, free from the cognitive gender biases that curb their access to case files and promotions contrary to their male counterparts.

However, while these algorithms could be used to make hiring, promotion and case allocation processes fairer, high profile instances of gender bias within algorithms have since toned down the hype. For example, machine-learning specialists at Amazon recently discovered that Amazon's 'holy grail', an experimental AI recruiting engine, was biased against women.¹⁰⁶ The engine vetted applicants by observing patterns in resumes submitted to Amazon in the last 10 years. However, since most came from men, the engine determined that male candidates were preferable, and penalized resumes that included the words "women's" and "women's chess club captain". Amazon rectified the issue as related to these particular terms but could not guarantee that the engine's algorithm was gender-neutral, and therefore scrapped the project.

The opacity of algorithms, the arbitrariness of their assessments,¹⁰⁷ and their perceived lack of intuition and subjective judgment capabilities, which tends to dehumanize the hiring, promotion and case allocation processes,¹⁰⁸ may in fact hinder the pursuit of Equality & Diversity in legal practice. Indeed, AI algorithms are not critical thinkers but merely learn from existing data, and can perpetuate human-like biases. The problem is exacerbated by the fact that the source code for these algorithms is often kept secret, due to intellectual property and competition concerns.¹⁰⁹ Even if access to the source code is granted, these algorithms are usually woven together with other algorithms to create algorithmic systems,¹¹⁰ and the values and biases of software engineers who program these algorithms often unconsciously get embedded into the very coding of these algorithms, and can, in turn, distort the alleged impartiality of these algorithms.¹¹¹

While these impediments affect the attractiveness of using these algorithms in law firm management, they are not insurmountable. Procedural safeguards may be implemented to ensure that these algorithms

"Thinking Critically about and Researching Algorithms" (2017) 20:1 J Information, Communication & Society 14, online: <<https://doi.org/10.1080/1369118X.2016.1154087>>.

¹⁰⁴ Kelli Negro, "A New Case Study: How NetApp Legal Ops Saved Millions with TAP" *Mitratesch* (undated), online: <<https://www.mitratesch.com/resource-hub/blog/netapp-adopts-tap/>>.

¹⁰⁵ Bernard Marr, "The Future of Performance Management: How AI and Big Data Combat Workplace Bias" *Forbes* (17 January 2017), online: <<https://www.forbes.com/sites/bernardmarr/2017/01/17/the-future-of-performance-management-how-ai-and-big-data-combat-workplace-bias/#4904f7754a0d>>.

¹⁰⁶ Jeffrey Dastin, "Amazon ditches AI recruiting tool that didn't like women", *Global News* (10 October 2018), online: <<https://globalnews.ca/news/4532172/amazon-jobs-ai-bias/>>.

¹⁰⁷ Danielle Keats Citron & Frank Pasquale, "The Scored Society: Due Process for Automated Predictions" (2014) 89:1 *Wash L Rev* 1 at 10 – 11.

¹⁰⁸ Min Kyung Lee, "Understanding Perception of Algorithmic Decisions: Fairness, Trust, and Emotion in Response to Algorithmic Management" (2018) *Big Data & Society*, online: <<https://journals.sagepub.com/doi/full/10.1177/2053951718756684>>.

¹⁰⁹ Kitchin, *supra* note 103 at 20.

¹¹⁰ *Ibid.*

¹¹¹ Citron, *supra* note 103 at 1260 – 1263.

are, if not totally free of bias, at the very least, fairer and more neutral than humans. Citron advocates for ‘technological due process’ procedures to hold algorithms accountable through standards of review and revision.¹¹² Criticizing the use of algorithms in the US credit-scoring system, Pasquale and Citron argued that these algorithms should be subject to licensing and audit requirements by private entities, preferably independent third parties, themselves licensed by the appropriate regulatory bodies.¹¹³ Some of these safeguards have already found their way into practice. As an example, O’Melveny & Myers, a US-based law firm, have announced that it will evaluate potential summer associates through online games developed by neuroscientists at a company called Pymetrics, which will measure traits such as effort, attention, planning, memory and flexibility.¹¹⁴ Pymetrics will then build a success profile based on the results and audit the algorithm to remove potential, gender, racial or ethnic bias.¹¹⁵ Pymetrics claims that the audited algorithms will then be free of gender bias.¹¹⁶ However, others have raised concerns over self-reviewing algorithmic codes, and not allowing third-party algorithm auditing firms to check for undetected bias.¹¹⁷

While auditing by independent third parties is a good start, ‘technological due process’ procedures could and should go even further. Since these algorithms could potentially make arbitrary decisions over important aspects of a person’s life, individuals should have a right to the data used by these algorithms and to know who furnished the data about them.¹¹⁸ Pasquale and Citron recommend that notice of immutable audit trails should be given to individuals so that they have the means to understand the decision, and challenge the mischaracterisations and erroneous inferences, if any, that led to the decision.¹¹⁹ To cater to concerns over the confidentiality of the proprietary code, they recommend that the disclosure could be limited to neutral experts, entrusted to assess the inferences and correlations contained in the audit trails. Citron and Pasquale further recommend not only the review of datasets mined by the algorithm, but also the review of the source code and programmers’ notes that describe the variables, correlations, and interfaces embedded in the algorithm.¹²⁰ They also recommend testing these algorithms to detect patterns and correlations tied to classifications such as gender, race, nationality, and sexual orientation by running expected and unexpected hypothetical scenarios as a way to identify programmers’ bias, and the bias that may later emerge from the evolution of the algorithm.¹²¹ These safeguards would ensure that algorithms used in law firm management for hiring, promotion and case file allocation purposes are as fair, accurate, transparent and accountable as possible, and could go a long way to inspire confidence among women lawyers that they are being treated fairly in legal practice.

¹¹² See generally Citron, “Technological Due Process”, *supra* note 103.

¹¹³ Citron & Pasquale, *supra* note 107 at 21 – 22.

¹¹⁴ Debra Cassens Weiss, “O’Melveny will use online games to evaluate potential summer associates” *ABA Journal* (21 November 2018), online: <http://www.abajournal.com/news/article/omelveny_will_use_online_games_to_evaluate_potential_summer_associates>.

¹¹⁵ *Ibid.*

¹¹⁶ Eric Rosenbaum, “Silicon Valley is stumped: Even AI cannot always remove bias from hiring” *CNBC* (30 May 2018), online: <<https://www.cnb.com/2018/05/30/silicon-valley-is-stumped-even-a-i-cannot-remove-bias-from-hiring.html>>.

¹¹⁷ *Ibid.*

¹¹⁸ Citron & Pasquale, *supra* note 107 at 20.

¹¹⁹ *Ibid* at 28.

¹²⁰ *Ibid* at 25.

¹²¹ *Ibid.*

2. Virtual Law Firms

A second opportunity for women lawyers is the proliferation of alternative legal business models due to Legal Tech. In this respect, virtual law firms [VLFs] offer a particularly attractive incentive for women lawyers to stay in the profession. VLFs offer greater flexibility than the traditional law firm structure. They offer less face time, a decentralized organisational structure, and increased use of technology to connect lawyers to clients, no matter their location.¹²² A good example of this business model is a Calgary-based VLF, Simplex Legal, founded by Martine Boucher and her partner out of a lack of fulfillment with her work in private practice and as an in-house counsel.¹²³ The firm boasts no office space, the employment of 18 lawyers (most of whom are women) and no minimum billable-hour requirement.¹²⁴ Instead, lawyers are paid hourly to provide in-house legal services to clients who buy flexible blocks of hours.¹²⁵

There is no official data available on the exact number of VLFs in Canada, much less the number of women-owned VLFs or the number of women working there. However, the trends in the US may be indicative of what may occur in Canada. A report to the American Bar Association on diversity in Legal Tech found that women account for only 13.8% of legal tech founders in America.¹²⁶ It also found that women received only 2% of Venture Capital funding in technology, making it harder for them to set up Legal Tech businesses. Unless significant action is taken now, women lawyers could be left out of the move towards a new, more tech-friendly legal business structure, and be subsequently disadvantaged in the legal profession. On the other hand, aggressively encouraging women lawyers to move to Legal Tech may risk creating a new substratum in the provision of legal services, like the ‘mommy track’, where women would be left to cater to the latent market for legal services that traditional legal structures struggle to cater to, while the legal profession remains more or less as it has always been.

Overall, the future of women in law seems quite bleak at present. However, it does not follow that such a scenario is inevitable. The use of AI in the legal profession, or even AI in businesses in general, is still in its infancy, and there is much scope for improvement, provided that careful measures are taken now and in the future to ensure that it improves Equality & Diversity in the legal profession rather than hinders it.

V. THE WAY FORWARD

When considering the way forward, the first question to ask is one of leadership. Current trends indicate that big commercial law firms and in-house corporate counsel have been driving the move towards automation, AI and legal tech to reduce costs, and gain a competitive edge over other market players.¹²⁷ However, the potential risks to the legal profession, particularly regarding Equality & Diversity issues, are too significant to be left completely unfettered. The FLSC, along with the CBA and provincial bar associations and law societies, should take an active role in promoting and monitoring the safe use of AI

¹²² Anna Jaffe et al, “Retaining & Advancing Women in National Law Firms” (May 2016) Policy Practicum White Paper online: Stanford Law and Policy Lab <<https://www-cdn.law.stanford.edu/wp-content/uploads/2016/05/Women-in-Law-White-Paper-FINAL-May-31-2016.pdf>> at 47.

¹²³ Janice Tibbetts, “Why women leave” *CBC/ABC National Magazine* (19 June 2018), online: <<http://www.nationalmagazine.ca/Articles/Summer-2018/Why-women-leave.aspx>>.

¹²⁴ *Ibid.*

¹²⁵ *Ibid.*

¹²⁶ Kristen Sunday, “The Face of Legal Technology in 2018 (and What it Means for the Future of Access to Justice)” *ABA Journal* (8 May 2018), online: <http://www.abajournal.com/files/LegalTech_Demographic_Article_5-8.pdf>.

¹²⁷ Susskind, “*Tomorrow’s Lawyers*”, *supra* note 4 at 75.

in the legal profession. They should put forward initiatives, guidelines and best practices not only on how to use AI safely (i.e. how to address data security concerns, liability concerns over reliance on AI-generated content, and risks over the perpetuation of gender biases in algorithms) but also how to actively use AI to promote Equality & Diversity in the legal profession. Below are some of the ways in which these institutions can contribute.

Firstly, a white paper specifically on the impact of automation, AI and Legal Tech on Equality & Diversity should be conducted by the FLSC or the CBA. It would however seem redundant to do so without first addressing the data issue in Equality & Diversity. It has been 25 years since the CBA's *Touchstones for Change* report, and it is high time for another pan-Canadian study on Equality & Diversity in the legal profession. Detailed research should be carried out on the current state of Equality & Diversity so that the data can then inform our predictions on how automation, AI, and Legal Tech may impact women lawyers, and our ensuing policies to ensure that the impact is positive. In-depth research should be conducted on the following:

1. it should compile detailed gender-specific statistical and quantitative data (anonymized – to incentivise law firms to reveal their data) on men and women for comparison, i.e. the number of men & women in different positions in the law firm, their racial or ethnic background, the number of hours they work, the type of working arrangements they engage in, be it full time, part-time, flexi-time or if they work from home, the type of work they choose to do or get assigned, the areas of law they practice in, their marital status, whether they have children, whether parental leave is available to them, and if so the conditions for such leave, what daycare options are made available to them, what mentorship programs are available, etc. in order to try and get as accurate a picture of the differences between men and women in law as possible;
2. then, it should determine what was the real impact of the various initiatives to promote equality on women's experiences in law, what worked, what didn't, why they didn't and what issues still remain;
3. next, it should make an impact assessment on how AI and the future trends in the legal profession are likely to affect women in law, i.e. what AI could likely mean in terms of overall job displacement, retention rates, work-life balance, discrimination, and bias for women in law; and
4. finally, it should consider the various ways in which AI could be used to advance the careers of women in law (and more broadly, promote Equality & Diversity in the legal profession).

Along with the study, the law firms should be encouraged to diligently report to their law societies on their progress towards fulfilling their legal and ethical requirements on Equality & Diversity related principles.¹²⁸ The objective behind this measure would be to hold law firms accountable to their Equality & Diversity principles beyond mere say-so. Law Societies may even consider requiring mandatory reporting for some aspects of Equality & Diversity (e.g. quantitative data on demographic composition of the firm, their hiring and promotion decisions and the reasoning behind them, or on more serious issues such as sexual harassment). This data should be regularly updated and analysed to track the overall

¹²⁸ This is already a recommendation by the CBA, see CBA, "Future 2014", *supra* note 53 at 49.

progress of Equality & Diversity in the profession. To prevent concerns over possible backlash by the public, this data could later be anonymized and/or aggregated when used in reports.

Thirdly, the Canadian law societies and bar associations should not only promote and facilitate innovation, they should also foster entrepreneurship among women in law, and encourage women to start-up their own Legal Tech practices, be it virtual law firms or other business models. Indeed, the CBA's report on transforming legal services in Canada contained a slew of recommendations, which included supporting innovation incubation; facilitating the national dialogue on innovation; developing an investment fund for innovation; and, creating innovation scholarships or establishing innovation awards, among other incentives.¹²⁹ However, the report did not consider the gender, racial or ethnic implications of these recommendations, nor did it propose any specific recommendation to promote Equality & Diversity when delivering legal services. The law societies and bar associations should follow the initiative by the American Bar Association and create a Legal Technology Resource Centre, which, as part of its commitment to diversity, recognises and celebrates women in the Legal Tech field every year to encourage women's participation in the legal tech space.¹³⁰

These measures should be promoted concurrent to encouragements to move away from the traditional billing hours' system, and provide greater flexibility in legal business structures (such as fee sharing, multidisciplinary practice and ownership, and so on).¹³¹ Law firms should be encouraged to embrace management techniques from other industries to reduce work and time pressures,¹³² beyond simply working on a file in teams or dividing the work into tasks to be completed by different people, to improve work flexibility and work/life balance. This is to ensure not only the retention of women in private practice, but also that men and women lawyers remain on equal standing in an AI-friendly legal profession. Finally, law firms should be warned to take special care when using algorithmic software during the hiring process, and when generating performance reviews to determine who to promote. They should not only be thoroughly educated as to the potential dangers of using this software, particularly regarding biases in algorithms, but should ensure that the algorithms they use in law firm management are strictly regulated and, at the very least, continuously assessed by independent third party audits to minimize the risk of algorithmic bias replicating human-like gender biases. Law societies and bar associations may even go further and require that the technological due process procedures set out in part 4.C.1 of this paper are to a reasonable standard, should law firms choose to use these algorithms when making decisions regarding hiring, promotion and/or case file allocation. At the very least, regular auditing of these algorithms to check for biases by independent third parties must be made a requirement.

VI. CONCLUSION

Since their entry into the legal profession in the 1970s, women have been plagued with barriers along their career path. After doing away with formal entrance barriers, women have had to survive in a profession rigged towards men, and have faced discrimination and gender stereotypes; sexual harassment in the workplace; long and rigid working hours; the unfortunate choice between work and family as they get older; and so on. The changes that AI might bring to the profession might very well be a further burden on women. The predictions on the use of AI in law-related matters such as using algorithms in the hiring,

¹²⁹ *Ibid* at 36.

¹³⁰ American Bar Association, "Women of Legal Tech" (9 October 2018), online: <https://www.americanbar.org/groups/departments_offices/legal_technology_resources/resources/WomenofLegalTech/>

¹³¹ CBA, "Future 2014", *supra* note 53 at 35.

¹³² CBA, "Future 2013" *supra* note 15 at 32.

promotion and case assignment process, and in the delivery of legal services (i.e. use of predictive technology in e-discovery, legal search, brief and memo generation and legal prediction & analytics), and the ensuing changes to the traditional legal services structure (i.e. the unbundling of legal work, the changes to the pricing system and the introduction of alternative business structures) indicates so. Indeed, these changes could lead: firstly, to increased competition for work at lesser wages for junior lawyers and the possibility of even longer working hours as technology enables work to encroach on private life, which impacts negatively on the lawyer's work/life balance; and secondly, to the increased risk of perpetuation of gender biases in hiring, promotion and assignment of cases. This worry is further exacerbated by the lack of research on the issue, which suggests that the profession currently views AI and the Future of Law and its commitments towards Equality & Diversity as two separate issues, when the two are in fact interconnected.

Yet, there is room for optimism. Legal Tech's overhaul of the traditional structures of the legal profession represents a unique opportunity to break the infamous 'glass ceiling', so long as action is taken now to ensure a better future for women in law. Active involvement from national and provincial bar associations and societies is needed to ensure that Equality & Diversity and the safe use of AI and Legal Tech go hand in hand. More research and impact assessments needs to be done on the matter to create a clearer picture of what we can expect in the future. To that effect, there should be reporting from law firms to track the progress of their Equality & Diversity commitments. Alternative fee arrangements and legal business models that enable greater flexibility and a better work/life balance should be strongly encouraged. Policies, such as mandatory reporting of progress in attaining Equality & Diversity goals, and the use of AI-enabled gender bias free hiring, promotion and case file allocation should be allowed to promote women to positions of authority, but should be strongly monitored with mandatory checks to ensure that gender biases are not perpetuated in the algorithms themselves. In-depth, sector-specific, provincial and pan-Canadian data on specific groups in the legal profession should regularly be collected to enable the relevant regulatory bodies to monitor how AI, automation and Legal Tech are affecting Equality & Diversity in the legal profession. Incentives and awards should be given to female entrepreneurship in legal technology encourage a move towards alternative business structures, which are more flexible and convenient for women lawyers.