**Techno-Centric Evolution of Discretionary-Decision Making in Canadian Immigration Law**
**How Can Counsel Respond?**

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## I. Introduction

Canada's immigration system is bulging at the seams, stifled by the challenges of COVID-19, growing backlogs, lengthy processing queues, and uneven modernization. Immigration, Refugees and Citizenship Canada (IRCC) is to be commended for continuing the modernization process and refining measures to enhance program delivery, integrity, and compliance. This includes through the digitization of delivery, information collection, data storage, document management and the expanding use of "artificial intelligence solutions" (AI). Yet apprehension remains over the move to techno-solutionism. The growing concern is that individualized assessments and officer discretion will uncomfortably coexist, and potentially be compromised by the need for speed and mass processing. Therein lies the tension between the allure and benefits of faster processing and the potential encroachment of AI and other technologies on human discretion.

Individualized decision-making through the provision of discretion is the foundational pillar upon which fair and equitable permanent and temporary resident decisions are rendered. The focus of this article is identifying the impact of certain emerging technologies on IRCC's discretionary decision-making. I look to how counsel can respond to a changing legal landscape to preserve and modernize the key tenants of discretion and individualization in immigration processes and decisions and how advocates can help their client(s) today.

## II. Discretionary Decision-Making

### (a) The Content of Administrative Decision-Making

Discretion is the heartland of immigration decisions; it is the space where officers can exercise their power to decide on the human condition within shifting legal, policy, political and socio-economic frameworks.[1] The evolution of discretionary decision-making processes is constant. Of late, changes to these processes have accelerated. They have a different look and a different feel as technology advances. In many ways, we are at the precipice of discretionary decision-making 2.0. If that reads like a techno reference, it should.[2] The recent Supreme Court of Canada decision in _Vavilov[3]_ clearly articulated the role of administrative decision-makers and the scope of discretion wielded by these actors, as follows:

> **Because administrative decision makers receive their powers by statute, the governing statutory scheme is likely to be the most salient aspect of the legal**

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[1]Satzewich, Vic (2015). "2: Delegated Discretion." In >Points of Entry: How Canada's Immigration Officers Decide Who Gets In, 37–58. _UBC Press_, pg. 48. http://ebookcentral.proquest.com/lib/york/detail.action?docID=3440665.

[2] This paper draws from my previous two papers on AI Solutions entitled "Discretionary Decision-Making and Artificial Intelligence in Canadian Immigration Law and Practice: In whose best interests?" (May 2020), and "Part II: Discretionary Decision-Making and Artificial Intelligence in Canadian Immigration Law and Practice: In whose best interests – A Covid-19 year later" (May 2021). I would like to acknowledge the invaluable contribution of **Jessica Templeman, PhD ABD**, LRW Manager, Bellissimo Law Group P.C. in the research, development and editing of this paper. I would also like to thank the following individuals for assisting with the research and drafting of this paper: Kassem Mater, Karandeep Lall, and Athena Portokalidis.

[3] Canada (M.C.I.) v. Vavilov, 2019 SCC 65 (hereinafter Vavilov)

**context relevant to a particular decision. That administrative decision makers play a role, along with courts, in elaborating the precise content of the administrative schemes they administer should not be taken to mean that administrative decision makers are permitted to disregard or rewrite the law as enacted by Parliament and the provincial legislatures. Thus, for example, while an administrative body may have considerable discretion in making a particular decision, that decision must ultimately comply "with the rationale and purview of the statutory scheme under which it is adopted" . . . "there is no such thing as absolute and untrammelled 'discretion', and any exercise of discretion must accord with the purposes for which it was given".** [4]

To be reasonable, the decision-making process must abide by relevant statutory schemes (including constitutional protections and procedural requirements) in place. More broadly, there are five factors that may impact fairness in this process, rendering the decision unreasonable:

1. **The nature of the decision**. The duty of fairness asks whether the decision is more for the purpose of resolving dispute, protecting individual rights, or some other judicial purpose rather than a decision that balances many interests and primarily considers policy.
2. The importance of the **interest at stake** in the decision relative to other interests.
3. The **statutory scheme** under which the decision is made, as conveyed in _Vavilov_ (above). This primarily focuses on whether the decision is final and conclusive or whether it is preliminary and there is a right of appeal.
4. The **legitimate expectations** of the parties based on whether there were any representations by word or conduct that lead the parties to believe there was some type of procedural protection.
5. The **procedural choices** available to the decision-maker. Some deference must be accorded to the practices and policies of the decision maker that are necessary to accomplish their mandate. [5]

The decision maker must additionally uphold the entitled rights of the applicant. These rights flow from two principles of natural justice: (1) the right to be heard and (2) the right to be judged impartially. These rights are conveyed by the Canadian _Charter_ (the "umbrella" legislation), the Bill of Rights, the decision-maker's constituting legislation, and the common law.

Reasonableness then is not only concerned with whether the decision-making _process_ followed requirements of the statutory scheme. The decision must also be _justified_ based on the discretionary balancing of these statutory requirements against a consideration of the circumstances of the case. As clarified in _Vavilov,_ the focus of a reasonableness review is on "***both the decision maker's reasoning process and the outcome…. In short, it is not enough for the outcome of a decision to be justifiable. Where reasons for a decision are required, the decision must also be justified, by way of those reasons, by the decision maker to those to whom the decision applies***".[6] An officer may have discretion but there are limits and failing to demonstrate the balancing of evidence is one.[7] The process, however, is now increasingly techno-

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[4]Vavilov, _supra,_ para. 108
[5] _Baker_ v. _Canada (Minister of Citizenship & Immigration)_ 2 S.C.R. 817 [1999]
[6]Vavilov, _supra_, paras. 25, 83, 86-87, 89-90 [emphasis added]
[7] Henry v. Canada (M.C.I.), 2017 FC 1039, par. 30 [citing Mousa v. Canada (M.C.I.), 2016 FC 1358, para. 10

centric, and so how technology functions has, in my view, become central to considerations of the operation of discretion and the reasonableness of decisions.

### (b) General Steps Involved in IRCC Decision-making

There are many steps that occur before an officer even receives a file. Many of these steps involve the implementation and use of various technologies like AI. Arguably, together these processes effect the decision-making process.[8] Generally, the steps on IRCC applications include:

1. The public information available to applicants to understand how and if they can apply.
2. The applicant's decision and option to be represented or apply on their own.
3. The applicant's competence, based upon a myriad of factors, inclusive of geographic location, socio-economic realities, and capacity issues that may apply and impact upon how an applicant is able to navigate what is increasingly an on-line process.
4. The clarity of IRCC's intake process ranging from how to file, uploading file limits, where to file and what information and supporting documentation are relevant.
5. Issues surrounding the access of applicants and/or their representatives to online portals.
6. The filing process, which among other factors involves an examination of whether the application is complete and/or ineligible, and again is fashioned by limits related to uploading and other technological structures.
7. IRCC's triaging, streaming, and prioritization of applications now inclusive of some AI.
8. Additional information gathering while an application is in progress, for issues surrounding admissibility, credibility, material changes etc. A process that is predominately in writing (IRCC verification calls a notable exception).
9. Processing times, updates, and few accessible touchpoints for applicants with IRCC including consideration (steps 1-10 apply again here) of any concurrent applications being processed, such as rehabilitation applications and/or temporary resident permits.
10. Final review and decision-making function, inclusive of the exercise of discretion. [9]

The pressures of mass processing have with good reason inspired organizations like IRCC to seek processing solutions. AI for one presents the most explosive possibilities.

### III. Emergence of Artificial Intelligence (AI)

### (a) What is AI?

To begin, it is important to distinguish between AI, Machine (Deep) Learning, and predictive analytics – three terms used at times interchangeably in materials produced by the Canadian Government in discussions of developed technological tools. For the purposes of this paper, I will use "AI" or "AI solutions" to refer to all three terms. There is no singular strict definition of AI. Perhaps the simplest explanation is that AI is an "*activity devoted to making machines intelligent*"

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[8] For further information on the impact of structure and organizational procedure on discretion, see Hawkins, Keith (2003). *Law as Last Resort: Prosecution Decision Making in a Regulating Agency*. Oxford: Oxford University Press

[9] Immigration, Refugees and Citizenship Canada. "Procedural Fairness". *Government of Canada*, online: https://www.canada.ca/en/immigration-refugees-citizenship/corporate/publications-manuals/operational-bulletins-manuals/service-delivery/procedural-fairness.html

which *"enables an entity to function appropriately and with foresight in its environment"*.[10] Data is the raw material that empowers the "machine" intelligence. Machine Learning refers to a technique used by machines to make increasingly accurate predictions based on learned outcomes from large data sets to which they have been exposed. The more data provided, the better the predictive outcomes.[11, 12] Machine Learning is thus a form of AI; it is an activity that supports machine intelligence by enabling foresight through the learning of outcomes.[13] Machine Learning also supports predictive analytics, which refers more generally to "the use of data, statistical algorithms and machine learning techniques to identify the likelihood of future outcomes based on historical data".[14] The predictive functions can be extended to decision-making.

The research of Maura R. Grossman and Gordan Cormack[15], leading academics in the field of computer science, concludes that "technology-assisted review can (and does) yield more accurate results than exhaustive manual review, with much lower effort."[16] Likely recognizing the significant cost savings of technology, or perhaps desiring to "keep pace" or even stay ahead of the curve, major global law firms like Dentons and Norton Rose Fulbright already "sandbox"[17] and employ AI legal software in their offices.[18] For legal practitioners in the Canadian civil context, the success of e-Discovery in the legal field[19] has apparently been well-documented. There exists significant precedent that makes electronically stored information (ESI) discoverable.[20] James Cote, a Canadian lawyer and technologist who specializes in eDiscovery, writes: "It is not simply that the practice of law is changing; the world is changing. Lawyers need to keep pace in order continue to add value. It is not simply that computers may soon be reviewing documents better than humans; the documents – and humans – themselves are increasingly reliant on computers."[21] The position that humans remain supreme in the discovery and review process is no longer accurate.

### (b) Use of AI by Government Organizations Internationally

International use of AI is everywhere. In the world of immigration law, the United States' Citizenship and Immigration Services has been using a "chatbot" for several years. The "bot" is essentially a digital tool grounded in AI/ Natural Language Processing, which "answers questions on immigration and directs visitors to the relevant part of the website dependent on their needs"

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[10] Peter Stone et al (6 September 2016). "Artificial Intelligence and Life in 2030". *One Hundred Year Study on Artificial Intelligence: Report of the 2015- 2016 Study Panel, Stanford University.*

[11] IBM (undated). "Data Science and Machine Learning". Available: https://www.ibm.com/analytics/machine-learning (hereinafter "IBM, "Data Science"")

[12] Note that these data sets, otherwise referred to as "big data", are increasingly accessible given the "huge increase in the amount of digital information being generated, stored, and made available for analysis". Marr, Bernard (13 May 2019). "What Is the Difference Between Artificial Intelligence and Machine Learning?" *Forbes.* https://www.forbes.com/sites/bernardmarr/2016/12/06/what-is-the-difference-between-artificial-intelligence-and-machine-

[13] IBM, "Data Science"

[14] SAS. "Predictive Analytics: What it is and why it matters". Available: https://www.sas.com/en_ca/insights/analytics/predictive- analytics.html

[15] Maura R. Grossman & Gordon Cormack (2011). "Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review" *Rich.J.L. and Tech,* 17:3.

[16]*Ibid*

[17] Note that "sandbox" is defined here as the development of hardware, software, data, tools, interfaces, and policies necessary for starting an enterprise deep learning practice.

[18] Canadian Bar Association (11 July 2019). *Re: Artificial Intelligence and Machine Learning in Immigration Law.* http://www.cba.org/CMSPages/GetFile.aspx?guid=c54903f5-cd8a-4d3a-96a3-ce0c33623845 (hereinafter "CBA, "Re: Artificial Intelligence"")

[19] McKamey, Mark (2017). "Legal Technology: Artificial Intelligence and the Future of Law Practice." *APPEAL,* 22, pgs. 45-58

[20] *Verge Insurance Brokers Limited et al. v Daniel Sherk et al.,* 2017 ONSC 1597 (CanLII)

[21] *Hamilton Health Sciences (Re),* 2017 CanLII 21668 (ON IPC)

using a chat-window interface.[22] If the chatbot cannot find the specific resource or answer, it will send the applicant to a customer service representative.[23]  Further, the U.S. *Immigration and Customs Enforcement* (*ICE*), a federal law enforcement agency under the U.S. Department of Homeland Security, uses a bail determination algorithm at the USA-Mexico border to assess the merits of ongoing detention of migrants.[24] More on this initiative later.

In New Zealand, "operational algorithms" are already employed in visa processing in the categories of biometric matching, risk-evaluation, screening, and prioritization of cases.[25] Each use of AI  supports New Zealand's immigration decisions, while "...[allowing] staff expertise to be targeted to areas of  greatest need".[26]  A report released by the New Zealand Law Foundation (NZLF) in 2019 speaks to a key consideration in how we come to define AI. The 2018 Algorithm Assessment Report from the New Zealand government defines "operational algorithms" as, "a*nalytical processes [which] interpret or evaluate information (often using large or complex data sets) that result in, or materially inform, decisions that impact significantly on individuals or groups".[27]* The NZLF report determined this definition was too vague as certain AI algorithms continue to be explicitly excluded (i.e., algorithms used for policy development and research).[28] In order to give the definition of AI beneficial purpose, New Zealand's Privacy Commissioner and the Government Chief Data Steward require that the collection and subsequent use of public data must deliver "clear public benefit" such as "*Improved efficiency, which reduces cost for the taxpayer (for example, operational algorithms used by Inland Revenue to administer the tax system)".[29]* Ultimately the New Zealand government's defence for the use of "operational algorithms" was that no process would conclude without manual oversight.[30]

The overall focus is similar in Australia. There, the Department of Home Affairs has undertaken  a massive restructuring of their visa system and, in the process, has sought information specific  to the use of AI tools for immigration processing. This governmental organization has said the following regarding the potential use of technology in the delivery of immigration programming: "The department expects that three  broad  types  of  solutions  could  be  introduced  to  help deliver assessments: business  process  services, supportive technology such as robot processing automation and analytics, and emerging  disruptive technology like AI and machine learning".[31]

The above are just a few examples and there are many others. AI has been used to assist shipwrecked refugee claimants. The robotic life-raft named "Emily", short for Emergency Integrated Lifesaving Lanyard, has been deployed to help rescue falling refugees around the Greek islands.[32] In Estonia, the Ministry of Justice is pursuing the possibility of a "robot judge"

[22]de Jong, Iris. "The True Opportunity for AI in Government." The true opportunity for AI in Government. Accessed August 30, 2019. https://www.qrious.co.nz/blog/true-opportunity-for-ai-in-government.
[23] *Ibid.*
[24] Molnar, Petra (2019). "Technology on the margins: AI and global migration management from a human rights perspective". *Cambridge International Law Journal*, 8: 2, pp. 305 – 330. (hereinafter "Molnar, "Technology on the margins"")
[25] Stats NZ (2018). *Algorithm Assessment Report.* Online:  https://www.data.govt.nz/assets/Uploads/Algorithm-Assessment-Report-Oct-2018.pdf
[26] *Ibid*
[27] *Ibid*
[28] New  Zealand  Law  Foundation  (2019).  *Government  Use  of  Artificial  Intelligence  in  New  Zealand.*  Online: https://www.cs.otago.ac.nz/research/ai/AI-Law/NZLF%20report.pdf
[29] *Ibid*
[30] *Ibid*
[31] Hendry,  Justin  (16  January  2018).  "Australia's  New  Visa  System  Could  Use  AI  to  Spot  Dubious  Applicants."  *ITnews*,  online: https://www.itnews.com.au/news/australias-new-visa-system-could-use-ai-to-spot-dubious-applicants-481148.
[32] Franz, Julia (1 May 2017). "It's a buoy, it's a life raft, It's Emily – the robotic craft that's saving refugees off the coast of Greece." *PRI*, online: https://www.pri.org/stories/2017-05-01/it-s-buoy-it-s-life-raft-it-s-emily-robotic-craft-s-saving-refugees-coast-greece

for small claims court where disputes are for values of less than 7000 euros, demonstrating the use of AI outside of the field of immigration.[33] Digital courts with non-human judges have been implemented in China, where legal cases are decided in "internet courts" that do not require individuals to be present. These courts hear a multitude of different matters, including: "intellectual property, e-commerce, financial disputes related to online conduct, loans acquired or performed online, domain name issues, property and civil rights cases involving the Internet, product liability arising from online purchases and certain administrative disputes".[34]

### (c) IRCC's Application of AI[35]

### (i) Addition of Part 4.1 to the *IRPA*

Beginning in 2014, IRCC announced a project focused on the development of tools using predictive analytics capable of completing tasks performed by immigration officials.[36] In support of this turn to AI, general legislative amendments were then introduced in 2015. Specifically, following the passage of the *Economic Action Plan 2015 Act, No. 1,* the *Immigration and Refugee Protection Act* ("*IRPA*")[37] was amended to included Part 4.1, which introduced authority for the Minister of Citizenship and Immigration and the Minister of Public Safety and Emergency Preparedness to utilize technology in the *administration and enforcement* of Canadian immigration programs. As was later reported in the Gazette,

> **These legislative changes were developed to support the expanding use of electronic tools in the immigration system to manage the ever-increasing volume of immigration applications being processed, including from travelers requiring immigration services at ports of entry.[38]**

The additions under s. 4.1 of the *IRPA* were developed with a view to enhance online applications and the use of electronic tools, as follows:

i. Section 186.1 of Part 4.1 allows the Ministers to carry out their typical function through electronic means, making way for an increase in the use of automated systems in the field of immigration.
ii. Section 186.2 of Part 4.1 notes that any requirements in the *IRPA* regarding signatures, notices, information, documents, or their originals can now be met via electronic means.
iii. Section 186.3 of Part 4.1 allows regulation-making authorities to make decisions related to the utilization of electronic means in cases where required (i.e., natural disasters, limited access due to disability, etc.,).

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[33] Niiler, Eric (25 March 2019). "Can AI Be a Fair Judge in Court? Estonia Thinks So". *Wired.* Available: https://www.wired.com/story/can-ai-be-fair-judge-court-estonia-thinks-so/
[34] Vasdani, Tara (5 February 2020). "Robot Justice: China's use of Internet court". *The Lawyer's Daily.*
[35] This paper focuses on IRCC, but many AI initiatives have been undertaken by other stakeholders, a few of which are highlighted in Appendix A.
[36] Keung, Nicholas (5 January 2017). "Canadian immigration applications could soon be assessed by computers". *The Toronto Star.* Available: https://www.thestar.com/news/immigration/2017/01/05/immigration-applications-could-soon-be-assessed-by-    computers.html (hereinafter "Keung, "Immigration assessed by computers""). This Appendix will be included in Part 2 of this piece, appearing in the November edition of ImmQuest.
[37] S.C. 2001, c. 27
[38] Canada Gazette (26 January 2019). *Regulations Amending the Immigration and Refugee Protection Regulation.* Part 1, Volume 153, Number 4. http://www.gazette.gc.ca/rp-pr/p1/2019/2019-01-26/html/reg1-eng.html (hereinafter "Gazette, "Regulations Amendment"")

iv. Section 186.4 of Part 4.1 gives authority to officers and individuals to continue to provide materials through means other than electronically so long as it is authorized under *IRPA*. [39]

## (ii) TRV processing

The first use of Machine Learning technology by IRCC occurred in April 2018 when a pilot project was initiated for the processing of on-line Temporary Resident Visa's (TRVs) from China specifically. A similar project was announced in August of that same year, but for processing of on-line TRVs from India. A system for TRVs received from India through a Visa Application Centre (VAC) was subsequently launched in January 2020.[40] The decision to use AI was based on a variety of considerations, including case complexities, the stakes involved for applicants, the areas of biggest need (in terms of volume of applications), and availability of data.[41]

Through Machine Learning and using a "set of rules derived from thousands of past officer decisions" the technology deployed in the processing of TRVs has been trained to "triage" the intake of applications into high, medium and low complexity (Tiers III, II, and I, respectively).[42] Applications identified as low complexity and low risk automatically receive positive eligibility decisions, allowing officers to review these files exclusively on the basis of admissibility. High and medium complexity applications are sent for review by an officer for both eligibility and admissibility. Prior to the triaging of TRV applications, complex cases in the intake are first identified based on rules developed by experienced officers ("officer rules"). These cases are removed and triaged directly to officers for decision-making according to regular procedures, without any processing by an analytics model.[43] Note that feedback data is provided to the system on "non-compliant" temporary residents when the model is re-trained, thereby adjusting the machine to "reflect the changing environment".[44]

Through AI, large volumes of client's past behaviours are being accessed to identify patterns. Officers do not revisit eligibility decisions at Tier I, and they themselves do not have access to the confidential Officer's rules.[45] IRCC maintains that every file is still reviewed by an Officer; there are no auto refusals and decision makers must conduct their own review and not inappropriately rely on AI to make a finding.[46] Of the 160, 000 cases triaged in China, 55,000 were streamed to Tier I and received an automatic positive eligibility assessment. These applications were then screened for admissibility by officers in the usual manner with 99% being approved. That is approximately 38% of the cases, which could be significant for reducing processing times and use of resources.[47] Ultimately, the TRV Case Study concluded that AI augmented decision-making

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[39] Canada Gazette (18 October 2017). *Order Fixing the Day on which this Order is registered as the Day on which Certain Provision of the Act Come into Force*. Part II, Volume 151. https://canadagazette.gc.ca/rp-pr/p2/2017/2017-10-18/html/si-tr58-eng.html

[40] IRCC (undated). *Overview of the Analytics-Based Triage of Temporary Resident Visa Applications*. (hereafter "IRCC, "Overview")

[41] McEvenue, Patrick and Mann, Michelle (2019). "Case Study: Developing guidance for the responsible use of artificial intelligence in decision-making at Immigration, Refugees and Citizenship Canada." *Law Society of Ontario, Special Lectures 2019*. (hereinafter "McEvenue and Mann, "Case Study""), pp. 3-4

[42] IRCC. "Augmented Decision-making @ IRCC". Presentation to the Symposium on Algorithmic Government. 24 April 2019. (hereinafter "IRCC, "Augmented Decision-Making"")

[43] IRCC, "Overview"

[44] *Ibid*

[45] IRCC Overview, pp3-4

[46] McEvenue and Mann, Case Study, pp 4, 7

[47] *Ibid,* p. 5

presents an opportunity to breathe new life into existing frameworks, ensuring the rule of law is respected, and that the government is held to account in meaningful ways.[48]

The instructions to decision-makers regarding the implementation of the pilot project for China and India note at Tier II and III officers "*continue to process these applications, exercise your judgement in making decisions . . . and follow procedural fairness requirements".[49]* At the Tier I stage the same does not apply unless information is uncovered when assessing admissibility that requires the automated streaming and decision to be reassessed. Thus, understanding what falls under eligibility versus admissibility becomes critical information to understanding the process.

### (iii) Joint AI/Machine Learning Solution with the DOJ

In April 2018, IRCC submitted a Request for Information (RFI) in conjunction with the Department of Justice (DOJ) and Employment and Social Development Canada (ESDC). According to this RFI, IRCC and the DOJ were specifically seeking a joint AI/Machine Learning solution that could assist with the prediction of litigation outcomes and trend analysis in litigation, as well as the production of legal research and legal advice. A notation in the RFI confirmed that IRCC was additionally seeking an AI/Machine Learning solution to be deployed in support of the processing of Pre-Removal Risk Assessment (PRRA) and Humanitarian and Compassionate (H&C) applications.[50] It was said the technology could be used in researching litigation data (case law) and assessing risk/ implications of litigation. More broadly, it was imagined that this solution would "assist in the development of policy positions, program decisions and program guidance relevant to decision making and litigation".[51] Plans for the litigation support solutions continue to move forward.

### (iv) Playbook on Automated Decision-Making

In April 2019 IRCC announced plans to develop a "Playbook on Automated Decision Support". The Playbook contains a set of guiding principles, including the requirement that meaningful explanations of decisions be provided to clients at all times, and that clients have access to recourse mechanisms otherwise available to applicants whose decisions have been decided by immigration officials.[52] Overall the approach adopted by IRCC to AI has been cautious.

### (d) IRCC's additional technological solutions (non-AI)
### (i) Chinook

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[48] *Ibid,* p. 26

[49] *Ibid.*, p. 8

[50] In the 2018 RFI, IRCC indicated this as optional functionality, and further that with the RFI responses that it would explore the possibility of whether or not the AI/ML powered solution could also be used by front-end decision- makers to aid in their assessment of the merits of applications. See: Public Services and Procurement Canada. "Artificial Intelligence Solution (B8607-180311/A)". *Government of Canada,* online: https://buyandsell.gc.ca/procurement-data/tender-notice/PW-EE-017-33462. However, in the recent Notice of Proposed Procurement posted in January 2020 IRCC indicated its intention for the procurement: "The LS Solution will be an assist tool and is not intended to be used by front-end decision-makers making decisions on immigration applications or for automated decision-making in any form. Should the LS Solution prove to be useful and reliable for immigration law questions, it is hoped that either the Government of Canada (GOC) or industry will leverage the technology for the benefit of users outside of the GOC. This could serve to support equal access to AI resources and resources supporting the administration of justice for all parties". Public Services and Procurement Canada. "Litigation Support Solution (B8607-180311/B)". *Government of Canada,* online: https://buyandsell.gc.ca/procurement-data/tender-notice/PW-EE-017-37260

[51] Public Works and Government Services Canada (21 June 2018). *Artificial Intelligence Solution (B8607-180311/A).* https://buyandsell.gc.ca/procurement-data/tender-notice/PW-EE-017-33462

[52] IRCC, "Augmented Decision-Making"

The Chinook tool was first implemented by IRCC in 2018 to enhance efficiency and consistency, and reduce processing times for Canadian immigration applications. The implementation of this tool attempts to avoid delays in processing that result from the laborious process of using multiple tabs and screens within the GCMS system. Specifically, in IRCC offices that have limited resources the loading of multiple screens can create significant delays that can be avoided by using Chinook.[53] Chinook is comprised of five modules as explained below:

*Module 1 (File Management)*

This module allows users to self-assign open applications based on their processing tasks. For instance, a user who is an eligibility expert may self-assign and open a handful of applications that are at this stage in the processing cycle. The use of this module is optional and is not used at every immigration office.[54]

*Module 2 (Pre-Assessment)*

The pre-assessment module provides the user with a template of completion for pre-assessment tasks such as the confirmation of supporting documents, verification of a client's financial ability and the documentation of travel history. Once users provide notes on these pre-assessment steps, the notes are viewable in module 3. The use of this module is also optional and is not used at every immigration office.[55]

*Module 3 (Decision Maker)*

Module 3 is the most important and utilized module within the Chinook system as it provides the contents of assigned applications in a single report, otherwise known as the module 3 report. This report resembles an excel spreadsheet and primarily contains population application data. Each row includes data from a single application, allowing the user to review a batch of applications on one screen.[56]

*Module 4 (Post-Decision)*

If one uses module 3, module 4 is also used. This module is essentially a pop-up screen that comes up when the decision maker selects a Column D data field (the "action field") in the module 3 report. Column D in the module 3 report reflects the decision makers decision on an application. If the decision made is a refusal, the module 4 pop-up will generate several pre-written reasons for refusal that the user can select.[57]

*Module 5 (Indicator Management)*

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[53] <u>Ocran</u> v. <u>Canada (M.C.I.)</u>, Imm-6571-20
[54] *Ibid*
[55] *Ibid*
[56] *Ibid*
[57] *Ibid*

The final module of the system relates to the administrative side of Chinook as it allows users to submit requests to add or modify certain risk indicators or local word flags that they deem important. In doing so, Chinook administrators review these requests and if approved, make these new tools available to decision makers in the module 3 report of the system.[58]

We have been able to learn more about the Chinook system and how it works in the processing of Canadian immigration applications through review of the Affidavit and subsequent cross-examination materials of Andie Daponte, the current Director of the International Network Optimization and Modernization Team for IRCC. These materials were produced for an ongoing matter at the Federal Court. Most interestingly, Mr. Daponte states that Chinook is not AI supported and is not a mandatory tool.

### (vi) Hiraya Processing Suite

Another system that has been incorporated into the processing stage of Canadian immigration applications is the Hiraya Processing Suite (HPS). The system was initially created as a response to the increasing volume in applications being sent to the IRCC office in Manila, Philippines. IRCC-Manila looked towards technology that could innovate and provide shorter processing times in light of a year-by-year increase in wait times for temporary resident applications. The HPS system plays a significant role in increasing productivity by bringing together application and risk information and presenting it in a dashboard format.[59] It is an excel based program that collates data outside of GCMS, drawing parallels to the Chinook system.

A report released in February 2018 noted that the HPS had been introduced and adopted by the Colombo IRCC office for similar purposes. Initially, the HPS was adopted to process electronic TRV processing but was later expanded to include the processing of all TRVs (both electronic and paper), except for work and study permits.[60]

### IV. Impact on Discretion

### (a) Triaging and Decision-Making – a symbiotic relationship?

Do we want technology to play a supporting role, a screening role, or ultimately a decision-making role? How much can triaging be separated from decision making? Even where an immigration official ultimately renders the final decision on an application, it may be argued that the officer relied on or was influenced by an initial or proxy decision made by technology.[61]

For example, we learned IRCC is tracking "adverse" behavior once a TRV applicant is within Canada. What is adverse behaviour and how does that inform triaging moving forward? Similarly, IRCC officers do not review approval decisions made on Tier I TRV applications. If an error is made, though, in the processing of these applications, how then does that shape triaging built on feedback from positive decisions? How does this in turn determine what and when applications come before officers at Tier I versus Tiers II or III, in turn impacting decision making?

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[58] *Ibid*
[59] *Ibid*
[60] *Ibid*
[61] *Baker* v. *Canada (Minister of Citizenship & Immigration)* 2 S.C.R. 817 [1999] at para 21

A recent example of the potential negative impacts of technology on decision making that comes to mind is what happened to many overseas spouses /common-law sponsorship applications, where the sponsored spouse is residing inside Canada. These applications were being returned by CPC Sydney because the system apparently did not process spouses living in Canada. Did the system automatically reject those applications - a technical glitch? While unclear if the glitch was the result of triaging, this demonstrates the growing pains with techno-solutionism.

Reasons in a few recent study permit refusal cases raise similar concern that machines or supportive technologies made or aided in decisions. The reasons were so similar but yet so generic and non-specific, as well as so removed from the evidence the applicant submitted for consideration, that it was difficult to conceive of an officer alone rendering these findings.

> **Case #1:  I have reviewed the application. Given family ties or economic motives to remain in Canada, the applicant's incentives to remain in Canada may outweigh their ties to their home country. According to the applicant's current or future employment prospects, I have accorded less weight to their employment ties to their country of residence. Weighing the factors in this application, I am not satisfied that the applicant will depart Canada at the end of the period authorized for their stay. For the reasons above, I have refused this application.**

> **Case #2: I have reviewed the application. Given family ties or economic motives to remain in Canada, the applicant's incentives to remain in Canada may outweigh their ties to their home country. Weighing the factors in this application, I am not satisfied that applicant will depart Canada at the end of the period authorized for their stay. For the reasons above, I have refused this application.**

The hollowness of the above speaks to how quickly reasons can become devoid of meaning, less transparent and potentially more difficult to challenge, in particular where decisions are being made or aided by technological solutions like triaging. Petra Molnar attends to the concerns of advocates hoping to represent clients with decisions like those above, highlighting the barriers counsel face in practice given that "*black box, source code, training data or other inputs may be proprietary and can be shielded from public scrutiny on the basis of intellectual property legislation or as confidential business assets*".[62] This presents limitations (in the present at least) to an expansive rollout, as confirmed by IRCC:

> **Challenges are increasingly evident from the choice of technology where the opaque nature of the more complex AI technologies, such as neural networks, may not allow adequate explanation as could be required. This may be relevant whether issues raised are grounded in human rights, administrative**

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[62] Molnar, Petra (2020). "AI and Migration on Management". In Markus D. Dubber, Frank Pasquale, and Sunit Das (Eds.), *Oxford Handbook of Ethics of AI*. Oxford University Press: United States of America, pgs. 769-788.

> **law or privacy. . . Ongoing development of new technical methods to make AI models more explainable and interpretable is welcome.**[63]

To their credit IRCC has recognized the need to strike a difficult balance between adequate disclosure to migrants in order to permit fulsome challenges to such systems, and the need to protect confidentiality rights in proprietary systems built on past applications:[64]

> **Most critiques of algorithmic systems, and indeed most standards and principles in the field of ethical AI, take an individual rights perspective – that is, they are concerned first and foremost with preventing harm to individuals who are processed by a system. From this perspective, IRCC should focus on ensuring that any automated systems supporting administrative decision-making do not unfairly refuse an applicant. In other words, the benefit of the doubt should go to applicants seeking access to Canada. But part of IRCC's core mandate is protecting the health, safety and security of Canadians. From this perspective, designing a system that automates approvals and always resolves borderline cases in the applicant's favour can carry significant consequences.** [65]

Does counsel need to gain access to datasets used in machine learning and AI? Who owns these datasets, especially when they are produced by the Canadian Government but include private information of citizens and non-citizens? Even if these materials are received, will there be limitations on how the information can be used as Molnar suggests? Section 7 of the *Privacy Act* explicitly states that personal information under the control of a government institution shall not, without the consent of the individual to whom it relates, be used by the institution except

a) For the purpose for which the information was obtained or compiled by the institution or for a use consistent with that purpose; or

b) For a purpose for which the information may be disclosed to the institution under subsection 8(2).[66]

How will this be regulated?[67] How much does the AI and technology colour the triaging process and what is the ultimate influence on discretionary decision-making? Where multiple screens of various applicants are open at one time like in the Chinook and HPS systems do we not risk losing the individualization of the process? More questions than answers at this stage.

### (b) Impact on Individualized Assessments

The requirement that officers use their discretion to consider the nuance of an applicant's circumstances was confirmed by the Supreme Court of Canada in *Hilewitz* and *DeJong v*

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[63] McEvenue and Mann, Case Study, pp. 20 -21
[64] *Ibid*, p. 7, 20
[65] *Ibid*., p. 23
[66] Privacy Act, RSC 1985, c P-21, <https://canlii.ca/t/555k7> retrieved on 2021-10-15
[67] Similar questions to these were posed in the following piece on licensing standardization for datasets: Benjamin, Misha, Gagnon, Paul, Rostamzadeh, Negar, Pal, Chris, Bengio, Yoshua, Shee, Alex (2019). "Towards Standardization of Data Licenses: The Montreal Data License". arXiv:1903.12262 (hereinafter "Misha et al, "Towards Standardization")

*Canada*[68]. There, Canada's highest court mandated individualized assessments of applications with medical conditions that could lead to a finding of inadmissibility. The Supreme Court highlighted the need for fair, diligent, and proactive assessments by visa officers and medical officers, and a move away from a cookie cutter methodology that focused on the medical condition rather than the person. This reasoning has applicability to AI and other industrial aids as the legal requirement for individualized assessments must remain.

Trends in other countries, like Estonia and China mentioned above, have shown, however, that with the progressive implementation of AI the human decision maker (and thus discretion and individualization) can be *completely* removed from the decision-making process. This raises concerns regarding the fairness of decisions being made by AI solely or with the support of technological solutions. Discretion is fundamental to fairness in decision making *because* it facilitates individualization. While AI solutions are important for addressing ongoing backlogs, we must continue to promote the importance of the human decision maker. The need for discretion was highlighted by Song Richardson, Dean of the University of California-Irvine School of Law, who argued that human decision makers are necessary to ensure decisions are individualized *despite* potential backlogs:

> **The fact that we have backlogs resulting in a failure to give people the individualized attention they deserve tells us there's something fundamentally wrong with our justice system. Expediting the mass processing of people using AI isn't the answer. It's the opposite of justice.[69]**

### c) Perpetuation of Historical Bias, Racialization and E-marginalisation

Not only does the promotion of technology raise apprehensions regarding the promotion of speed and cookie cutter decision making at the expense of fairness, there is additional fear that bias will be embedded within AI and other high-tech options, increasing the already disproportionate exclusion of the (e)marginated. The former Director General of the Immigration Department, Andrew Griffith, acknowledged: "…we should be using the tools intelligently and efficiently. The challenge is not to embed biases into the system and create extra barriers for applicants".[70] Similarly, Petra Molnar has warned that "biases of the individuals designing an automated system or selecting the data that trains it can result in discriminatory outcomes that are difficult to challenge because they are opaque".[71] "Cookie cutter" decisions thus potentially reproduce established biases without the potential for critical review by a human decision maker attuned to these issues.

Research emerging on the use of risk prediction tools in the criminal justice system has, for example, uncovered that racialized and/or vulnerable populations are at a greater risk of being subjected to detention and imprisonment as a result of the bias built into data sets used to train

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[68] Hilewitz v. Canada (M.C.I.); De Jong v. Canada (M.C.I.), 2005 SCC 17
[69] Sahota, Neil (9 February 2019). "Will A.I. Put Lawyers Out of Business?" *Forbes*. Available at: https://www.forbes.com/sites/cognitiveworld/2019/02/09/will-a-i-put-lawyers-out-of-business/?sh=4ed5509a31f0
[70] *Ibid*
[71] Keung, Nicholas (26 September 2018). "Researchers raise alarm over use of artificial intelligence in immigration and refugee decision-making". *Toronto Star*. Available: https://www.thestar.com/news/gta/2018/09/26/researchers-raise-alarm-over-use-of-artificial-intelligence-in-immigration-and-refugee-decision-making.html?li_source=LI&li_medium=star_web_ymbii

these tools. This issue was heard by the Supreme Court in *Ewert v Canada*[72]. Mr. Ewert challenged the use of actuarial-risk assessment tools to determine his carceral needs and likelihood of recidivism. He argued that these tools had been trained on data derived from non-indigenous populations and that they could thus not be valid in predicting his risk as a Metis man. The Supreme Court ultimately agreed with Mr. Ewert, determining that in using this tool, the Correctional Services of Canada (CSC) had breached their duties under s. 24 of the *Corrections and Conditional Release Act*, which required that the organization "take all reasonable steps to ensure that any information about an offender that it uses is as accurate, up to data and complete as possible".[73] Recognizing criminal proceedings are distinct, similar issues could conceivably arise in administrative immigration applications, including for example in attempting to predict recidivism on a rehabilitation application if and when AI algorithms are applied to these assessments one day.

IRCC in turn, has posited that AI may in fact be able to detect and mitigate cognitive bias, identify gaps, and reduce individual human bias.[74] Critics like Molnar highlight that technology is far from neutral. It reflects norms, values and power in society that can be hidden within algorithms. In support of this argument, the authors reference the failed iBorderCRTL – a lie detector used by the European Union at borders that was powered by AI and was demonstrated to discriminate against "people of colour, women, children, and people with disabilities".[75] Bias in the data may also point to the limitations in *what* data is reported. Critics warn that "AI does not often display why certain outcomes are suggested, making biased recommendations difficult to identify".[76] There is additionally an access issue.

Accessing and navigating the technologies disproportionately effects certain racialized individuals and differently abled persons. Refugee claimants in-Canada and lower skilled labour streams are examples of individuals that could be negatively impacted by the move to techno-solutionism. For example, the new refugee portal recently announced by IRCC raises a myriad of questions regarding the potential use of AI, information gathering, use, storage, and privacy. Advantages these tools may provide regarding efficiency, consistency, and accessibility including faster processing times are important goals, but must be carefully weighed and balanced against the serious potential risks (privacy, hacking, access as a few examples). Consider how some of these migrants navigate these systems, after fleeing their country of origin and arriving here with very little. Asking them to even access a computer system to initiate their refugee applications in practice when they may have no resources, no funds, no support system may be a barrier.

The *Final Report on IRCC Ant-Racism Employee Focus Group*[77] supports concerns regarding bias and automation. To IRCC's credit they are attempting to better understand these issues:

### Biases in IRCC's programs, policy and client service

[72] 2018 SCC 30

[73] *Ibid,* para 74. See also Scassa, Teresa (14 June 2018). *Supreme Court of Canada Decision Has Relevance for Addressing Bias in Algorithmic Decision-Making*. http://www.teresascassa.ca/index.php?option=com_k2&view=item&id=278 (hereinafter "Scassa, SCC Decision"").

[74] IRCC Study, pp. 7-8, 12

[75] *Ibid.*

[76] *Ibid*

[77] Immigration, Refugees, and Citizenship Canada. "Final Report on IRCC Ant-Racism Employee Focus Group". *Government of Canada,* online: https://epe.lac-bac.gc.ca/100/200/301/pwgsc-tpsgc/por-ef/immigration_refugees/2021/122-20-e/POR_122-20- Final_Report_EN.pdf

**Participants expressed concern that some of the overt and subtle racism they have witnessed by both employees and decision makers can and probably must impact case processing. Some point to differences in refusal rates by country as an indicator that some form of bias must be at play.**

**They also point to a few ways in which established practices meant to reflect policies can have taken on discriminatory undertones for the sake of expediency or performance. These include:**

**• Discriminatory rules for processing immigration applications from some countries or regions that are different than for others (e.g., additional financial document requirements for applications from Nigeria)**
**• Concern that increased automation of processing will embed racially discriminatory practices in a way that will be harder to see over time.[78]**

### d) Digital Ghost Representatives

Finally, another serious concern effecting decision-making is when a self-represented applicant is really a victim. Arising out of rampant digitalization including AI are the new opportunities for unscrupulous fraudsters to game the process or offer tools for a generation of what I refer to as "digital ghost representatives" (DGRs). DGRs refers to unauthorized representatives that will exploit the benefits of AI technology and the wider dissemination of digital immigration information in order to "ghost" immigration applications and immigration pleadings under the guise of self-represented applicants that do not know better, for personal financial gain.

Ghost representation is already an enormous problem but as more data becomes available online in terms of case trends, better self-help chatbots, or simply as a result of collating data of online submissions, memorandums of law or legal submissions, it increases the opportunities for individuals to ghost. These DGRs can be less traceable than even current ghosts shielded behind a world of technological deception. How will applicants be treated in law when victimized by these profiteers? Although foreign nationals are now subject to a misrepresentation finding pursuant to section 40 of the *IRPA* for failing to disclose a representative on the application, how will the law deal with DGRs? The implications are far ranging.

### V. How Can Counsel Respond?

There is no question that the techno trend will only intensify, and so must stakeholder consultation and transparency. In some ways, trying to untangle these technological initiatives reminds me of the nineties when so little was publicly available on the operation of discretion, running to the Great library in Toronto attempting to secure a copy of then Citizenship and Immigration Canada's officers immigration manuals – the Holy Grail of information on decision making at that time. In the nineties the technology was very different; we communicated by pagers and typed submissions on what we thought were snazzy electronic typewriters. Regardless of the advancements, it feels familiar – scrambling to understand IRCC's priorities, processing times, the delivery, and ultimately how best to represent our clients. How can we respond? Ten

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[78]Ibid, p. 12

thoughts follow below, some relevant to individual practices and some global. Some practical, some aspirational.

### 1) Collective Advocacy – Exclusion/Portrayal

Rollouts where counsel are excluded from consultation on technological issues and processes must stop. The recent roll out of the new pathways to immigration on May 6th, 2021 particularly stung, as representatives were largely excluded from the process and at the time of writing continue to have access issues.[79] Counsel will not have access to the online citizenship portal until 2022. Other streams do not allow counsel to represent. [80] Bars to counsel mean bars to applicants which in turn can impact the decision-making process and outcome. The exclusion of counsel can create, for example, challenges in understanding why an application may have been refused where counsel has not overseen the submission process. This in fact occurred recently with the sorting of some of the online applications for the Temporary Resident to Permanent Resident Pathway into one of the French-speaking pathways. Since counsel was removed from the submission process for these applications, it was difficult to discern whether the error was technological or the result of human mistakes.[81]

These examples underscore the additional danger of IRCC seemingly transitioning to a plug and play self-help system. This fuel's a perception of a system dehumanizing the process where a choice to be represented is not mandatory. Combined with technological advancements, the learned behaviour over time is that all solutions are a mouse click away, perhaps through the aid of a chatbot or your friendly cyber-neighbor DGR? Yet when an error occurs there is little lenity, and the consequences are dire. Full access, with consultation prior to rollout, should be required.

Compounding the issue is the public portrayal of authorized representatives. Authorized representatives should be publicly recognized as valued stakeholders in the process of facilitating the transition of future Canadians. Representatives transcend all layers of society aiding in access to justice, which is all the more important in a techno-centric world. I have been advocating for years and have always found this public portrayal issue where the overwhelming focus is the harm in using representatives. The focus of the communication on IRCC's website regarding representatives is that of unlawful and/or unscrupulous practitioners.[82] Although the aim is important and appropriate, namely the protection of the public, the result is a generalization and a presentation of a severely distorted picture with little mention of the critical role of authorized representatives. This in part fuels a perception that representation is all perilous.

I have met so many well-intentioned hard-working IRCC personnel through conferences, working on committees, policy discussions or on a specific case - the mutual benefits are undeniable of

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[79] For further information, see: Immigration, Refugees and Citizenship Canada (5 May 2021). "Applications open tomorrow for new pathways to permanent residency for over 90, 000 essential temporary workers and international graduates of a Canadian institution". *Government of Canada.* Available: https://www.canada.ca/en/immigration-refugees-citizenship/news/2021/05/applications-open-tomorrow-for-new-pathway-to-permanent-residency-for-over-90000-essential-temporary-workers-and-international-graduates-of-a-canad.html

[80] See for example: Immigration, Refugees and Citizenship Canada. "International Experience Canada". *Government of Canada.* Online: https://www.canada.ca/en/immigration-refugees-citizenship/services/work-canada/iec.html

[81] Keung, Nicholas (5 October 2021). "'Earth-shattering': Why applicants to Canada's special, one-time immigration program fear a computer glitch may have dashed their dreams". *Toronto Star.* Available: https://www.thestar.com/news/canada/2021/10/05/earth-shattering-why-applicants-to-canadas-special-one-time-immigration-program-fear-a-computer-glitch-may-have-dashed-their-dreams.html

[82] Immigration, Refugees and Citizenship Canada. "Learn about Representatives". *Government of* Canada, Online: https://www.canada.ca/en/immigration-refugees-citizenship/services/immigration-citizenship-representative/learn-about-representatives.html

having representatives at play in the application process – especially for complex applications, yet it does not seem to translate to public messaging on IRCC's website. The stakes of this public portrayal now are even higher as the technology can further distance the public from the decision-maker. The need to rethink is clear. It starts with new governance protections for all stakeholders.

## 2) Responsible AI Governance

Keeping authorized representatives and counsel in the conversation can translate into checks and balances of sorts, not only with regard to the use of AI itself but in the way AI and other technology works. AI for one, is meant to make our lives easier and it should if implemented properly, but how do we also ensure it is fair? As canvassed by A.D. (Dory) Reiling there are over two dozen documents that set out ethical principles for the use of AI globally.[83] The Commission for the Efficiency of Justice of the Council of Europe has provided five core ethical principles for the use of AI in the administration of justice.[84] Reiling provided a useful summary of these five key principles, as follows:

1. **Respect for fundamental rights** to ensure design and implementation of AI is compatible with fundamental rights such as privacy, equal treatment, and fair trial.
2. **Equal treatment** to avoid discrimination between individuals and groups, with an eye to the data used by the algorithm and the algorithm itself to avoid unjustified distinctions.
3. **Data security** to ensure the data used and its sources cannot be altered, with models that are multidisciplinary in design and secure technologically.
4. **Transparency** to ensure methods are transparent and comprehensible, and to allow external audits. Choices made, data and assumptions used should be readily accessible to third parties to ensure legal protection against decisions based on those choices, with the possibility of judicial review by the courts; and
5. **AI under user control**, to ensure the AI cannot decide by itself, does not prescribe anything, and users remain in control of the choices they make, including having the ability to easily deviate from the outcome of the algorithm when needed. [85]

A relevant example that illustrates the importance of being mindful of ethical principles when implementing AI is the immigration detention system in the USA. In 2013, the Department of Homeland Security (DHS) in the USA launched the "Risk Classification Assessment" (RCA) tool, designed to assist Immigration and Customs Enforcement (ICE) officers in determining whether a foreign national ought to be released or detained while awaiting deportation proceedings.[86] The RCA tool took database records and information gathered through an interview process into account through a weighted scoring system that was meant to produce recommendations with regard to custody, bond, and supervision based on security and flight assessments[87] to recommend that only high, severe risk individuals remain in custody.[88]

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[83] A. D. (Dory) Reiling, 'Courts and Artificial Intelligence' (2020) 11(2) International Journal for Court Administration 8. DOI: https://doi.org/10.36745/ijca.343 (hereinafter Reiling, "Courts and AI"). Note that while the article focused on how AI can be used in court practice, the principles discussed have wide application.
[84] Reiling, 'Courts and AI", p. 6.
[85] *Ibid*, p. 6-7
[86] Robert Koulish, et. al. (22 May 2020). "Injustivce and the Disappearance of Discretionary Detention Under Trump: Detaining Low Risk Immigrants without Bond." Available: https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=6703&context=faculty_scholarship, p. 2.
[87] *Ibid*.

The RCA tool was programmed to produce one of four recommendations to ICE officers: (1) detain in custody without bond; (2) detain with eligibility for bond in a specific amount (with accompanying recommended bond amount); (3) supervisor to determine; or (4) release.[89] The RCA tool was to draw from four areas of information sourced from ICE officers, including data sourced from observations and interviews, from ICE databases and immigration history, through an evaluation of public safety, and through an evaluation of flight risk.[90] While the RCA tool seemed, in theory, to represent a harmonious balance between technology and discretionary decision making, in that it could streamline processes, reduce the amount if individuals in immigration detention, and flag only high-risk individuals for detention, its application has had the opposite effect.

In a report out of Duke University Law School, it was found that the RCA tool alone was not the cause of the result, but the policy and law that informed it and officer bias that trained the algorithm to reinforce bias against immigrants.[91] Regrettably, a tool intended to make the process fairer and more individualized was used to reinforce political priorities as a result of modifications made after rollout. Significantly, the modifications included a change in the algorithm to limit the ability of the RCA tool to make recommendations and required more ICE supervisor intervention earlier on in the process.[92] Unfortunately, due to a lack of transparency regarding the algorithm and outcomes, it was difficult for the authors of the report to gain insight into the tool, its use and functioning, and more significantly has resulted in errors and inaccuracies built into the program to go undetected and unchallenged for years.[93] The accountability of the tool's functionality was thus lacking for many years.

We can learn a few things from this example in conjunction with the principles outlined above. Before AI is implemented, it must be ensured that the algorithm complies with law and policy to ensure the rights of those impacted by the outcomes are not infringed. To this end, we must avoid generative[94] and segmented[95] algorithms and AI should consolidate and compile relevant information in a safe and secure process, to protect privacy and ensure reliability of information. Most importantly, there must be assurances of transparency and maintenance of user control. A certain level of transparency in the decision-making process has allowed applicants and counsel to challenge and subject to review decisions that were unfair or unreasonable, which has informed

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[88] *Ibid*, p. 1.
[89] *Ibid*, p. 2.
[90] *Ibid*, p. 3.
[91] *Ibid*, p. 9-10.
[92] Kate Evans, et. al. (2020). "Manipulating Risk: Immigration Detention Through Automation." Available: https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=6692&context=faculty_scholarship, p. 794.
[93] *Ibid*, pp. 841-843.
[94]These algorithms pose a serious risk for society in that they can create false media through the use of sophisticated bots. Additionally, the machine learning concerns which were witnessed within the Microsoft chat bot are very real. If a machine's generative algorithms learn from data that itself was created through poor judgement, there is a possibility that the AI will replicate such mistakes. In the example of the Microsoft chat bot, the machine began to replicate hate speech after conversing with several individuals (it learnt the algorithms through data analysis of undesirable information).
[95] This essentially refers to the division of clients into groups that are comprised of individuals with common characteristics. The aim here is increased effectiveness in pre-emptive targeted interventions such as special outreach or directed marketing and policy making. While the pre-emptive nature of such a system can be of use at times, the outreach gained from it is reflective of the system itself meaning bias and underrepresentation at the outset (in the categorization stage) can occur. Moreover, the collection and use of the vast volume of personal information required to categorize individuals can pose privacy concerns. The complexity of such a system can make the explanations of how they function very difficult as well. This can result in automated decisions that ultimately do not provide sufficient information to explain how the system came to the decision it came to, causing issues of transparency.

and shaped the decision-making process and gives much needed respite for decisions that may fall short.

### 3) Innovative AI Governance

As a protection to decision-making, we must ensure the promotion of not only responsible AI governance but innovative AI governance. There is an opportunity for Canada to become a world leader and codify in law these protections. New Zealand became the first nation to develop an Algorithm Charter that states what governments can and cannot do in their use of AI measures.[96] This was a very big step in the right direction to limit the discriminative use of AI as it relates to legal fields, including that of immigration.[97] It's development followed the implementation of a harm model that was taking information such as age, country of origin, gender, usage of public health services, law enforcement encounters, and immigration status upon entering the country for the first time to determine potential "*trouble-makers*".[98] This model was met with strong opposition, criticism, and complaints of the government's use of personal data and lack of transparency. Additionally, Immigration New Zealand was criticized for the use of ethnicity data in its risk modelling as it had the potential to further marginalize racialized groups.[99] This resulted in the passing of the aforementioned Algorithm Charter. Canada should begin working on its own similar AI Charter.

The NZ Algorithm Charter has a particular emphasis and commitment to point government agencies in the right direction on how to carefully utilize algorithms while striking a balance between privacy and transparency.[100] Moreover, this Charter aims to minimize and eliminate unintended bias in the use of algorithms which can result from training by humans whose actions may ultimately have implicit biases or errors, including the development of a risk matrix.[101] The ultimate goal is that transparency will be increased, and privacy, ethics, and human rights will be safeguarded. Key features of innovative AI governance for IRCC will include in my view a similar AI Charter with: (1) a clear definition of the use of AI; (2) Algorithmic Impact Assessments for all AI uses; (3) transparent algorithms; (4) transparent triaging and decision-trees that can be accessed by applicants and counsel; and (5) external audits with enforcement powers. For counsel we must be alive to these challenges, seek the implementation of these measures both individually and through larger advocacy organizations, and legally question and challenge rollouts without these precautions. Failing to do so may result in the decision-making process being undermined. We have to modernize our legal thinking, and help the law do the same.

### 4) Procedural Fairness and Discretion 2.0

What will procedural fairness mean in this new high-tech exchange? Will procedural fairness be

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[96] The Conversation (28 April 2021). Canada should be transparent in how it uses AI to screen immigrants. Accessed October 12, 2021. https://theconversation.com/canada-should-be-transparent-in-how-it-uses-ai-to-screen-immigrants-157841

[97] Despite these positive efforts, New Zealand was subject to scrutiny prior to the implementation of such a charter for its use of the immigration harm model. This system's ultimate purpose was to track down and deport "undesirable" migrants or "likely troublemakers". *Ibid*

[98] *Ibid*

[99] RNZ, "Immigration NZ pilot described as racial profiling," YouTube, 5 April 2018. https://www.youtube.com/watch?v=nfqPCrQmVKs&t=149s&ab_channel=RNZ

[100] New Zealand Government (July 2020). Algorithm Charter for Aotearoa New Zealand. https://data.govt.nz/assets/data-ethics/algorithm/Algorithm-Charter-2020_Final-English-1.pdf

[101] *Ibid*

redefined? As set out in detail above, both the decision-making process and what is required moving forward to be fair are being altered by technology. I refer to it as procedural fairness 2.0, in a new digital world of law. We must ask as counsel in client specific files and generally if any part of the process is being managed by AI, including what types of algorithms or other tools like Chinook are being used, for full transparency and fairness. The extent of the questions that need to be asked will be a direct reflection of the overall transparency. To ensure we preserve the rule of law, putting IRCC on notice will communicate our client's expectations and recognize procedural fairness/discretion 2.0 is evolving, and that what is fair now includes techno-facets.

Anything that impacts an officer's discretion is in play. Uploading limits, barriers to counsel, de-prioritization of applicant streams, and the use of non-transparent technology are now all realities faced by counsel in representing their clients. Discretionary decision-making may be shaped before a file ever reaches an officer and this must become part of our legal arguments. Reimagining what discretionary decision-making means in 2021 and beyond begins now.

For example, aside from AI, for cases being decided with tools like Chinook and HPS there are many alarms. The Chinook model may allow for error on the decision makers side by reviewing another applicant's data when making a decision on a particular application. Potentially making requests for information related to other applicants. Also, the manner in which Module 4 generates pre-written refusal reasons can perhaps sway an officer to consider more refusal grounds or may result in generic reasons. There does not appear to be a screen that lists all the reasons to accept an application. It seems unbalanced.

Refusal rates following the implementation of Chinook have been increasing. From the cross examination of Mr. Daponte during the Federal Court matter discussed above we learned that refusals grew from 31 percent in 2016[102] to 40 percent in 2019, the first full year of Chinook's usage, and then to 53 percent in 2020.[103] The use of the system is also not fully reflected in the GCMS notes and it may ultimately be more difficult to understand the Officer's process and the outcome. The current Federal Court matter may shed some light and determine any causality.

Same issues arise with HPS where we see rising refusals rates after implementation of the technological aid. Specifically, for temporary worker applications, IRCC-Manila was subject to a 16 percent increase in 2017 compared to the previous year, a 30 percent increase in 2018 and finally a 35 percent increase in 2019 compared to the previous year.[104] IRCC-Colombo was prone to a 45 percent overall increase of TRV applications in 2017 as compared to the prior year.[105] A primary concern that stood out in a report regarding HPS was the bottleneck effect caused by the target of screening thirty applications per day using the system. Despite the lack of trepidation regarding this target in the report, it is safe to assume that a high target for officers can lead to human error in reviewing applications due to the increased pressure to meet the target.

## 5) What Is IRCC Trying to Fix?

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[102] Federal Court (4 August 2021). Cross-Examination of Andie Melo Daponte on his affidavit dated July 29, 2021.
[103] *Ibid*
[104] Immigration, Refugees, and Citizenship Canada (20 November 2017). *Temporary Resident Unit Briefing Note.*
[105] Immigration, Refugees, and Citizenship Canada (February 2018). *Introduction and Adoption of MANIL's Hiraya Processing Suite in CLMBO.*

Applicants and counsel need to be better informed as to what IRCC is addressing with AI and other technologies. A more comprehensive, transparent review of the day-to-day challenges and expectations of visa officers should be communicated and understood, given the comparable and disparate rationales from governments worldwide eager to pilot technology in immigration contexts. It will be important for all stakeholders in this discussion to find the root of the problems or challenges facing immigration officials – resources, volume, poor representation, fraud, systemic racism - as opposed to being seduced by the techno-solutionism made available by rapidly expanding AI as a panacea. The *IRCC Anti-Racism Employee Focus Groups* is a positive and transparent initiative. A better understanding must inform our broader advocacy initiatives, as well as in client specific expressions, to understand what is driving the need for new innovation and to protect against discretionary decision-making being eroded.

### 6) Technology Cannot Replace Communication but It Can Help

Transparent processing priorities and processing times, as well as more timely communication, are not new asks by the counsel community. This will not all be fixed by chatbots but more frequent and timely updates by virtue of technological measures can help. An applicant should be able to access their file, find out reasons for refusal and limit the need for the cumbersome Access to Information and Privacy Records (ATIPS) process. The process should become more accessible for applicants and authorized counsel. The *Playbook on Automated Decision Support* noted earlier could be another positive initiative.

Access will allow for concerns to be earlier identified, will help preserve the individualization of the process and act as a second set of eyes for IRCC by those most interested in the process and the outcome - the people and their representatives IRCC serves. Clearly there exist technological hurdles that will take time to manage. There are also likely many resource and technical issues IRCC is managing to facilitate better access and general technological rollout. Nevertheless, productivity gains can be transformative if the technology is implemented in a responsible and innovative manner. Procedural fairness and discretionary decision-making 2.0 fortified and modernized by one step – enhanced access.

### 7) Complex Cases Cannot Be Categorized as Troublemakers

Like the harm model in New Zealand, it often feels like anything out of the ordinary, usually admissibility concerns both serious and minor, are jettisoned to a suspended orbit. As counsel, we often feel that IRCC "will get to the "troublemakers" (the unfortunate term used in New Zealand) when they can and told not to inquire as there are no identified processing times. Highly discretionary applications like H&C and TRP applications appear to have been deprioritized. Unpublished processing times, fewer offices that will entertain "outside of the box" applications and the lack of on-line options have become more prevalent. De-prioritization is the equivalent of justice delayed is justice denied. These applications are critical because they permit expanded discretion and relief where the law does not speak to sometime competing objectives. Sometimes extraordinary people can suffer ordinary misfortune. De-prioritizing these applications undermines the humanity of the process and may communicate to officers to look at these applications last. IRCC must be transparent on processing priorities and timelines for all applications. Our submissions must reflect these limitations in seeking relief in a timely manner.

**8) Settled Legal Issues May Become Disrupted by Technology**

The law must evolve to ensure the collection of information is not used as a blunt and cloaked deterrent unresponsive to new technological realities. For example, each year we see so many people who are facing misrepresentation allegations because they legitimately misunderstood a question on a temporary resident or permanent resident application form usually relating to previous refusals in the USA. According to section 40 of the *IRPA,* misrepresentation findings carry five-year bans from Canada and five-year bars from applying for permanent residence. When captured by a misrepresentation finding many immigration applicants have to dramatically alter their life plans and potentially that of family members as well. Few individuals can put their lives on hold for five years and/or still qualify five years later. The questions on forms are deemed beyond dispute. In other words, the questions are clear and concise, and applicants should have no difficulty answering them accurately. However, this is simply not always the case.

For example, on a study permit application form - IMM 1294 (06-2019) E the question at Box 2 (b) reads, "*Have you ever been refused a visa or permit, denied entry or ordered to leave Canada or any other country or territory?* So many clients miss the portion regarding "*any other country or territory"*? Instead of multiple questions in one, the questions should be divided and set out in plain language. Perhaps like:

1. *Have you ever applied to Canada for any type of immigration application for permanent or temporary residence (visit, study, work) visa or permit and been refused?*
2. *Have you ever applied to anywhere in the world for any type of immigration application for permanent or temporary residence (visit, study, work) visa or permit and been refused?*

For applicants who applied for a visitor, study or work permit and then apply for permanent residence, the forms can become even more confusing. The permanent resident application form - IMM 5669 (06-2019) E the question at Box 6 (d) asks whether the principal applicant and/or any family members included on the application have ever "*been refused refugee status, an immigrant or permanent resident visa (including a Certificat de selection du Quebec (CSQ) or application to the Provincial Nominee Program) or visitor or temporary resident visa, to Canada or any other country or territory?*

The question introduces refugee matters and refers only to visas and not permits. An applicant that was refused a study or work permit may interpret Question 6(d) as not applying to their circumstances as there is no mention of the word "permit" only visa. The terms study and work visas are not commonly used. This is also another example of asking multiple questions as one. To me, this runs counter to the stated purposes of applicants being candid and eliciting material information from applicants. It reads more like a trap. Again, this question could be broken down and simplified but this one in my opinion, requires *twelve* separate questions.[106] Moreover, the information of refusals is already in IRCC's databases.

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[106]*Have you ever made a refugee claim in Canada? Have you ever been refused refugee status in Canada? Have you ever withdrawn or abandoned your refugee claim in Canada? Have you ever made a refugee anywhere in the world? Have you ever been refused refugee status anywhere in the*

Given the life changing consequences, let us ask questions that make sense and are clear to most people and not ask for information already in clients' histories, and stop what sometimes feels like a game of "gotcha". In no way am I advocating applicants should be any less than completely truthful but the technology should be positioned to aid and streamline the information gathering process for more timely processing and to ensure the enforcement is limited to those attempting to game the system. These concerns must be highlighted when seeking discretion across the many application categories that present issues of interpretation and devastating consequences. New legal arguments regarding fairness and individualisation with reference to technological realities should become prevalent in our submissions and pleadings.

### 9) Effective Written Submissions When Seeking Discretionary Relief

As mentioned through points one to eight, submissions and pleadings will have to account for these emerging techno-realties and candidly address the impact it could have on those you represent or cannot effectively represent because of these challenges. But beyond what is being said, some rules do not change. Key to seeking discretionary relief is effective written advocacy given that the opportunity for in person advocacy at the application stage has all but disappeared. This means point first writing, context before detail, beginning with an **Overview Statement -** your thesis: a succinct statement to explain why the law should warrant a positive exercise of discretion in your client's favour.

Next do not **overstate facts** but do not dehumanize either. Emotion and passion have a place in written advocacy. State clearly what is information and what is belief. **Distinguish** sources of information. **Subheadings** are useful and helpful not only for the eventual reader but also to assist the writer in setting out the arguments in a clear and concise manner. It is my preference to **set out the law** (legislation, case law) and then proceed to manuals and or other third-party evidence to frame the issue. But ensure the reader understands why you are citing the law and how it is relevant to your case – be laser focused. Ensure case law and **evidentiary quotes** are not unnecessarily long or cannot otherwise be paraphrased. This is a common mistake and takes the reader away from your arguments in certain instances.

To assist in focusing my submissions, I rely on something I have named the **DEC principle** in reading legislative provisions – understand the legal **DEFINITION** of the section, introduce any **EXCEPTIONS**, and explore and identify any **CROSS REFERENCES**. This helps me understand the legislative paradigm in which the decision will be made in order to frame the request for discretionary relief. **Over reliance on manuals and guidelines** as authority can be problematic in framing a request for discretionary relief. The ask should be centered on why the guideline should be exercised in your client's favour, and not focused on an argument that it must be applied where the officer has wider discretion. Everything that is included in the legal submission with ready reference to supporting law, policy, fact, or evidence should tie into the

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*world? Have you ever withdrawn or abandoned your refugee claim anywhere in the world? Have you ever made an application for permanent residence in Canada for an immigrant or permanent resident visa (including a Certificat de selection du Quebec (CSQ or application to the Provincial Nominee Program) and been refused? Have you ever you ever made an application for permanent residence anywhere else in the world and been refused? Have you ever applied to Canada for any type of temporary residence visa or permit (visit, study, work) and been refused? Have you ever applied to anywhere in the world for any type of temporary residence visa or permit (visit, study, work) and been refused?*

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discretionary ask. A clear request, with a clear why and how the facts and law support your case, should lead to positive exercises of discretion. When all else fails, then we look to point ten.

### 10) Court Intervention

Each year complex legal issues are decided before the Supreme Court, Federal Court, Immigration and Refugee Board and provincial courts as the jurisprudential and legislative evolution of the *IRPA* continues to unfold. The resulting jurisprudence impacts every aspect of immigration representatives' practice from legal strategy to professional and ethical obligations. These developments occur not only in the courtrooms, but in boardrooms, in the online clouds, at ports of entry and everywhere in between. As the technology alters immigrant client experiences and expectations with increasing consequences this will inevitably mean more challenges both on individual and collective bases - class actions, group litigation test cases, etc.

The litigation may sometimes be necessary to better establish predictability, minimize unintended consequences and transparency in immigration applications. In the face of transformative immigration delivery many federal court decisions and the litigators that will advance the cases over the next number of years will reiterate that Canada remains at the forefront of creative, sophisticated, and important issue identification, debate and ultimate resolution that will likely have effects domestically and internationally especially as it relates to AI. In short, counsel must collaborate more than ever before even internationally, to find a new way that preserves discretion and individualization, and litigation alternatives will be key.

## VI.    Conclusion

A common theme throughout many countries includes, for the most part, an increasing pursuit to modernize the delivery of the legal process. While the implementation of successful AI systems and other technologies does not always come to fruition, what remains concerning is the efforts to transform immigration delivery without equal measures being put in place, in many circumstances, for responsible and innovative governance. The import of this approach cannot be understated, and the consequences are significant. For one, this can destabilize the rule of law and fundamental values and principles inclusive of discretionary and individualized decision-making. IRCC is in its infancy in applying these technologies so an opportune time to explore.

Over time, AI and other technologies will undoubtedly fundamentally alter the manner in which immigration applications are processed. The hope is that if applied properly it will result in many gains. What we must avoid however, is the sharp and shiny new tool of AI bypassing consensus building, measured scrutiny and worse yet, the rule of law, devolving immigration decision-making into a moving target based upon the latest undisclosed algorithms as we have seen in some examples internationally. I, however, remain optimistic for a number of reasons.

One, the technology if properly governed and set out clearly in law will allow for transformative gains from processing to access and finally to delivery. IRCC unlike other stakeholders is piloting its own AI development in house, which helps the user maintain control. Two, IRCC is staffed by many hard-working well-intentioned individuals that want to make a positive change. They must be allowed to shine and be encouraged to facilitate a new culture of increased

transparency and cooperation. Last and by no means least, our counsel community in Canada is strong and they are up to the challenge.

The need to work together is acute given the rapid evolving challenges ahead, failing which we will likely be set back and mired in years of squabbles and distrust that may usher in a painful evolution of the expanded use of technology in Canadian immigration law. We may suffer the same setbacks that other governments have faced when they attempted to go it alone. If we put in the collective work now, pressing for collaboration, oversight, transparency and responsible implementation, we have the potential to become a world leader.

Ultimately, we must agree we are striving together to fashion our immigration law in a manner that preserves our international reputation as a country of invitation, fairness, and openness. At the same time, we will be promoting the integrity and safety of our programs as well as economic, social, and cultural nation building on a solid, fair, and predictable legal foundation. One where discretionary decision-making is undisturbed no matter the international and technological pressure that may be on the horizon.

**Canada Border Services Agency (CBSA)**

As of 2017 the Canada Border Services Agency (CBSA) has engaged in the use of radio frequency identification (RFID) technology at select Ports of Entry (POE) in Canada.[107] According to the CBSA, the following Canadian and U.S. travel documents have been embedded with RFID technology:

- *electronic Canadian Permanent Resident card;*
- *Canadian Enhanced Driver's License from Ontario, Manitoba and British Columbia;*
- *Enhanced Identification Card from Manitoba and British Columbia;*
- *U.S. Enhanced Driver's License from Vermont, New York and Michigan;*
- *U.S. Passport Card;*
- *U.S. Electronic Permanent Resident Card;*
- *NEXUS card; and*
- *Free and Secure Trade (FAST) card[108]*

The tag number associated with the RFID chip embedded in these documents is effectively detected and read by an RFID reader once the traveler enters the inspection lane. The detection occurs before the traveler even reaches the booth for inspection. The information on the traveler is then retrieved from secure databases and a risk assessment is conducted, all of which is then displayed on the screen for the CBSA officer.[109] The CBSA commented on the utility of this technology:

> *RFID technology saves time by eliminating manual entry of traveller information. This helps the CBSA meet the growing demand for fast and efficient traveller screening.*[110]

The use of RFID technology by the CBSA to expedite traveler screening is laudable but its use raises many questions mainly surrounding transparency and privacy concerns. How is traveler information assessed for risk following the reading of the RFID tag number? Which databases and what information is being relied upon to produce this information, and do applicants have access to same? Is the information neutral? How much do officers rely on the risk assessment?

In addition to the use of RFID technology, the CBSA is currently working in partnership with Deloitte to develop a chatbot that will address the volume of emails and calls from Trade Chain Partners and Stakeholders. The hope is that this technology will in turn improve the user experience.[111] The CBSA anticipates that the introduction of a chatbot will address 85% of client inquiries without need for referral to a human agent. The chatbot will "…reply with answers,

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[107] CBSA (18 April 2019) "Radio Frequency Identification (RFID) Technology," Government of Canada. Accessed 4 March 2020. https://www.cbsa-asfc.gc.ca/travel-voyage/rfid-irf-eng.html (hereinafter "CBSA, "RFID"")
[108] *Ibid*
[109] *Ibid*
[110] *Ibid*
[111] Deloitte. "Chatbot Experiment Overview: CARM Innovation Program". (hereinafter "Deloitte, "Chatbot Experiment").

perform actions, ask for more inputs or respond with error handling prompts ."[112] Inquiries will only be referred to a human agent if the chatbot is not confident in answering the question posed.

The CBSA explains that the chatbot will be an important component of the CBSA Assessment and Revenue Management (CARM) solution.[113] The CARM program has been proposed as a solution that will modernize and streamline the process of importing commercial goods, providing a modern interface for importation, giving importers access to their information through self-service, reducing the cost of importation and improving consistency and compliance with governing rules. A chatbot will support the achievement of these goals by interacting with trade chain partners and "enabling expedited transactions".[114]

## **Employment and Social Development Canada (ESDC)**

Based upon review of an internal 2018 unclassified memorandum, entitled *Memorandum to the Deputy Minister of Employment and Social Development Canada Government of Canada Status Update on the Department's Artificial Intelligence and Automation Projects,* we understand that 31 department initiatives are related to AI. These initiatives are at various stages of completion.[115] Of those projects, at least a dozen could arguably be related to work on Labour Market Impact Assessments (LMIA); this includes the general "media monitoring" initiative and the more specific "algorithm for screening in the recruitment process".[116] Nine of these initiatives are partially or fully outsourced to external vendors. The initiatives appear ambitious, including compiling Labour Market Program Evaluations and also piloting chatbot technology.[117]

Following numerous Access to Information Requests we have learnt some valuable information regarding the use of AI within the organization. Firstly, the ESDC directive calls for ESDC to conduct algorithmic impact assessments for each automated decision that provides external services and implement risk mitigation measures based on the level of risk identified in the assessment.[118] Additionally, the directive on automated decision making applies to those systems that provide external services and any systems or tools that function to recommend an administrative decision regarding an external client.[119] The materials note that the Chief Data Officer (CDO) is working in accordance with the Data and Policy Committee (DPC) to establish AI governance for the organization through machine learning algorithms.[120]

Further materials received from ESDC shed light on the ESDC data strategy as it relates to the use of AI in their systems. They note that the main problem lies in that ESDC manages a very heavy workload across several branches, regions, functional groups, and programs/services.[121] Managing such a volume of workload is very time consuming and resource intensive and as such, ESDC proposes the potential solution of "Deep learning". In simple terms, "Deep learning" is essentially the learning of aggregate patterns to identify, analyze, and respond to risks. It enables

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[112] *Ibid*

[113] CBSA (03 March 2020). *CBSA Assessment and Revenue Management.* Available: https://www.cbsa-asfc.gc.ca/prog/carm-gcra/menu-eng.html

[114] Deloitte, Chatbot Experiment

[115] ESDC (2018). *Memorandum to the Deputy Minister of Employment and Social Development Canada Government of Canada Status Update on the Department's Artificial Intelligence and Automation Projects.* (hereafter "ESDC, "Memo"")

[116] *Ibid,* p. 3-4

[117] *Ibid. p.* 10-13

[118] Employment and Social Development Canada (2019). Memorandum to the Senior Associate Deputy Minister of ESDC and Chief Operating Officer of Service Canada.

[119] *Ibid*

[120] *Ibid*

[121] National Conference (30 September – 3 October 2018). Creating an Enterprise-Wide View of Risks Through Deep Learning.

the recognition of patterns in vast volumes of data that would simply be impossible via human processing.[122] It is comprised of a five-phase process as detailed below:

*Phase 1: Select Data*

Unstructured data was used in the proof of concept, consisting of audit reports from the last 10 years. To be specific a total of 107 files and 2,154 pages were processed.[123]

*Phase 2: Word Database*

A bank of 92 common word embeddings, which are often seen in audit reports to signal where important statements are likely found was created.[124]

*Phase 3: Machine Learning*

Audit professionals have manually categorized over 500 statements as risk or not. A series of binary true/false questions were then incorporated into the algorithm to make decisions on what is risky.[125]

*Phase 4: Statement Bank*

Once the machine recognizes patterns of what a likely risk statement is, a bank and/or list is created. Automatically, the machine then provides a score of how confident it is in having identified the statement as risky based on the pattern.[126]

*Phase 5: Link & Tag*

The final phase includes the tagging of statements to the 'ESDC Audit Universe' wherein statements are linked to corresponding auditable entities from the Audit Universe to provide views for analysis.[127]

ESDC materials also revealed important risk considerations relating to generative algorithms and the use of client segmentation.[128]

[122] *Ibid*
[123] *Ibid*
[124] *Ibid*
[125] *Ibid*
[126] *Ibid*
[127] *Ibid*
[128] *Ibid*