References to Artificial Intelligence in Canada's Court Cases

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Abstract: Artificial intelligence (AI) is a widely discussed topic in many fields including law. Legal studies scholars, particularly in the domain of technology and internet law, have expressed their hopes and concerns regarding AI. This project aims to study how Canada's courts have referred to AI, given the importance of justices' reasonings to the policy makers who determine society's rules for the usage of AI in the future. Decisions from all levels of both Canada's provincial and federal courts are used as the data sources for this research. The findings indicate that there are four legal aspects on how AI has been referred to in the Canada's court cases including: (1) Legal research, (2) Investment tax credits, (3) Trademarks, and (4) Access to government records. We use these findings to make suggestions for legal information management professionals for how to develop collections and reference services that are in line with the new information needs of their users concerning AI and the rule of law.

Keywords: artificial intelligence, law, information management, Canada.

INTRODUCTION

AI is an emerging and disruptive technology that has already changed how information is managed and processed and promises to continue doing so in the future. In this paper, we discuss the changes and impacts of AI in the area of legal information management by using the data from database research of Canadian case law. The objective of this paper is to investigate how judges at all levels of the Canadian courts have referred to AI and to use those findings to further understand the future trends in AI-related cases in Canada. Furthermore, we use the findings to make suggestions for legal information professionals, as to how they could develop their collection and design reference services to better serve the information needs of their users in the area of AI law, an emerging and unique legal specialty.

AI has stimulated much discussion within the academic community and among the general public, however many of these discussions center more on concerns about AI rather than its benefits, particularly when it comes to the rule of law and citizen privacy protection. In the following section on related studies, we note that several studies view AI and the rule of law as both opportunities and threats. Since there is a paucity of research related to AI and legal information management shown in the related work section, we hope this paper will lead to further discussions with other researchers and encourage them to deepen their investigations into the area of AI and its relevance to legal information management.

This paper examines the following question: "how is AI referred to in Canada's court cases?". This project aims to study how Canada's courts have referred to AI, given the importance of

justices' reasonings to the policy makers who determine society's rules for the usage of AI in the future. It is very important to listen to the reasoning of justices given their impact on policy makers who will determine society's rules for the usage of AI in the future.

In summary we found that references to AI in Canada's court cases divide to four legal categories: (1) research, (2) investment tax credits, (3) trademarks, and (4) access to government records. The trademarking of AI is the most frequently referred topic since businesses need to protect their technology and return on investment. In the discussion section of this paper, we also outline how legal information professionals could develop their collections by obtaining materials that cost money from general book publishers or accruing materials that are free of charge through international non-government organizations via the Internet. Reference service strategies for the content in AI law are also discussed.

RELATED WORK

AI and the rule of law

In legal circles, AI is both viewed as an opportunity and a threat. The beneficial use of AI in law depends on the fact that AI technologies promise to aleviate the already high workloads in various aspects of the judicial system, all which are all labour intensive and time-consuming. For example AI techniques, particularly in machine learning, have the ability to rapidly recognize patterns in large datasets, enabling both law-firms to quickly make decisions about whether to accept cases or judges to issue sentences. Natural language processing is another AI technology that allows computers to better understand human languages and enables lawyers to predict the outcomes of legal claims or judicial decisions.

The application of AI methods is not new to the law. One of the first projects in AI and law was the TAXMAN system by McCarty and Sridharan (1982).
[1] According to Rissland et al, (2005)[2], the research of applying AI to the law was the primary research stream that contributed to the birth of case-based reasoning.[3] Since reasoning that depends on past cases is important in legal practices, case-based reasoning as an AI technique is a natural fit.[4] Case-based reasoning is also inherently explainable, which is an important characteristic of technologies used for supporting problem solving that may have many consequences and may require an explanation.

AI technologies described above are already being implemented in the computer systems of many law firms and courts. In the future, AI could take over some of the time-consuming tasks that normally occupy lawyers and judges, thus freeing them up to do other more important tasks and reduce backlogs in the judicial system.[5] An example application of AI in legal work is the AI system "Blue J Legal", which was designed to predict outcomes in tax law. It predicts the likely rulings that the judges would make for certain kinds of cases in tax law, and enables lawyers to prepare their court arguments accordingly.[6] Alarie, Niblett & Yoon (2016) argue that although AI is a helpful tool it cannot replace human experts who have good legal knowledge and training.[7] Another similar study further discusses the application of AI to the work of lawyers and to the justice system. These applications rely on the fact that the law is based on sets of rules and that rule-based AI systems can programed by software engineers to perform such tasks and process data in accord with them. However, legal practice touches on complex social issues as well and

there need to take into consideration the complexities of each jurisdiction's legal process. AI cannot (yet) take into consideration these kinds of contextual nuances. Thus, at present, AI applications function more as legal support systems, than as substitutes for lawyers' expertise.[8]

On the other hand the application of AI in the law can also be seen as a threat. Even though AI technology has been increasingly used in law enforcement because of its ability to process a large amount of information quickly and identify patters that can help police and other law enforcement entities act quickly on crimes. In the US, AI has been used by various federal agencies since around 1980 including: the Drug Enforcement Administration, the Environment Protection Agency, the Federal Bureau of Investigation, the Internal Revenue Service, and several other agencies and departments.[9]

While this may be beneficial for the government agencies using AI in their work, the AI technology itelfe has given rise to a great amount of concern, particularly around the issue of privacy. AI systems like Clearview AI allows governments to more easily surveil its own citizens easier and could potentially be used for purposes that go beyond crime-fighting. The use of such tools could constitute an invasion of privacy of ordinary citizens whose actions are neither illegal nor harmful and thus could infringe on basic civil liberties, depending on how to tool is used.[10] That leads to the reason why many legal experts demand the legal curtailment of AI applications, expecially since AI systems can gather and process large quantities of personal information such as health datasets containing personal identifiable information. Thus, introducing laws that regulate the use of AI will likely increase accountability, and reduce the likelihood of misuse of AI by both government and the private sector.[11]

Another area where AI is a threat is its use in the miltary. Legal scholars are demanding that countries apply strict regulations to the application of AI technology for military purposes, particularly in the control of autonomous weapons.[12] Legal experts say AI weapons pose an existential threat to humanity if they get out of control. It is therefore urgent that international laws be created to formally regulate AI development for military purposes such as AI robots and drones used in armed conflicts to replace human soldiers. In May 2013, the European Parliament discussed AI development restriction policies among its members.[13] The regulations will require that there be human programmers in all AI software development in order to not allow AI to totally become autonomous and make its own decisions with complete independence. As well as being a legal requirement for members of the EU, this is also a moral responsibility for every country.[14]

The third threat that AI poses is to lawyers because AI may result in unemployment or at least induce significant changes in what work lawyers do and how they do that work. For an example, much of the work done in the litigation departments of corporate law firms will likely be replaced by AI algorithms since a lot of the day-to-day operations and clerical duties can now be performed on a high level by AI.[15] Some lawyers still consider that the impact of AI software and automation is lower than in other professions, particularly in the banking and financial sectors. However, when AI is built to analyze past legal decisions written by courts and tribunals and used to discover patterns that predict the outcome of future cases with a high percentage of accuracy, this will directly reduce the amount of time lawyers spend on reviewing legal documents.[16] There might even be no more jobs for junior lawyers to in legal research and the preparation of court materials.

AI is therefore changing the nature of lawyers' work and Traditionalist lawyers feel threatened by AI technologies.[17]

METHODOLOGY

The purpose of this paper is to study how Canada's courts have referred to AI. Decisions from all levels of both provincial and federal courts are used as the data source for this study. We classify legal interpretation by the courts regarding AI and aim to use this analysis to make suggestions for legal information management professionals to enhance their future collection and reference services that be in line with the emerging information needs of their users concerning the rule of law and AI. This research was conducted between spring 2019 until fall 2019 of the academic year. The authors had regular online meetings and email exchanges to discuss data sources and data interpretation. We searched Canada's court cases from three primary law databases used in Canadian jurisdictions: CanLII, Lexis Advance Quicklaw, and WestlawNext Canada. We performed full-text search for cases and decisions within the content search category of those three databases on the same day, April 30, 2019, using the same search query with quotation marks—"artificial intelligence"—to specify to search as a phrase. The criteria for selecting the primary retrieved cases to be included in the paper were: (1) the content has to be available in full text; (2) the cases can have been be decided and published in any year; (3) the cases must be relevant to AI. Queries in a search engine only retrieve documents that contain the search terms and the presence of a term or even a combination of terms is not a sufficient condition for the relevance of the cases. Therefore, the relevance of a case had to be evaluated by a human reviewer; (4) the case must have been written in English. Furthermore, we are aware that the query term "artificial intelligence" might not be sufficient to capture all cases that were related to AI, since there are sub-specialties of AI, such as "deep learning" or "natural language processing" which could occur without mention of "artificial intelligence". However, we note that for both such sub-specialties of AI, the cases in which they are mentioned also include the more general phrase "artificial intelligence".

This is a summary of the search results and the cases that met the review criteria. We found 27 cases in CanLII, 21 cases in Lexis Advance Quicklaw, and 32 cases in WestlawNext Canada. If the searches on CanLII, Lexis Advance Quicklaw, and WestlawNext Canada produced duplicate results, only one occurrence of the document was counted. After completing a review of all the retrieved cases, there proved to be 5 cases addressing to our research question, "How is AI referred to in the Canada's court cases?" The excluded cases mostly had plaintiffs, defendants, or external experts who held a degree in computer science with a specialization in artificial intelligence. Other irrelevant cases were involved in legal disputes related to mental health, family law, personal income tax, employment law and immigration law which do not match the research question of this paper. Examples of the excluded cases are: Raposo v. CA Canada Co., [2018]; Yang (Guardian ad litem of) v. Harry Estate, [1992]; Nifco v. Nifco, [2018]; University of Regina v. University of Regina Faculty Association, [1997].

RESULTS

RQ: How is AI referred to in the Canada's court cases?

We read all of the cases and provided a summary. The findings indicate that there are 4 legal aspects of AI's reference in Canada's court cases including: (1) legal research, Drummond v. The Cadillac Fairview Corp. Ltd [18]; (2) investment tax credits, Revelations Research Ltd. v. Minister of National Revenue [19]; (3) trademarks, Knowledge Network of the West Communications Authority v. Leppik [20] and Cognos Inc. v. Cognisys Consultants Inc.[21] and (4) access to government records, Ontario (Finance) (Re)[22], (see figure 1 below). The summary of the included AI cases is follows.
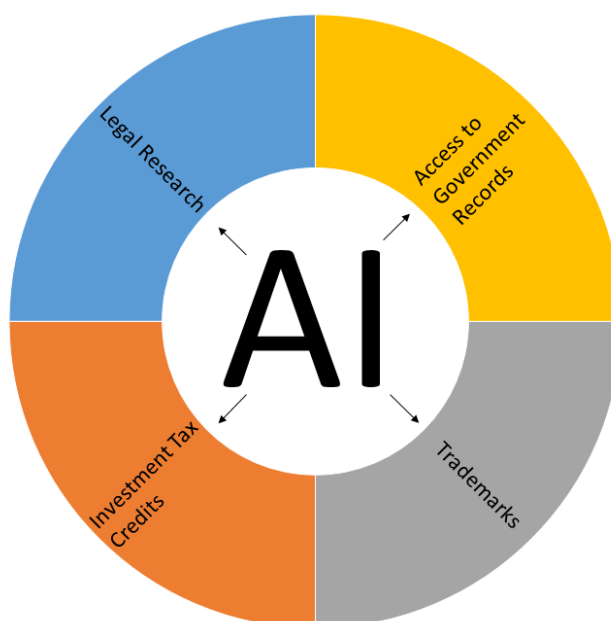

Figure 1: Legal Aspects of AI Referred in the Canada's Court Cases

Case #1: Drummond v. The Cadillac Fairview Corp. Ltd

AI will increasingly play a crucial role in assisting lawyers in their legal research and it will help to cut the time lawyers spend researching for their clients.

The plaintiff was Stephen Drummond. The defendant was Cadillac Fairview Corp. Ltd, who operate the Fairview shopping mall in the city of Toronto. This case was heard at the Ontario Superior Court of Justice. The date of the decision (court decision number 4509) was July 26th, 2018 and published in the All Canada Weekly Summaries in the volume 295, series 3 starting on

page 554. The statement of facts in this case says that on Sunday, August 23rd, 2015 the plaintiff went to the defendant's shopping mall and got injured by tripping over a skateboard that a 12-year old boy had brought with him to the mall. The plaintiff and the skateboard owner were not previously acquainted. The boy was just another normal mall customer. Mr. Drummond claimed liability and duty of care against the Cadillac Fairview Corp. Ltd. The judge supported Mr. Drummond's legal notion as the defendant failed to provide the standard of care. The mall's security guards did not patrol frequently enough and as a result a customer with a skateboard, which was referred to as a hazard item, was allowed to enter the mall. This is despite the fact that there were some skateboarding prohibited signs on the shopping mall property. In conclusion, the judge granted judgment to the plaintiff. Both parties had to settle the quantification of damages.

However, Mr. Drummond and the Cadillac Fairview Corp. Ltd were not able to settle the quantification of damages. The plaintiff's legal team returned to the court asking for the assessment of damages to be judged for Mr. Drummond on September 13th, 2018. Mr. Drummond originally requested for $21,784.14 including taxes for his legal fee for his lawyers plus disbursements of $7,127.43 for the liability action. The judge felt the claim was too high and made a reduction to award the plaintiff $18,500 for legal services while keeping the same $7,127.43 for disbursements. The defendant's lawyer tried to get a greater reduction based on the costs claimed related to the fee for the plaintiff's legal team's legal research, using the WestLaw database. The judge decided that the hours the lawyers spent on the law database should be included in the counsel fees, stating that:

> "… The reality is that computer-assisted legal research is a necessity for the contemporary practice of law and computer assisted legal research is here to stay with further advances in artificial intelligence to be anticipated and to be encouraged. Properly done, computer assisted legal research provides a more comprehensive and more accurate answer to a legal question in shorter time than the conventional research methodologies, which, however, also remain useful and valuable…"

Case #2: Revelations Research Ltd. v. Minister of National Revenue

AI research and experimental development conducted by private companies could qualify for investment tax credits or a refund if the project meets the criteria.

The appellant was Revelations Research Ltd. and the defendant was the Minister of National Revenue. The case was heard at the Tax Court of Canada. The date of the decision was December 6th, 1991 with the decision number of 89-1001 assigned by the court. The case decision was published in the Dominion Tax Cases in the volume 92 starting on page 1036. Regarding the statement of facts, the appellant claimed to perform AI research and experimental development in the 1986 tax year and asked for an investment tax refund of $15.75 million in Canadian dollars plus interest from the Minister of National Revenue under the subsection 194(2) of the Income Tax Act: Refundable tax on corporations in respect of scientific research and experimental development tax credit. The judge listened to testimony from the company president, and three external AI experts with no previous relationship with Revelations Research Ltd. The three external AI experts were: Professor Martin Snelgrove from the Department of Electrical

Engineering, University of Toronto; Dr. Donald F. Rennick, technology consultant with a Ph.D. in mechanical engineering from the University of Toronto; and Dr. Peter C. Davies from Expert Solutions of Toronto with a Ph.D. in Mathematics from the University of Toronto.

The three external AI experts provided the court with reports, giving their assessment on the plaintiff's eligibility for a tax refund. Professor Snelgrove wrote a report to the judge that the appellant's AI research projects were clearly qualified for the tax refund based on the data acquisition element of their research work, however it was difficult for Professor Snelgrove to judge other elements of the overall project. Additionally, Dr. Rennick's report referred specifically to the three criteria related to staff, the uncertainty of outcome of the research, and technological advancement. Dr. Rennick suggested to the court that Revelation Research Ltd.'s AI projects were eligible for the tax refund as scientific research and experimental development under Canada's Income Tax regulations. The last report from Dr. Davies indicated that he had found no part of appellant's AI projects to be eligible mainly due to Revelations Research Ltd.'s lack of both a systematic research plan that could be repeatable and lack of a hypothesis for their AI projects. He argued that the documents that the appellant submitted were more of a business plan. Furthermore, the appellant did not have knowledgeable and qualified team members particularly in the area of neural networks and the size of the research team was also too small for all research work that actually needed to be carry out. A part of Dr. Davies's report stated that:

> "When I looked at the overall project, I was concentrating of course on the documents from Revelations Research and I was looking in that documentation for a research plan, a systematic outline of how Revelations Research proposed to achieve these goals. The only thing in there I found that could be termed a plan of any kind was the ten-year plan overview, and that to me was not a research plan, it was a list. It had the ten years of goals, but there was no mention of how the company would achieve any of those goals. It might have served as part of a business plan, but it certainly wasn't a research plan"

From all evidence provided along with the experts' comments, the judge concluded that Revelations Research Ltd.'s AI projects did not qualify as scientific research or experimental development to be granted the investment tax refund for the tax year 1986.

Case #3: Knowledge Network of the West Communications Authority v. Leppik

The terminology of AI has become disputed in business trade-mark registration and protection under intellectual property laws.

The applicant, John Leppik, filed an application to protect and amend for his trade-mark registration of "KNOWLEDGE SYSTEMS" on May 29th, 1985. Regarding the statement of facts, his trademark was approved to be used in Canada as of March 1984. He filed a newer trademark application trying to amend his previous trademark of "KNOWLEDGE SYSTEMS" to extensively cover "consulting, research and educational services on the research, development, application and operation of computer, communications, database, information networking, expert and artificial intelligence systems."

During the same period of time, Mr. Leppik also took legal action against the company named "Knowledge Network of the West Communications Authority" and claimed that they used his trademark in their company name with the words, "KNOWLEDGE NETWORK". The case was heard at the Trademarks Opposition Board of the Canadian Intellectual Property Office. The date of the decision was on September 29th, 1989 with the application number of 542,833 assigned by the board. The case decision was published in the Canadian Patent Reporter in the volume 27, 3rd series with 92 being the first page.

In response, the Knowledge Network of the West Communications Authority submitted a statement of opposition to the Trademarks Opposition Board on May 12th, 1986. Some of their arguments were that they already registered and received an official approval to own the trademark of "KNOWLEDGE NETWORK", and their company's advertisings indicated that they provided different services than Mr. Leppik's company. The opponent focused on providing academic programs, materials, and telecommunications network services specifically to educational institutions like universities and colleges while the applicant was using his original trademark of "KNOWLEDGE SYSTEMS" to offer consulting and research development services of various computer and network systems to a broad range of clients. The trademark board chair agreed that the terms "knowledge systems" and "knowledge network" sounded similar and had similar meanings. After serious consideration of all of the evidence and arguments, the board chair ruled that Mr. Leppik's application failed to show any legal burden under the Trademark Act between his trademark, "KNOWLEDGE SYSTEMS", and the opponent's trademark of "KNOWLEDGE NETWORK". In a conclusion, Mr. Leppik's application was refused.

Case #4 Cognos Inc. v. Cognisys Consultants Inc.

AI Companies want to make sure that consumers avoid getting confused between their own company name and that of their competitors.

The applicant named Cognisys Consultants Inc., filed an application to register an additional trademark as "COGNISY & Design" on September 22nd, 1989. Later, Cognos Inc., the opponent filed a statement on August 29th, 1990. One of the grounds of opposition was that the applicant's recent trademark registration likely would cause confusion with the registered trademarks of Cognos Inc., which were COGNO and COGNOS & Design. Cognos Inc. was a big player in the computer technology market in Canada at the time and now owned by IBM. The case was heard at the Trademarks Opposition Board of the Canadian Intellectual Property Office. The date of the decision was on January 31st, 1994. The board did not assign an application or docket number for this case. The case decision also appeared in the Canadian Patent Reporter in the volume 53, 3rd series with the 552 being the first page.

At the oral hearing, the applicant Cognisys Consultants Inc., which incorporated in 1988 with a business focus on fifth-generation computer applications and AI, presented their arguments. They showed to the board chair that they did some advertising in trade magazines using the trademark, "COGNISY & Design" before officially submitting the recent trademark registration. At the end of oral hearing, the board chair made the decision that after consideration of all of the evidence the trademarks application of Cognisys Consultants Inc. could create confusion with the trademarks

of Cognos Inc, as both parties provide overlapping technology services and therefore, the Cognisys Consultants Inc's application to register an additional trademark was rejected.

Case #5 Ontario (Finance) (Re), 2017

The public has the legal right to access any government record including public servants' incoming and outgoing email correspondences that contain the term AI.

The appellant, a third party, whose name was protected for privacy reasons, submitted an appeal numbered PA17-377 to the Information and Privacy Commissioner of Ontario on December 12th, 2017 concerning his or her prior request submitted to the Cabinet Office to gain a copy of all incoming and outgoing email correspondences that contained term AI from all staff emails at the Ministry of Finance of the Government of the Province of Ontario. This request is legally permitted as stated under the Canada's Freedom of Information and Protection of Privacy Act.

Previously, the appellant submitted a request directly to the Cabinet Office on February 15th, 2017 and then again on March 6th, 2017. The appellant was informed that his or her request was being transferred to the Ministry of Finance. On May 17th, 2017, the Ministry of Finance acknowledged to the appellant that they had received the deposit of the access to government records service fees paid by the appellant. Afterward, the Ministry of Finance informed the appellant about the delay due to the large volume of email records to verify and later the appellant decided to submit a claim to the Information and Privacy Commissioner of Ontario. After consideration, the Commissioner ordered the Ministry of Finance to issue notices to the appellant by December 22nd, 2017.

DISCUSSION AND SUGGESTIONS FOR INFORMATION PROFESSIONALS

The above five cases demonstrate that there are four legal aspects to how AI has been referred to in the Canada's court cases until now: (1) Legal research, (2) Investment tax credits, (3) Trademarks, and (4) Access to government records. AI technology development attracts a lot of companies worldwide to invest to develop profitable AI products. As a result, the trademark has become a battleground in the courts among business lawyers and their clients in Canada, as the findings of this paper have shown. We expect that in the future we are going to see more and more legal cases involving AI trademark and copyright. In addtion, the case of Revelations Research Ltd. v. Minister of National Revenue [1992] have affected future tax refunds. It was considered and referred to in the following 4 subsequent cases: Promac Informatique Inc. c. R. [1997], Canalerta Technologies Inc. v. Minister of National Revenue [1992], Hadad v. Minister of National Revenue [1994], and Data Kinetics Ltd. v. R. [1998]. The case of Revelations Research Ltd. v. Minister of National Revenue [1992] has become the precedent set to decide whether a scientific experiment has been undertaken, namely that there must be systematic investigations in order to satisfy the definition of Scientific Research and Experimental Development in the Income Tax Act.

In order to take the findings reported in this paper further, to benefit readers who are information management professionals – particularly the law librarians in academic intuitions and law firms – we wish to make some suggestions related to AI law collection development and reference services. Legal information organizations should start developing special collections on AI law and should also publicise these new special collection to users both online and offline. Identifying the subtopics of AI law when seeking to acquire new books, reports, or journals could be challenging since the scope of contents is rather broad. Based on the findings from the included AI cases law in this paper, we suggest that an initial set of subtopics for AI law materials include Intellectual Property (including patents, copyright and trademarks), legal research advancement, tax, and access to information. We conducted Internet research and found that well-known legal publishers, including Edward Elgar Publishing, Cambridge University Press, and Springer, have all recently published AI books intersecting with copyright and trademark, legal research advancement, tax, and freedom to access to information. Another crucial point to add here is that the internationalized nature of the contents within the AI law books that legal information organizations plan to acquire should be taken in a consideration, as technology law is expanding in many jurisdictions, especially in Internet-related laws in business. If the organizations are already working more on the international level of AI law, AI law books should be watched for are the ones that discuss the countries who are the leaders of AI technologies, particularly China, the United States of America, the United Kingdom, Canada, Russia, Germany, Norway, Sweden, France, and India.[23]

Another practical suggestion we wish to offer legal information professionals is for developing an AI law collection is situations in which in which there are no extra funds to obtain AI law books or journals. The World Intellectual Property Organization (WIPO)[24], is an excellent online resource from which to download content at no cost. The section of their web site entitled Knowledge, contains several free intellectual property databases as well as legal, technical, and information resources. At the time of writing, the WIPO even published their public consultation process on AI and intellectual property policy (see figure 2 below). This information is extremely valuable for AI and law researchers and if libraries or information centers have this news at the service counter or website or social media accounts, then they will potentially gain a lot of attention from users thus leading to more team interactions. In the end access to up to date information on AI law can contribute to increasing the volume of reference services.
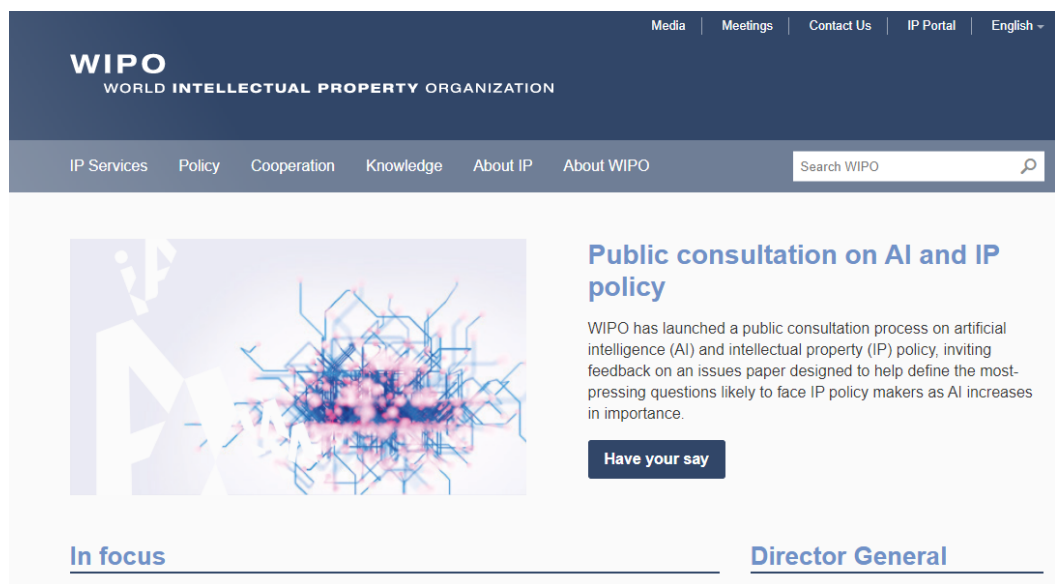
Figure 2: Public consultation on AI and IP policy at WIPO

CONCLUSION

This paper reviews Canada's court cases in various jurisdictions that referred to artificial intelligence (AI). The findings show that there are four main legal topics intersecting with artificial intelligence: (1) legal research, (2) investment tax credits, (3) trademarks, and (4) access to government records. We discussed the likelihood of a trend that Canadian courts will have to settle an increasing number of disputes in the future related to AI as a result of the financial investments that private companies are currently putting into the development of AI technology. This investment situation will lead to the commercial protection of their AI products and related intellectual property. In the last part of the paper, we have linked the included AI case laws to lessons learned for legal information professionals, how they could further develop their collections and provide reference services to fulfill the AI legal information needs of their users and organizations. We have suggested making journals, reports and books available to your users when financially possible. Additionally, have suggested in how and where to find AI law materials free of charge.

Footnotes

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