Contreras, Jorge L.

Book

Considerations regarding a Canadian patent collective

Centre for International
Governance Innovation

CIGI Papers No. 172 — May 2018

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Centre for International Governance Innovation

67 Erb Street West
Waterloo, ON, Canada N2L 6C2
www.cigionline.org

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About the Author

Jorge L. Contreras is a senior fellow in the International Law Research Program at CIGI and a professor of law at the University of Utah S. J. Quinney College of Law. His research focuses primarily on intellectual property, research policy and technical standardization. He has edited four books and has written more than 100 academic articles and book chapters, and his work has been cited by scholars, courts and governmental agencies around the world. Prior to entering academia, Jorge was a partner at a major international law firm, where he advised institutions, consortia and private firms on technology transactions, and corporate and intellectual property issues. His clients included some of the world's largest research universities and their spinoff companies. He is a graduate of Harvard Law School (J.D.) and Rice University (B.S., B.S.E.E.).

About the International Law Research Program

The International Law Research Program (ILRP) at CIGI is an integrated multidisciplinary research program that provides leading academics, government and private sector legal experts, as well as students from Canada and abroad, with the opportunity to contribute to advancements in international law.

The ILRP strives to be the world's leading international law research program, with recognized impact on how international law is brought to bear on significant global issues. The program's mission is to connect knowledge, policy and practice to build the international law framework — the globalized rule of law — to support international governance of the future. Its founding belief is that better international governance, including a strengthened international law framework, can improve the lives of people everywhere, increase prosperity, ensure global sustainability, address inequality, safeguard human rights and promote a more secure world.

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Acronyms and Abbreviations

AST	Allied Security Trust
COSIA	Canada's Oil Sands Innovation Alliance
DPL	Defensive Patent License
IP	intellectual property
LOT	License on Transfer
NCATS	National Center for the Advancement of Translational Sciences
PAEs	patent assertion entities
R&D	research and development
SMEs	small and medium-sized enterprises
SPF	sovereign patent fund

Executive Summary

In its 2018 budget, the Government of Canada pledged CDN$85.3 million over five years to support an ambitious new intellectual property (IP) strategy, including CDN$30 million for the formation of a Canadian "patent collective." This paper explores the possible structure and goals of such a collective, as well as potential risks and challenges of each. It concludes that appreciable technology development by Canadian firms is not likely to be achieved through the proposed patent collective. The paper recommends that the proposed Canadian patent collective avoid the acquisition and aggregation of patents and instead focus its limited resources on three supportive functions for Canadian industry: assisting Canadian firms, through subsidies or other resource commitments, to participate in existing international defensive patent networks; encouraging Canadian universities and research institutions to focus on commercially relevant "translational" research; and assessing the potential benefits of facilitating patent sharing or pooling arrangements in select Canadian industries, and offering administrative and infrastructural support for such efforts.

Introduction

In its 2018 budget, the Government of Canada pledged CDN$85.3 million over five years to support an ambitious new intellectual property strategy "to help Canadians better understand and protect intellectual property, and get better access to shared intellectual property."[1] Among the specific initiatives mentioned in the budget is CDN$30 million for the formation of a patent collective.[2] This proposal appears to respond to recent suggestions that Canada consider the establishment of a "sovereign patent fund" (SPF), emulating models developed in Japan, South Korea, China, Taiwan and France.[3] However, the structure and goals of these state-operated entities vary dramatically,[4] ranging from offensive patent acquisition, assertion and litigation, to industrial promotion and support within national borders. It is not clear which of these paths Canada intends to tread. While the budget promises that the minister of innovation, science and economic development will "bring forward the full details of the strategy in the coming months,"[5] the parameters of such a patent collective are still scant.

The 2018 budget defines a patent collective as "a way for firms to share, generate, and license or purchase intellectual property. The collective approach is intended to help Canadian firms ensure a global 'freedom to operate', mitigate the risk of infringing a patent, and aid in the defence of a patent infringement suit." It further explains that the collective "will work with Canada's entrepreneurs to pool patents, so that

1 Government of Canada, *Budget 2018: Equality and Growth – A Strong Middle Class* (2018) at 116 [*Budget 2018*], online: <www.budget.gc.ca/2018/home-accueil-en.html>.

2 *Ibid*. In addition to the patent collective, the 2018 budget allocates CDN$4.5 million to "the creation of an intellectual property marketplace…a one-stop, online listing of public sector-owned intellectual property available for licensing or sale." While not the principal subject of this paper, it is worth questioning the wisdom of this proposed expenditure. Numerous online patent marketplaces already exist (see e.g. IAM Market, online: <www.iam-market.com>; ideaconnection, online: <www.ideaconnection.com/patents/>; IP Marketplace, online: <www.ip-marketplace.org/search?type=patent>) and not one has achieved overwhelming success. In fact, some of the more prominent efforts in this area have failed after the expenditure of large sums. See e.g. Jorge L Contreras, "FRAND Market Failure: IPXI's Standards-Essential Patent License Exchange" (2016) 15 Chicago-Kent J Intell Prop 419. Rather than spend millions on yet another bespoke online patent marketplace, the Canadian government may wish to consider listing relevant Canadian patents with one or more existing patent marketplaces at a substantially lower cost.

3 See e.g. Warren Clarke, "A Worthwhile Intervention? The Potential Role for a Sovereign Patent Fund in Canada" CIGI, New Thinking on Innovation Essay Series, 25 April 2017; Warren Clarke & James W Hinton, *Mobilizing National Innovation Assets: Understanding the Role of Sovereign Patent Funds* (Waterloo, ON: Centre for Digital Entrepreneurship + Economic Performance, 2016); Pierre-Emmanuel Moyse, "Towards Increased Innovation: Exploring the Effectiveness of Sovereign Patent Funds in Canada" (McGill Faculty of Law, Research Seminar 1: Intellectual Property Policy in the Making, CMPL 508, 7 December 2015); Pierre-Emmanuel Moyse & M Jean-Arpad Français, "Sovereign Patent Funds: Is there a Canadian Option?" (McGill Faculty of Law, Intellectual Property Policy in the Making, CMPL 508, 7 December 2015).

4 See Clarke, *supra* note 3; Oonagh Fitzgerald, "Understanding the Promise and Peril of Sovereign Patent Funds" CIGI, Policy Brief No 102, 13 April 2017.

5 *Budget 2018*, *supra* note 1 at 116.

small and medium-sized firms have better access to the critical intellectual property they need to grow their businesses."[6] Unfortunately, these "definitions" are not definitions at all. Rather, they are broad policy goals for the proposed collective. This paper explores some possible structures for advancing these policy goals, as well as potential risks and challenges of each. This paper then asks what mechanisms the collective might adopt and how it might best be designed to help Canadian industry and entrepreneurs.

Twin Purposes for the Collective?

The budget advances two distinct but intertwined purposes for the proposed patent collective. First, there is a *developmental* purpose: to enable Canadian firms to "share" and "generate" IP, and to enable Canadian small and medium-sized enterprises (SMEs) to have better *access* to IP so that they can grow their businesses, presumably through technology development. The developmental thrust of the collective seems to imply that Canadian firms, especially SMEs, need help developing more and better IP, and that access to more patents will help them do so. Hence, the collective will seek to make more IP available to Canadian firms to enhance their own IP development efforts.

Second, the collective has a *defensive* purpose: to give Canadian firms freedom to operate, mitigate the risk of patent infringement and aid in the defence of infringement suits. Here, the assumption seems to be that giving Canadian firms access to more patents will both prevent their own infringement of those patents and enable them to use those patents in counterclaims against parties that might sue them (for example, defensively).

In assessing how a patent collective could be structured to achieve these twin goals, a few questions need to be asked: whose patents will be included in the collective, what technologies will be covered by these patents, what rights will be held by the collective and what rights will be granted to Canadian firms? Below, the author addresses each of these questions in the context of the twin goals of the proposed patent collective.

6 *Ibid.*

Developmental Use

One of the principal goals of the Canadian patent collective is to enhance the technology and IP development capabilities of Canadian firms. How would a patent collective do this? There are several possible approaches that can be considered.

Direct Commercial Usage

The most intuitive way to structure a patent collective for developmental use would be for the collective to acquire rights under patents covering technologies useful to Canadian firms and then license those rights to the firms that can make use of them. For example, if a Norwegian firm owns a patented method for conducting seismological surveys, the collective could obtain a licence to that technology on behalf of Canadian firms that could then use it to improve their own oil and gas exploration operations. In addition, Canadian oilfield equipment manufacturers could incorporate that method into their own products, thereby improving them and increasing sales both within Canada and globally. This approach can be called "direct commercial usage" of patent rights acquired by the collective.

While direct commercial usage is, at first glance, attractive, there are several reasons that it is not likely to be a practical way forward for the Canadian patent collective. First, direct commercial usage will require the collective to identify and choose patents to benefit specific Canadian industries. With an initial budget of only CDN$30 million, the number of industries will necessarily be small, at least in the beginning, thus giving the collective a preferential character that falls short of the Canada-wide aspirations laid out in the budget.[7]

7 Such a selective approach would be closer to the industrial policy approaches of Asian economies such as Japan, Taiwan and China, in which governmental agencies select key industrial sectors (for example, electronics, automotive, solar panels or semiconductors) for support and promotion.

Second, it will not be easy to find suitable patents for direct commercial usage. To the extent that foreign firms possess patents that have commercial application to the operations or products of Canadian firms, the patent-holding firms may prefer to sell their own products or services embodying the patented technology to Canadian firms, rather than enable Canadian firms to do so independently. If patent-holding firms *are* open to licensing their patents (rather than selling products or services to Canadian firms), then the licensing rates are likely to be based on commercial usage by Canadian firms. For example, in the seismology example, above, if a Canadian oilfield services company uses the patented method to generate service revenue, then the patent holder would likely charge a royalty based on that revenue. Would the collective commit to paying ongoing royalties based on revenue of particular Canadian companies? Doing so would be nothing more than an industrial subsidy, which, if the Canadian government wished to offer it, could be accomplished more directly through governmental loans, grants or tax incentives. Of course, ongoing royalty payments could be avoided if the patent collective purchased the relevant patents outright (rather than licensing them from the owners), but it seems unlikely that a foreign firm would be willing to part with valuable patents that have direct commercial application or, if it did, the price would be high (a challenge, given the patent collective's modest budget).

In sum, if commercially valuable patents are available for licensing, it is likely that Canadian firms already have the opportunity to license those patents on an individual negotiated basis. Intervention by the proposed patent collective might offer nothing more than a monetary subsidy to a limited segment of Canadian industry, a result that could probably be achieved through more direct means.

Facilitating Research and Development

A Canadian collective could also focus on the acquisition of patent rights to enable Canadian firms to conduct research and development (R&D) prior to the launch of commercial products and services. There is some evidence that the existence of patent rights may dampen R&D activity in particular fields, so the collective could serve a useful function by removing barriers to Canadian R&D.

This approach is attractive for several reasons. First, it is likely that obtaining research rights under existing patents would be less expensive than obtaining rights for commercial exploitation. Second, R&D conducted in Canada would primarily implicate Canadian patents, as opposed to patents across the globe (as the sale of commercial products would). Again, this suggests that obtaining a Canadian R&D licence would be more affordable for the collective than obtaining commercial exploitation rights. This being said, it is not clear that the acquisition of Canadian R&D rights from the holders of Canadian patents would add much value to the existing R&D enterprise. Unlike the United States, Canada's patent law recognizes a strong "research exemption" that permits experimentation and development using patented technologies.[8] Thus, acquiring these rights in Canada may not add much beyond what is already permitted under Canadian law.

Technology Transfer

Another oft-repeated benefit of patent collective arrangements is their potential to facilitate the beneficial transfer of technology to a target country. In theory, this transfer can occur through technical education and training, capacity building and increased availability of technology tools within the country. This rationale, however, has the most salience in the context of developing countries that lack advanced technology resources. It is not particularly compelling for an advanced nation such as Canada, which already has a sophisticated technology infrastructure, a pre-eminent educational system and an abundance of technology firms. It is, thus, unlikely that technology transfer, as it is generally understood, would be a meaningful outcome of the proposed patent collective.

Patent Sharing

In addition to seeking to promote Canadian firms' generation of IP, the 2018 budget states that the proposed patent collective should also promote the "sharing" of IP by Canadian firms. This goal is somewhat different than those discussed above. It suggests a structure whereby Canadian firms might combine their

8 See e.g. *Merck & Co v Apotex Inc*, 2006 FC 524; *Micro Chemicals Limited et al v Smith Kline & French Inter-American Corporation*, [1972] SCR 506, 1971 CanLII 180 (SCC).

own patent holdings for mutual benefit, rather than one in which foreign patents are amassed.

The idea of a Canadian patent-sharing network is intriguing. One model for such a structure may be Canada's Oil Sands Innovation Alliance (COSIA), which was formed in 2012 to offer a platform for Canadian firms to share information and technology relating to oil sands exploitation.[9] As of this writing, COSIA reports that its 10 member companies have shared 936 distinct technologies,[10] although the parameters of that sharing are not disclosed. The author suspects that the sharing effected through COSIA involves some preliminary information exchange regarding technologies of interest, rather than the formal conveyance of rights in commercially valuable technologies. If so, the principal value added by the collaborative would simply be making available an organized forum for industry participants to convene and discuss future business collaboration: valuable but probably not transformative, and of the greatest benefit in industries already having a critical mass of Canadian participants (for example, resource extraction and petrochemicals, rather than outward-bound technology product markets).

Even so, there is something to be said for facilitating interaction, cooperation and technology sharing among market participants. If Canada does decide to create a platform for these activities, it would be well-advised to incorporate metrics by which the utilization and performance of such a platform can be measured. For example, how often the platform is utilized and by what types of entities, how much technology is shared and what are the tangible results of the cooperation? Research has shown that patent-sharing platforms that lack meaningful indicators of success can fail when they cannot demonstrate their value to the market or their participants.[11]

An even greater degree of technology sharing could be achieved through patent pools, in which competitors combine their patent holdings in order to eliminate blocking positions and more efficiently license their collective rights to the industry.[12] To avoid antitrust and competition law concerns, patent pools are generally structured narrowly to include only complementary technologies and to exclude technologies that may act as substitutes for each other. Thus, at least under current legal requirements, industry-wide (not to mention economy-wide) patent pools are rare.

This being said, a Canadian patent collective would not need to operate a trans-industrial patent pool. Rather, such an organization could facilitate the formation of patent pools within specific Canadian industries and then act as an impartial administrator of such pools, much as the MPEG LA and Via Licensing organizations do.[13] However, this approach begs the question whether there are enough Canadian patent holders in any given industry to form a pool that will have realistic prospects for licensing or that will materially benefit firms wishing to enter the industry. For example, if the Canadian patent collective assembles patents from three Canadian geophysical firms, is this enough to enable a new SME to enter the field, or will the SME still require technology and rights from other (non-Canadian) firms that do not participate in the collective? Another question is whether Canadian firms will themselves be inclined to cooperate with their closest geographical competitors in this manner, when they have not previously been motivated to do so. The likely answers to these questions suggest that, while a Canadian patent collective may offer some benefits to Canadian firms by facilitating the formation and management of patent pools, this approach is unlikely to result in significant competitive gains for Canadian firms across the board. Nevertheless, given the relatively modest cost of such facilitation and its potential to help at least a few Canadian industries, this activity may be worth exploring in more detail.

9 See COSIA, "About COSIA", online, <www.cosia.ca/about-cosia>; Bassem Awad, "Global Patent Pledges: A Collaborative Mechanism for Climate Change Technology" CIGI, CIGI Papers No 81, 27 November 2015 at 7.

10 COSIA, *supra* note 9.

11 See Jorge L Contreras, Bronwyn H Hall & Christian Helmers, *Assessing the Effectiveness of the Eco-Patent Commons: A Post-mortem Analysis*, CIGI, CIGI Papers No 161, 20 February 2018 at 17, online: <www.cigionline.org/publications/assessing-effectiveness-eco-patent-commons-post-mortem-analysis>.

12 See Richard J Gilbert, "Collective Rights Organizations: A Guide to Benefits, Costs and Antitrust Safeguards" in Jorge L Contreras, ed, *Cambridge Handbook of Technical Standardization Law: Competition, Antitrust, and Patents* (Cambridge, UK: Cambridge University Press, 2017) ch 8.

13 MPEG LA is a firm based in Denver, Colorado, that acts as the licensing agent for several patent pools, covering audio-video compression and other standardized technology formats, including the popular MP3 and MP4 file formats. See MPEG LA, online: <www.mpegla.com>. Via Licensing acts as the licensing agent for Wi-Fi, 3G and other communications and computing standards. See Via Licensing, online: <www.via-corp.com/us/en/index.html>.

Are Universities the Answer?

It has been suggested that Canadian universities may be a viable source of patents for commercialization through a vehicle such as the patent collective.[14] Canadian universities and teaching hospitals spend more than CDN$12 billion annually in R&D, ranking Canada eighth out of 16 peer countries in terms of public R&D investment.[15] But despite these impressive outlays, commercializing university technology is difficult and fraught with uncertainty, not only in Canada but around the world. According to one recent report, only 11 percent of the 220 US university technology licensing offices turn a profit, and even technology juggernauts such as Stanford University strike gold only rarely (of 10,000 invention disclosures made at Stanford between 1970 and 2015, only 77 generated more than US$1 million in revenue, and only three generated more than US$100 million).[16] There are several explanations for these low figures, including the relatively early stage of most university research, the uncertainty of its commercial potential and the lack of industrial champions behind it. While there is undoubtedly valuable commercial technology residing within Canada's pre-eminent research institutions, it is unclear how the proposed patent collective would unlock the potential of that technology in a manner that is more effective than the technology licensing efforts that already exist at these institutions. Would an omnibus governmental agency be better at getting Canadian academic discoveries into the stream of commerce than the universities that developed the technology? It is hard to see how this could be the case. For Canadian (and other) firms that wish to commercialize the technology developed by Canadian research institutions, clear pathways for doing so already exist at no additional cost to the government.

If Canada wishes to support the flow of technology from Canadian universities to the private sector, then it may instead wish to explore the funding of more practical and industry-focused "translational science" research.[17] If socially useful and commercially attractive technology emerges from Canadian research institutions, then its odds of being adopted in commerce could be reasonable. Thus, a focus on encouraging the development of innovative new technologies in the academic sector seems preferable to the expenditure of funds on the acquisition of Canadian academic patents that have not previously attracted the attention of commercial actors.

Defensive Use

Patent litigation, particularly the need to defend against patent suits brought by financially motivated patent assertion entities (PAEs), has been identified as a significant business risk in key technology-focused industries.[18] Thus, in addition to the developmental goals of the proposed Canadian patent collective, the 2018 budget describes a series of defensive features that the collective may offer Canadian firms: freedom to operate, infringement risk mitigation and assistance in defending against infringement claims.[19] These goals aim to address two related risks faced by firms in Canada: their operations in Canada may infringe Canadian patents held by foreign third parties, and the products and services that they offer outside Canada may infringe third-party patents in the countries of sale or use. By acquiring patents that might otherwise be asserted, or the right to operate under them, the collective could, in theory, immunize Canadian firms from some of these risks. Today, there are two basic structures in place for the collective defensive use of patents: defensive aggregation and voluntary pledge communities.

14 Karima Bawa, "After Failing to Commercialize, Universities Learn to Set Ideas Free" CIGI, New Thinking on Innovation Essay Series, 25 April 2017 at 73, 76.

15 Conference Board of Canada, "Patents", online: <www.conferenceboard.ca/hcp/provincial/innovation/patents.aspx>.

16 Dave Merrill, Blacki Migliozzi & Susan Decker, "Billions at Stake in University Patent Fights", *Bloomberg* (24 May 2016), online: <http://jyelaw.com/wp-content/uploads/2017/03/UniveristyPatents.pdf>.

17 For example, in 2011, the US National Institutes of Health formed the National Center for the Advancement of Translational Sciences (NCATS), an institute-level centre devoted to conducting and funding translational research in the biomedical sciences with an initial budget of approximately US$600 million. See NCATS, "Past Budgets", online: <https://ncats.nih.gov/about/center/budget/past>. The author served as one of the inaugural advisory committee members of NCATS.

18 See e.g. European Commisison, *JRC Science for Policy Report: Patent Assertion Entities in Europe* (Luxembourg: Publications Office of the European Union, 2016); Executive Office of the President, *Patent Assertion and U.S. Innovation* (2013).

19 *Budget 2018*, *supra* note 1 at 116.

Defensive Aggregation

One collective strategy for the defensive use of patents involves the aggregation of numerous patents into a single member-based entity, which then provides its members the right to operate under those patents. This is the model adopted by RPX Corporation, established in 2008,[20] and Allied Security Trust (AST), established in 2007.[21] Although their business models differ (RPX is a for-profit, publicly traded company; AST is a non-profit cooperative), both of these entities approach patent aggregation in a similar manner.[22] RPX explains that "we remove patents — pre-litigation and out of active litigation — before they can become a costly problem for our clients."[23] The company claims that it has acquired more than 23,000 patents and associated rights since its inception and has more than 330 members.[24] AST claims that it has provided its 30 global members with a measure of safety under approximately 2,500 patents and associated rights, which are offered in industry-specific categories (for example, mobile, media and internet, advertising and so forth).[25] Both RPX and AST charge their members annual fees: RPX's have been reported (as of 2014) to range from US$85,000 to $7 million,[26] and AST's range from US$25,000 to $200,000[27] (both based on members' annual revenue). RPX reports that it has spent more than US$1.1 billion on the acquisition of patent rights through the end of 2017.[28]

There is a strong argument to be made for the defensive benefits of targeted patent aggregation. Canadian firms could certainly benefit from licences to patents that might otherwise be asserted against them in litigation. It is questionable, however, whether it is necessary for Canada to embark on the creation of a new defensive patent aggregation vehicle when groups such as RPX and AST each have a decade or more of experience in this complex business. Moreover, with a "war chest" of only CDN$30 million, such an aggregator would only be able to acquire a small set of rights compared to an entity such as RPX. It is possible that a Canadian defensive aggregator could focus primarily on acquiring Canadian patent rights, which would presumably be available at a lower price than the global rights generally acquired by RPX and AST. But, as noted above, Canadian patents are less than half of the story for Canadian firms that seek to offer their products and services outside Canada. These firms require freedom to operate across all major markets, not only in Canada. Finally, it is not even clear that established defensive aggregators such as RPX will continue to enjoy financial success, given patent litigation trends in the United States and elsewhere, making the establishment of a new aggregator particularly risky from a financial standpoint.[29]

For all of these reasons, the creation of a new Canadian-focused defensive patent aggregator at this time seems inadvisable. Instead, the Canadian government may wish to consider allocating some of the funds earmarked for its patent collective to enable Canadian firms, SMEs in particular, to join existing defensive aggregators such as RPX and AST. If the Canadian government helped to offset Canadian firms' membership fees in these existing organizations, it would enable them to benefit from substantial defensive portfolios that are already available, rather than venturing into difficult and risky waters with a new Canadian aggregation effort.

Defensive Pledge Communities

In addition to the entity-based patent aggregators discussed above, a number of less formal contract-based defensive patent networks have arisen over the past few years. These rely on collective promises or "pledges" made by like-minded firms in a more or less coordinated manner.[30] The most notable of these are the Defensive Patent License (DPL)

20 RPX Corporation, "The RPX Network", online: <www.rpxcorp.com/rpx-network/>.

21 AST, "About Us", online: <www.ast.com/about-us/asts-mission/>.

22 See generally Andrei Hagiu & David B Yoffie, *The New Patent Intermediaries: Platforms, Defensive Aggregators, and Super-Aggregators*, (2013) 27:1 J Econ Perspectives 45 at 56–58.

23 RPX Corporation, *supra* note 20.

24 *Ibid.*

25 See Malathi Nayak, "Google, Ford, Others Complete Defensive Patent Group Buy", *Bloomberg Law* (6 February 2018), online: <www.ast.com/news_article/google-ford-others-complete-defensive-patent-group-buy/>.

26 Ryan Davis, "Buying Patents to Thwart 'Trolls' is a Tricky Strategy", *Law360* (3 November 2014).

27 AST, "The AST Membership Advantage", online: <www.ast.com/about-us/be-a-member/>.

28 RPX Corporation, *Annual Report on Form 10-K for the Fiscal Year ended December 31, 2017* at 7.

29 See e.g. Dan Caplinger, "Falling Income, Revenue Plague RPX", *Motley Fool* (31 October 2017), online: <www.fool.com/investing/2017/10/31/falling-income-revenue-plague-rpx.aspx>.

30 See generally Jorge L Contreras, "Patent Pledges" (2015) 47:3 Ariz St LJ 543 at 567–68.

and Google's License on Transfer (LOT) Network, both of which were launched in 2014 and focus on the software and high-tech sectors. Each of these networks seeks to discourage participants from transferring patents to PAEs. Under the DPL, a participant pledges not to assert its patents against any other DPL participant except defensively (for example, in response to a patent infringement suit by the other party). Under the LOT agreement, each participant agrees that if it transfers a patent to a PAE, then every other participant will receive a royalty-free licence to that patent. Joining the DPL is free; joining the LOT Network requires a modest fee of US$1,500 to $20,000. For a variety of structural reasons, the DPL has not gained significant momentum, whereas the LOT Network, as of November 2017, claimed approximately 180 members and 180,000 pledged patents.[31]

Defensive patent pledge communities are low-cost mechanisms for coordinating responses to common problems such as the proliferation of PAE litigation. The DPL and LOT mechanisms described above are open to firms around the world. While the government's desire to provide Canadian firms with protection against unwarranted patent litigation is admirable, it is not clear that additional pledge mechanisms are necessary beyond those already in place through programs such as the DPL and LOT. A new Canada-specific network could potentially address industry sectors that are not currently addressed by these existing networks, yet the industries represented by these networks are clearly those most affected by excess patent litigation. Thus, unless there is evidence that Canadian industry, outside of high technology, suffers from an excess of patent lawsuits, investing significant resources in the duplication of existing pledge structures would seem to be a poor use of funds that is not likely to offer meaningful additional benefits to Canadian firms.

Patent Defence Costs

A final defensive patent mechanism does not involve the aggregation of patents or patent rights at all but is purely financial in nature. It is a defensive cost indemnity arrangement: a program whereby the Canadian government could set aside funds to defray the costs incurred by Canadian firms in defending against patent infringement litigation, either within or outside Canada. As such, the program could operate like liability insurance: assuming the cost of defending (and settling) claims within the scope of coverage (in this case, patent infringement). Establishing such a program may have intuitive appeal: by stepping in to help Canadian SMEs defend against frivolous patent suits, it could neutralize the harmful effects of PAE litigation on Canadian industry and innovation.

Despite its initial appeal, however, such a program has significant — and probably fatal — problems. First, it would be difficult to assess which patent suits such a program should defend. Would it apply only to suits brought by PAEs? Would some suits by practising/competitive entities also be covered? If so, how would these two categories of patent holders be differentiated? Second, as is well-documented in the insurance literature, the ready availability of insurance creates a moral hazard: the insured will act in a riskier manner if they know they will not be directly responsible for the costs of their actions. Would the availability of patent infringement "insurance" encourage Canadian firms to infringe more patents, perhaps in lieu of entering into legitimate licence agreements? And if the fund covers not only litigation costs, but damages and settlement amounts as well, then the fund would simply be making a pricey commercial subsidy to infringing firms. Third, if an insurance fund covered settlement amounts in addition to litigation costs, the very existence of the fund could make Canadian firms more likely targets of infringement claims. That is, a PAE seeking quick, but sizeable, infringement settlements could be incentivized to target Canadian SMEs as sources of settlement funds (unlike SMEs in other countries, which might lack the funds to pay out significant settlement amounts).[32]

31 LOT Network, "The LOT Network Community", online: <http://lotnet.com/our-community/#member-list>. For a recent comparison of the DPL and LOT structures and features, see Jorge L Contreras, "The Evolving Patent Pledge Landscape" CIGI, CIGI Papers No 166, 3 April 2018.

32 The emergence of medical malpractice insurance in the United States gave rise to similar trends. While it would generally not be profitable to sue independent medical practitioners, suing well-insured hospitals and medical groups became a cottage industry in many US states, resulting in a medical malpractice "crisis" in the 1980s. See e.g. David L Nye et al, "The Causes of the Medical Malpractice Crisis: An Analysis of Claims Data and Insurance Company Finances" (1988) 76 Georgetown LJ 1495.

Offensive Use

Unstated in the budget is a third potential use for the proposed Canadian patent collective: patent enforcement as a revenue generation tool. This approach has been taken by some of the foreign SPFs on which Canada's collective might be based. Japan's IP Bridge and France Brevets, for example, acquired portfolios of patents and now enforce them around the world. These SPFs raise revenue ("monetize" their patents) both through licensing and litigation.[33] Such entities have been criticized as "state-funded patent trolls."[34]

Is this a direction in which Canada wishes to go? Some commentators have suggested that Canada should consider such an SPF approach,[35] but if it does, Canada should re-evaluate the amount of its commitment to this enterprise. According to Warren Clarke, most SPFs have been capitalized at levels ranging from CDN$100 to $500 million,[36] significantly above the CDN$30 million committed to the Canadian patent collective. Patent litigation is expensive,[37] as are acquisition costs of patents (to enforce a patent, ownership is generally required, which is more costly than a licence). Thus, it is not clear that, even if it so desired, the proposed CDN$30 million Canadian patent collective could operate as an effective PAE.[38] But practicalities aside, as a policy matter, it would be a mistake for Canada to facilitate the creation of yet another PAE in a world that is already rife with unproductive patent litigation. In addition to the general unpleasantness of such an approach, creating a Canadian national PAE could have significant negative repercussions among Canada's trading partners[39] and multinationals operating within Canada.

Consumer Access

Notably, the 2018 budget does not indicate that the proposed patent collective is intended to facilitate consumer access to patented technologies such as essential medications. It appears, rather, to be directed principally to commercial ends and to improving the international competitiveness of Canadian firms. Thus, the author omits any further consideration of the potential distributive and humanitarian goals of patent aggregation arrangements.

Conclusion

The Canadian government's proposed patent collective aspires to facilitate the development and sharing of IP by Canadian firms, especially SMEs, and to provide defensive measures against unwarranted patent litigation. While these ambitious goals are admirable, it is not clear that a patent collective mechanism, particularly one that is funded at the proposed level, can be effective at achieving all of these goals. The development of more and better IP by Canadian firms is unlikely to be advanced by the collection of third-party patents, except, perhaps, in a few selected industries (for example, petrochemicals) that could benefit more directly from tax incentive or subsidy programs and which are already active in global product and technology markets. Likewise, the acquisition of Canadian patents by a collective is unlikely to foster increased

33 See e.g. Clarke & Hinton, *supra* note 3 at 15–18.

34 Hosuk Lee-Makiyama & Patrick Messerlin, "Sovereign Patent Funds (SPFs): Next-generation Trade Defence?" (2014) European Centre for International Political Economy Policy Brief No 6/2014 at 1; Moyse, *supra* note 3 at 12–13.

35 See Clarke, *supra* note 3; Fitzgerald, *supra* note 4; Moyse, *supra* note 3.

36 Clarke, *supra* note 3; Fitzgerald, *supra* note 4 at 2.

37 Federal Trade Commission, *Patent Assertion Entity Activity: An FTC Study* (2016).

38 One commentator favouring the formation of a Canadian SPF points to patents generated by the bankrupt Canadian firm Nortel Networks that were acquired by a consortium of foreign firms that are now profiting from them, arguing that "[t]hese patents were created by a Canadian enterprise and are now generating profits for foreign enterprises. It is imperative that Canada starts investing to retain its patents and the profits they are capable of generating." See Moyse, *supra* note 3 at 33. However, what Moyse fails to mention is that the Rockstar consortium (Apple, RIM, Ericsson, Microsoft and Sony) acquired Nortel's patents for US$4.5 billion, a far cry from the CDN$30 million that the government has allocated to the proposed patent collective. It is also worth remembering that Canadian firm RIM (now Blackberry) was part of the acquiring group. And Blackberry itself has recently come under fire for adopting many of the characteristics of a PAE. See e.g. Devin Barrie, "Has Blackberry become a 'patent troll'? Not quite, says Ottawa researcher", *Ottawa Citizen* (13 April 2018).

39 See Moyse, *supra* note 3 ("Given the litigious and economically taxing environment created by patent trolls or PAEs in the United States, it is not unforeseeable that the U.S. government would view such funds unfavourably" at 11).

R&D activity within Canada, as Canadian firms already benefit from a generous judicially created "research exemption" from patent infringement, and Canadian universities, without a far more directive governmental R&D initiative and concomitant funding, cannot realistically be viewed as sources for a large quantity of new commercially valuable technology across the board. Likewise, from a defensive standpoint, it is unlikely that the Canadian government's aggregation of patents on behalf of Canadian firms could achieve even a fraction of the defensive benefit offered by existing defensive aggregation programs such as RPX and AST. And the creation of a formal defensive patent pledge network among Canadian firms, while potentially useful, seems to offer few benefits beyond those already available from networks such as the DPL and LOT. Finally, Canada's aggregation of patents for purely offensive litigation and monetization purposes is not recommended, as such an endeavour would not significantly help Canadian industry, could strain relations with Canada's trading partners and, given current market trends, is far from likely to achieve appreciable financial success.

Accordingly, it is the recommendation of this paper that the proposed Canadian patent collective avoid the acquisition and aggregation of patents and instead focus its limited resources on the following three supportive functions for Canadian industry: assist Canadian firms, through subsidies or other resource commitments, to participate in existing international defensive patent networks; encourage Canadian universities and research institutions to focus on commercially relevant "translational" research, and possibly to shift Canadian research funding priorities in this direction; and assess the potential benefits of facilitating patent sharing or pooling arrangements in select Canadian industries, and offering administrative and infrastructural support for such efforts. It is believed that these activities, in support of Canadian innovation and industry, would be better suited to the modest level of funding currently anticipated for the Canadian patent collective and would avoid many of the pitfalls of acquiring and accumulating patents directly. As such, the Canadian patent collective could focus on adding value where it is truly needed to achieve collective benefits for Canadian industry and technology.

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Centre for International
Governance Innovation

67 Erb Street West
Waterloo, ON, Canada N2L 6C2
www.cigionline.org