



CANADIAN INTELLECTUAL PROPERTY OFFICE'S PATENT SERVICES FINAL EVALUATION REPORT

AUDIT AND EVALUATION BRANCH
JANUARY 2017



Presented to the Performance Measurement
and Evaluation Committee on February 8, 2017

Approved by the Deputy Minister on May 29, 2017

This publication is available online at www.insertwebaddresshere.ca.

To obtain a copy of this publication or an alternate format (Braille, large print, etc.), please fill out the Publication Request Form at www.ic.gc.ca/Publication-Request or contact:

Web Services Centre
Innovation, Science and Economic Development Canada
C.D. Howe Building
235 Queen Street
Ottawa, ON K1A 0H5
Canada

Telephone (toll-free in Canada): 1-800-328-6189
Telephone (Ottawa): 613-954-5031
TTY (for hearing-impaired): 1-866-694-8389
Business hours: 8:30 a.m. to 5:00 p.m. (Eastern Time)
Email: info@ic.gc.ca

Permission to Reproduce

Except as otherwise specifically noted, the information in this publication may be reproduced, in part or in whole and by any means, without charge or further permission from Innovation, Science and Economic Development Canada (ISED), provided that due diligence is exercised in ensuring the accuracy of the information reproduced; that ISED is identified as the source institution; and that the reproduction is not represented as an official version of the information reproduced, nor as having been made in affiliation with, or with the endorsement of, ISED.

For permission to reproduce the information in this publication for commercial purposes, please fill out the Application for Crown Copyright Clearance at www.ic.gc.ca/copyright-request or contact the Web Services Centre mentioned above.

© Her Majesty the Queen in Right of Canada, as represented by the Minister of Innovation, Science and Economic Development Canada, 2017.

Cat. No. Iu4-211/2017E-PDF
ISBN 978-0-660-07960-8

Aussi offert en français sous le titre *Évaluation des services liés aux brevets de l'office de la propriété intellectuelle du Canada*.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
1.0 INTRODUCTION	3
1.1 PROGRAM CONTEXT	3
1.2 PROGRAM DESCRIPTION	3
1.3 PROGRAM DELIVERY	4
1.4 PROGRAM GOVERNANCE	4
1.5 LOGIC MODEL	5
2.0 METHODOLOGY	7
2.1 EVALUATION SCOPE AND OBJECTIVES	7
2.2 EVALUATION QUESTIONS	7
2.3 EVALUATION APPROACH	7
2.4 DATA COLLECTION METHODS	8
2.5 DATA LIMITATIONS	9
3.0 FINDINGS	10
3.1 RELEVANCE	10
3.2 PERFORMANCE	14
4.0 CONCLUSIONS AND RECOMMENDATIONS	23
4.1 CONCLUSIONS	23
4.2 RECOMMENDATIONS	24

LIST OF ACRONYMS

AEB	Audit and Evaluation Branch
CEO	Chief Executive Officer
CIPO	Canadian Intellectual Property Office
FTE	full-time equivalent
IP	intellectual property
ISED	Innovation, Science and Economic Development Canada
IT	information technology
OECD	Organisation for Economic Co-operation and Development
SMEs	small and medium-sized enterprises
U.K.	United Kingdom
U.S.	United States
WIPO	World Intellectual Property Organization

LIST OF TABLES

TABLE 1: CIPO finances

LIST OF FIGURES

- FIGURE 1: CIPO logic model
- FIGURE 2: Number of patent applications received by CIPO 2005-2015
- FIGURE 3: Number of Canadian patent applications filed outside of Canada 2005-2015
- FIGURE 4: Reduction in patent turnaround times 2011-12 to 2014-15
- FIGURE 5: Patent agent satisfaction with the time it takes to receive a patent
- FIGURE 6: Wait times from request for examination to first CIPO report by discipline

EXECUTIVE SUMMARY

PROGRAM OVERVIEW

The Canadian Intellectual Property Office (CIPO) is a Special Operating Agency of Innovation, Science and Economic Development Canada (ISED) responsible for the administration of Canada's system of intellectual property (IP). This includes the granting of patents and the registration of trademarks, copyrights and industrial designs. CIPO's mandate is to deliver high quality and timely IP products and services to customers, and to increase Canadians' awareness, knowledge, and effective use of IP. CIPO operates on a cost-recovery model based on revenue from IP applications and maintenance fees. Patenting is CIPO's largest business line, generating 79% of its revenues. CIPO's Patent Branch and Patent Appeal Board administer the patent application and granting processes.

EVALUATION PURPOSE AND METHODOLOGY

The purpose of this evaluation was to assess the relevance and performance of CIPO's patent services. The evaluation covered the period from 2010 to 2015 with emphasis on CIPO's Canadian clients. The evaluation employed nine data collection methods:

- document and literature reviews;
- interviews with key stakeholders;
- three surveys - of patent agents, CIPO's Canadian clients, and Canadian firms conducting research and development;
- an environmental scan; and
- administrative data and efficiency analyses.

FINDINGS

Relevance

There is a need for patent protection as it supports competitiveness, knowledge diffusion and market entry. In Canada, the demand for patenting declined following the 2008 economic downturn and has remained flat over the past five years. The reasons for this decline are unclear and work is underway to better understand why Canada has lagged behind other countries in the growth of patent applications.

CIPO's work in patenting supports the federal government's Innovation Agenda and ISED's strategic outcome related to creating an efficient and competitive Canadian marketplace. Patenting aligns with the roles and responsibilities of the federal government as outlined in the Canadian Constitution and the *Patent Act*. Canada must also fulfill its obligations related to the administration of patents contained in treaties and international agreements.

Performance

Canadian SMEs may not be making the best use of their IP due to low awareness of the benefits of IP and of the services CIPO provides. While CIPO has undertaken some outreach activities over the past few years, more is required. Further, its new Business Services Strategy needs to clearly identify expected results and performance metrics.

CIPO has reduced turnaround times for processing patent applications. However, patent applicants in certain market segments could benefit from further reductions in turnaround times, as well as increased awareness of expedited processing options. While CIPO has largely achieved its client service standards, those standards could better reflect client needs and recent improvements in efficiency.

There is some evidence that the quality of Canadian patents compares well with those of CIPO's international counterparts. The length of time patent holders are choosing to maintain their patents suggests that Canadian patents are valued, especially by those interested in selling or manufacturing their products in Canada. Additional performance information and further research into the macroeconomic impact of patenting on the Canadian economy would provide greater insight into the quality and value of Canadian patent rights.

CIPO clients would like to see improvements to online patent filing and the Canadian Patents Database, along with greater consistency in its examination reports. Suggestions for new services included targeted assistance to help clients decide whether to file a patent, greater outreach through business intermediaries, improved listings of patent agents, and assistance with identifying patent funding and commercialization opportunities. When implemented, CIPO's IT Modernization Program and new Business Services Strategy could address many of these issues.

CIPO is in a sound financial position and in recent years, the Patent Branch has increased productivity. Moving forward the IT Modernization Program will require significant investments to improve CIPO's client services and operational efficiency.

RECOMMENDATIONS

1. In its five-year business strategy for 2017-2022, CIPO should clearly articulate the results it expects to achieve, develop comprehensive performance measures to track progress, and report annually on those measures to allow it to assess its performance.
2. To increase Canadian innovators' awareness, understanding, and effective use of patents, CIPO should promptly move forward with improving and modernizing its existing services, as well as offering new business services to its clients
3. Following on the significant progress CIPO has made in reducing patent processing times and increasing its operating efficiency, CIPO should re-examine its patent service standards and respond to client concerns about the patent examination process.

1.0 INTRODUCTION

This report presents the results of an evaluation of the Canadian Intellectual Property Office (CIPO).

The purpose of the evaluation was to assess the relevance and performance of CIPO's patent services. The report is organized in four sections.

- Section 1.0 provides the program context and profile of CIPO and its patent services;
- Section 2.0 presents the evaluation methodology along with a discussion of the limitations to the evaluation;
- Section 3.0 presents the findings pertaining to the evaluation issues of relevance and performance; and
- Section 4.0 summarizes the evaluation conclusions and provides recommendations.

1.1 PROGRAM CONTEXT

"Intellectual property" (IP) refers to creations of the mind, such as inventions, literary and artistic works, symbols, names, images and designs used in commerce.¹ IP rights are the legal rights that identify the ownership of IP and give creators the right to exclude others from exploiting their creations for a defined period of time. By recognizing and rewarding inventions and creative works, IP rights are believed to stimulate further inventive and creative activities that, in turn, stimulate economic growth.²

While there are many valuable types of IP rights, patents are granted for products and processes that are novel, useful, and inventive. In Canada, they can cover products, machines, processes, and compositions of matter. They include new inventions, but the vast majority are for improvements to existing inventions.

For patents, Canada is known as a country of "second filing" in that the vast majority³ of those who apply for a Canadian patent have already filed a patent application in other jurisdictions with larger markets such as the United States (U.S.) or the European Union.

1.2 PROGRAM DESCRIPTION

CIPO is responsible for administering Canada's system of IP rights including the granting of patents and the registration of trademarks, copyrights and industrial designs. It became a Special Operating Agency of Innovation, Science and Economic Development Canada (ISED) in 1992. CIPO's mission is to contribute to Canada's innovation and economic success by:

- providing greater certainty in the marketplace through high-quality and timely IP rights;
- fostering and supporting invention and creativity through knowledge sharing;
- raising awareness to encourage innovators to better exploit IP;

¹ WIPO. What is intellectual property? <http://www.wipo.int/about-ip/en/>

² WIPO. Intellectual Property: A Power Tool for Economic Growth, 2003, p.3.

³ According to CIPO administrative data, between 2010 and 2014, 92% of patent applications filed in Canada had already been filed in another jurisdiction.

-
- helping business compete globally through international cooperation and the promotion of Canada's IP interests; and,
 - administering Canada's IP system and office efficiently and effectively.⁴

The *Patent Act*, its associated regulations known as *Patent Rules*, and Canadian court decisions related to patents, govern CIPO's work with respect to patents.

1.3 PROGRAM DELIVERY

CIPO's Patent Branch is responsible for the patent granting process in Canada. Within the Patent Branch, there are four divisions of patent examiners: biotechnology, general chemistry and organic chemistry, electrical and mechanical.

There are four main steps in the issuing of a patent.

1. *Filing a patent application*: An applicant submits a document describing the invention with contact information and the filing fee.
2. *Request for examination*: Within five years of the filing date an applicant must formally request that the application be reviewed and submit the examination fee.
3. *Examination of application*: At this point, CIPO determines if the application meets the requirements of the *Patent Act* and *Patent Rules*. The examiner issues an examination report which may raise questions or challenges to the application and the applicant must respond to those questions. This back and forth process will be repeated until the examiner allows or rejects the application.
4. *Grant*: A patent is issued after the examiner allows the application and the applicant pays the final fee.

If a patent application is rejected, it is reviewed at arm's length by the Patent Appeal Board, an advisory body to the Commissioner of Patents made up of senior patent examiners.

Throughout the life of a patent, patent owners pay annual maintenance fees to maintain their patent rights for up to 20 years.

1.4 PROGRAM GOVERNANCE

CIPO is led by a Chief Executive Officer (CEO) who serves as the Commissioner of Patents. CIPO's CEO reports directly to the Deputy Minister of ISED and is responsible for CIPO's performance and strategic direction.

As a Special Operating Agency, CIPO operates on a cost-recovery basis based on revenue received from applications and maintenance fees. Those fees, approved by Parliament, have remained largely unchanged since 2004. Between 2010 and 2015, CIPO posted an average annual surplus of \$7.7 million on average annual revenues of \$149 million. CIPO's accumulated

⁴ CIPO. About us, 2016. http://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/h_wr00025.html#mission

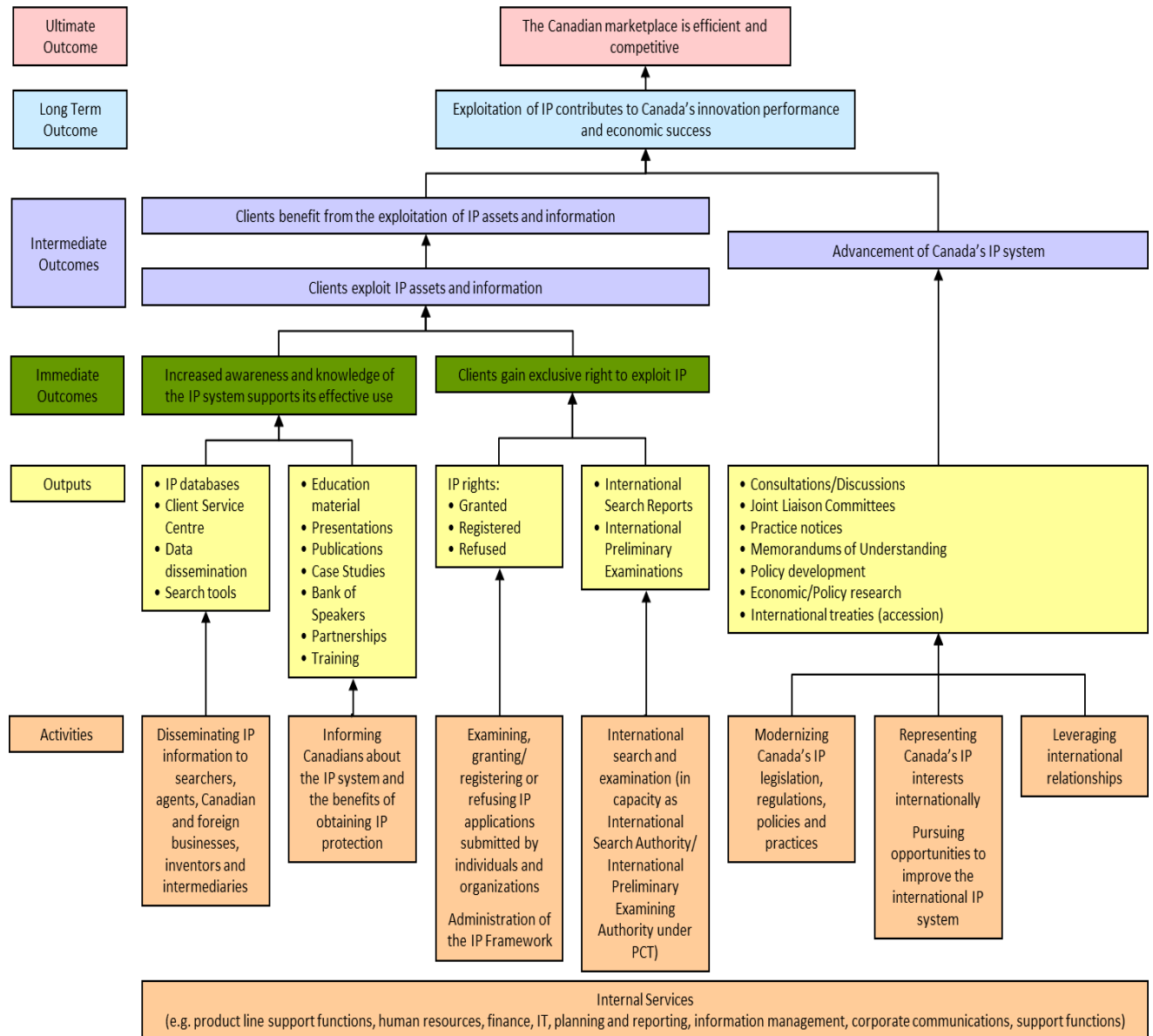
surplus has been earmarked for significant capital investments to upgrade its information technology systems.

1.5 LOGIC MODEL

The logic model in Figure 1 depicts CIPO's program theory. It shows how the program's activities are expected to lead to certain outputs and various levels of outcomes and ultimately to one of ISED's strategic outcomes.

The logic model covers all of CIPO's product lines including patents, trademarks, copyrights and industrial designs. It was developed in 2014 as part of CIPO's Performance Measurement Strategy.

**Figure 1:
CIPO Logic Model**



2.0 METHODOLOGY

2.1 EVALUATION SCOPE AND OBJECTIVES

The evaluation focussed on CIPO's largest business line, patents, with emphasis on the impacts on Canadian clients. It covers the five-year period from April 2010 to March 2015.

The objectives of the evaluation were to address the core issues of relevance and performance in accordance with the Treasury Board *Directive on the Evaluation Function* and to provide program management with additional information for decision-making.

2.2 EVALUATION QUESTIONS

Based on the program's Performance Measurement Strategy, consultations with CIPO, and research commissioned by ISED's Audit and Evaluation Branch (AEB) on assessing CIPO's intermediate outcomes, the evaluation addressed the following questions.

1. With respect to patents, to what extent does CIPO address demonstrable needs?
2. With respect to patents, to what extent does CIPO align with the priorities of the Government of Canada and the strategic outcomes of ISED?
3. With respect to patents, to what extent does CIPO align with the roles and responsibilities of the federal government?
4. To what extent are clients aware of CIPO and its patent services?
5. To what extent have clients obtained timely patent rights?
6. To what extent have clients obtained high quality patent rights?
7. What is the value of obtaining a Canadian patent in the global marketplace?
8. What other services could CIPO provide to Canadian clients to support innovation and commercialization?
9. With respect to patents, to what extent has CIPO demonstrated efficiency?

2.3 EVALUATION APPROACH

This evaluation focussed on the expected outcomes of the program as stated in the program's foundational documents and logic model. Given this was the first evaluation of CIPO, the evaluation focussed on the immediate and intermediate levels of outcomes. It used a wide variety of qualitative and quantitative research methods.

AEB managed the evaluation, developed the data collection instruments, undertook several of the data collection methods, analyzed the data and information, and wrote the evaluation report. Contractors were used for specific data collection methods namely the literature review, the environmental scan, and the conduct of surveys.

2.4 DATA COLLECTION METHODS

The multiple lines of evidence used to address the evaluation questions are described below.

Document review

The document review was conducted to gain a thorough understanding of the patent product line and to provide insights into relevance and performance. Examples of key documents reviewed include: program foundational documents, CIPO's 2014 performance measurement strategy, CIPO's annual reports, CIPO's stakeholder consultation reports, and internal audits.

Literature review

In preparation for the evaluation, AEB commissioned a review of academic literature on the role of IP offices in fostering national innovation. A further literature review was conducted to support the assessment of performance and the value of obtaining a patent in the global marketplace.

Environmental scan

An environmental scan focussed on performance. It identified the value-added services provided by IP offices in other countries to help innovators.

Interviews

A total of 54 interviews were used to gain qualitative information related to relevance and performance. Participants included the following groups of stakeholders:

- CIPO managers and patent examiners (16),
- ISED staff (2),
- researchers (5),
- representatives of Canadian and foreign companies (14),
- patent professionals (13), and
- representatives of other IP offices (4).

Surveys

Three surveys were conducted focusing on performance.

1. Survey of Canadian Clients – Applicants and Grantees

Almost all patent applications are filed by patent agents, who act on behalf of creators and inventors seeking to obtain IP rights in Canada. The survey of CIPO's Canadian applicants and grantees⁵ was conducted in spring 2016. It was administered in both official languages through a mixed-mode strategy: surveys could either be completed by phone or online. Overall 742 clients completed the survey for a 32% response rate.

2. Survey of Patent Agents

A mixed mode, bilingual survey was also conducted in spring 2016 of patent agents who assisted Canadian innovators in 2014-15. A total of 326 surveys were completed, representing 34% of those invited to participate in the survey.

⁵ Canadian filers made about 13% patent applications between 2010 and 2015. Most patent applicants are from other countries.

3. Survey of Canadian Firms that Conduct Research and Development

A third survey was conducted in January 2016 to capture the views of firms that conduct research and development in Canada but have not chosen to file a patent. In total representatives of 153 organizations participated in the survey for an 18% response rate. Given the small sample size, the results were only used to inform other lines of evidence.

Administrative data analysis

Operational and other program data collected by CIPO were used to assess performance. Specifically, the data were used to assess the timeliness of patent processes and the quality of Canadian patent rights.

Efficiency analysis

CIPO's financial, costing, and human resources data were used to assess CIPO's financial position as well as its productivity (volume of output per full-time equivalent [FTE]) and efficiency (cost per unit of output).

2.5 DATA LIMITATIONS

Incomplete performance data

While CIPO has been conducting performance measurement activities since it became a Special Operating Agency in 1992, it had only recently developed a Performance Measurement Strategy. CIPO had comprehensive performance data available to assess its efficiency and economy and the immediate outcome in its logic model related to timely delivery of patent rights. However, there was a lack of baseline data and performance information against which to measure its immediate outcome related to increased knowledge and awareness of the IP system and its intermediate outcomes.

To assess CIPO's outcomes for patents at the intermediate level, AEB commissioned and validated research that assisted in developing evaluation questions and indicators related to patent quality and patent value to serve as proxy measures for assessing those outcomes. While these provided some evidence of progress, a full assessment of whether CIPO was achieving its intermediate outcomes was not possible.

3.0 FINDINGS

3.1 RELEVANCE

3.1.1 With respect to patents, to what extent does CIPO address demonstrable needs?

Key finding: There is a need for patent protection as it supports competitiveness, knowledge diffusion and market entry. In Canada, the demand for patenting declined following the 2008 economic downturn and has remained flat over the past five years. The reasons for this decline are unclear. Work is underway to better understand why Canada has lagged behind other countries in the growth of patent applications.

This section examines the need for patent protection from two perspectives: the influence of patent protection on innovation and competitiveness; and the demand for patent protection through an analysis of the trends in patent applications.

Patent protection supports competitiveness, knowledge diffusion and market entry

Patent protection is an international norm, as almost all countries in the world have offices to assign patent rights. The patent rights granted by CIPO under Canadian law are used by both domestic and international businesses to protect their inventions in Canada. This helps Canada to compete globally and facilitates foreign investment. Canada is a net importer of IP with the vast majority (87%) of Canadian patents granted to filers from other countries.

Patent protection provides patent holders with a competitive advantage by shielding inventions from unauthorized exploitation. According to experts, the protection provided by an effective patent system allows innovators to recoup research and development costs, and make a profit that could be used to support and commercialize further innovation.^{6 7 8}

A paper commissioned by CIPO found that IP-intensive industries play an important role in the Canadian economy. In 2010, 75 IP-intensive industries accounted for 13.6% of total employment, generated 25.1% of GDP,⁹ and contributed to 40% of Canada's total exports.¹⁰ Further, the value of many Canadian firms increasingly depends on their intangible assets, such as patents.¹¹

There is also evidence that patent protection facilitates knowledge diffusion and technology transfer. The literature showed that new innovation most often results from previous research and

⁶ Canada. Parliament. House of Commons. *Intellectual Property Regime in Canada: Report of the Standing Committee on Industry, Science and Technology*. 41st Parliament, First Session, March 2013, p. 10.

⁷ Choksi, J. "The Benefits and Costs of Patent Protection". In *IEEE Canadian Review* (Summer 1999): 25-26.

⁸ Science-Metrix. *The Role of Intellectual Property Offices in Fostering National Innovation: A Review of the Literature*, 2012.

⁹ Note the paper over-estimates the GDP derived from IP-intensive industries because of the high level of aggregation in Statistics Canada data regarding the composition of GDP by North America Industry Classification.

¹⁰ CIPO. *Intellectual Property and the Canadian Economy: IP Intensive Industries and their Economic Contribution*, May 2014, p.1.

¹¹ Canada. Parliament, p. 4.

a patent application discloses an invention that might otherwise be kept secret.^{12 13 14} Research from the United Kingdom (U.K.) has shown that those firms that offer their patents to others under license help to spread the benefits of new ideas through the market and generate new funding for future research and development.¹⁵

In addition, IP protection facilitates market entry by reducing the patent holder's risk and increasing access to capital.^{16 17} A recent study from the U.S. Patent and Trademark Office found that "patent approvals help startups create jobs, grow their sales, innovate and eventually succeed".¹⁸ According to this and other studies, a patent grant increases the odds that an SME will be able access capital from external investors.¹⁹

However, there are drawbacks to the formal IP protection provided by patents. Surveys conducted by AEB for the evaluation, and stakeholder roundtables conducted by CIPO, identified long, complex, and costly procedures as potential reasons why some firms choose not to patent their inventions. Further, academic research and government reports suggested that when too much monopoly power is given to patent holders it can act as a drag on innovation.²⁰
21 22

Demand for patent protection in Canada

According to CIPO statistics, between 2005 and 2008, CIPO received approximately 41,000 applications per year from applicants in Canada and abroad. However, following the 2008 economic downturn, the overall number of patent applications fell and remained flat at about 36,000 applications a year over the past five years (see Figure 2). The number of patent applications from Canadian applicants has also been falling, declining nearly 18% between 2005 and 2015 to about 4,300 applications per year.

¹² Dosi G. "Sources, procedures, and microeconomic effects of innovation", *Journal of Economic Literature*, 1988, 26(3): 1120-1171.

¹³ Blazsek, S., & Escribano, A. "Knowledge spillovers in U.S. patents: A dynamic patent intensity model with secret common innovation factors", *Journal of Econometrics*, 2010, 159(1), 14-32.

¹⁴ Escribano, A., & Giarratana, M. S. *EU patent system: To be or not to be?* A Working Paper of the Department of Economics of the Universidad Carlos III de Madrid, February, 2011. Retrieved from <http://e-archivo.uc3m.es/bitstream/10016/10438/1/we1101.pdf>

¹⁵ UK IPO. Innovation Patenting and Licensing in the U.K.: Evidence from the SPU Survey, 2013.

¹⁶ Science-Metrix. The Role of Intellectual Property Offices in Fostering National Innovation: A Review of the Literature, 2012.

¹⁷ Cockburn, I.M. & M MacGarvie. *Patents, Thickets, and the Financing of Early-Stage Firms: Evidence from the Software Industry*, 2007. Retrieved from <http://cep.lse.ac.uk/seminarpapers/29-11-07-COC.pdf>.

¹⁸ Farre-Mensa, J et al. *The Bright Side of Patents*, Office of the Chief Economist, U.S. Patent and Trademark Office Working Paper Series, January 2016.

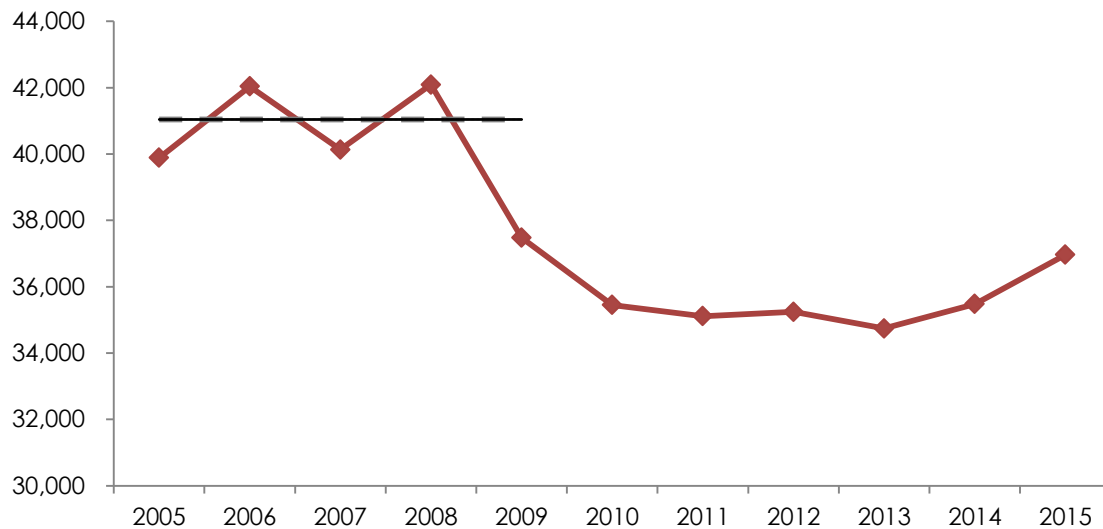
¹⁹ European Commission Trade Commissioner. *Intellectual property: Positive aspects of IP rights*. 2009. Retrieved from http://trade.ec.europa.eu/doclib/docs/2009/january/tradoc_142108.pdf

²⁰ Lerner, J. *Patent Protection and Innovation Over 150 Years*, Working Paper 8977, National Bureau of Economic Research, June 2002.

²¹ Boldrin, M. & Levine, D. "The Case Against Patents", *Journal of Economic Perspectives* 27 (1) Winter 2013.

²² Canada. Parliament, p 26.

Figure 2: Number of patent applications received by CIPO 2005-2015



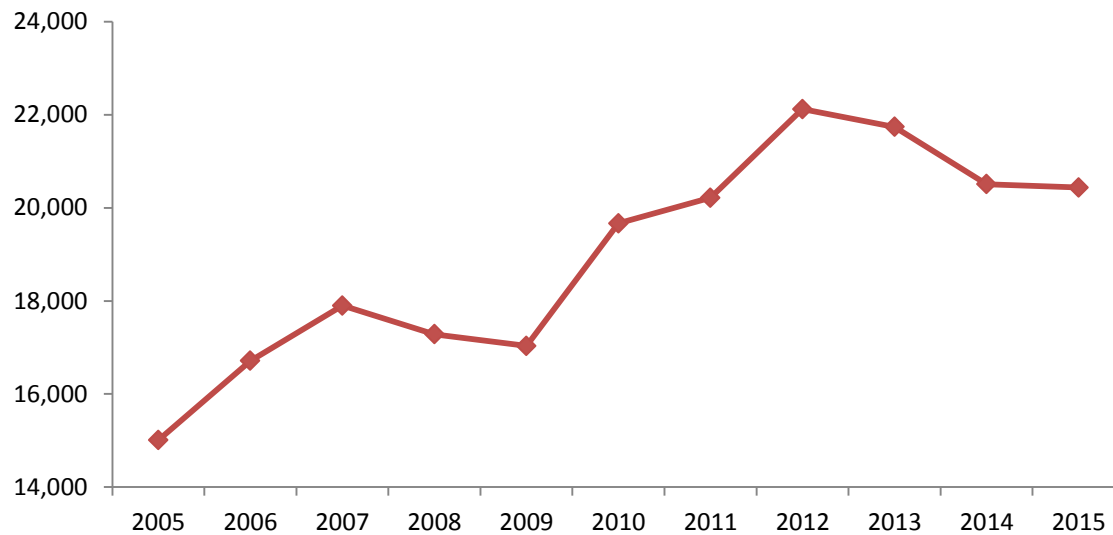
Source: WIPO statistics database

CIPO staff suggested that a more accurate reflection of demand may be the number of patent applications that move forward to examination as it comprises those applicants who specifically choose to pursue patent protection. While there was also drop in the number of requests for examination of patent applications a few years after the economic downturn, a greater proportion of applications has been moving forward to examination.²³ Further, unlike patent applications, the number of requests for examination in 2015 was greater than it was 10 years earlier.

While Canadians have filed fewer patents with CIPO over the past decade, the number of patent applications filed by Canadians internationally has increased by more than a third (36%) (see Figure 3). In 2015, Canadians filed more than 20,000 patent applications abroad, almost five times the number they filed in Canada.

²³ An applicant has five years from the date of filing a patent application to request that their patent application be reviewed. Patent applications occur at an earlier stage in the innovation cycle and may sometimes be filed as a defensive mechanism by applicants.

Figure 3: Number of Canadian patent applications filed outside of Canada 2005-2015



Source: WIPO statistics database

Clients determine the primary markets in which to seek IP protection and the reason for the decline in patent applications filed in Canada is unclear. Typically, patent filings decline during economic downturns and the firms that do file focus on larger markets, such as the U.S. and Europe. It should be noted that patent filings with CIPO have not rebounded since the 2008 economic downturn, while comparable patent offices in countries such as Australia and the U.K. have seen modest increases.²⁴ To better understand the reasons for the lack of growth in patent applications in Canada, CIPO is working with the Organisation for Economic Co-operation and Development (OECD) on a multi-year study.

3.1.2 With respect to patents, to what extent does CIPO align with the priorities of the Government of Canada and the strategic outcomes of ISED?

Key finding: CIPO's work in patenting supports the federal government's Innovation Agenda and ISED's strategic outcome related to creating an efficient and competitive Canadian marketplace.

CIPO contributes to the Government of Canada's efforts to support the creation of economic growth and jobs through innovation by administering the IP system.²⁵ More specifically, effective patent protection supports the commitment in the federal government's June 2016 *Inclusive Innovation Agenda* to foster a "creative and entrepreneurial society". In 2010, the federal Speech from the Throne highlighted the Government's intention to strengthen laws governing IP, "to encourage new ideas and protect the rights of Canadians whose research, development

²⁴ WIPO. WIPO Statistics Database. Total count of patent applications by filing office 2004-2014.

²⁵ CIPO. *Performance Measurement Strategy*, October 2014, p.5.

and artistic creativity contribute to Canada's prosperity."²⁶ Speeches from the Throne and Budget Speeches since then have consistently emphasized the Government's support for innovation, research, and development as drivers of economic growth and situated IP protection as a component of the Innovation Agenda.²⁷ Furthermore, in its 2014 Science and Technology Strategy, *Seizing Canada's Moment*, the federal government committed to help SMEs protect their IP.²⁸

CIPO's Patent Branch supports ISED's overall mission to foster a growing, competitive, knowledge-based Canadian economy. Within the Department's Program Alignment Architecture, CIPO is a sub-program under the strategic outcome: "The Canadian marketplace is efficient and competitive."

3.1.3 With respect to patents, to what extent does CIPO align with the roles and responsibilities of the federal government?

Key finding: Patenting aligns with the roles and responsibilities of the federal government as outlined in the Canadian Constitution and the *Patent Act*. Canada must also fulfill its obligations related to the administration of patents contained in treaties and international agreements.

Under the *Constitution Act*, 1867, "patents of invention and discovery" are assigned to the exclusive jurisdiction of the Parliament of Canada.²⁹ The *Patent Act* mandates that a patent office be attached to the Ministry of Industry and that Cabinet appoint a Commissioner of Patents who holds responsibility for the granting and issuing of patents in Canada. Further, Canada is a signatory to a number of treaties and agreements such as the *Patent Cooperation Treaty*, the *North American Free Trade Agreement* and the *Agreement on Trade-related Aspects of Intellectual Property Rights*. These require Canada to fulfill a number of international obligations related to the administration and enforcement of patents; obligations relating to the acquisition of patent rights are administered by CIPO.

3.2 PERFORMANCE

3.2.1 To what extent are clients aware of CIPO and its patent services?

Key finding: Canadian SMEs may not be making the best use of their IP due to low awareness of the benefits of IP and of the services CIPO provides. While CIPO has undertaken some outreach activities over the past few years, more is required. Further, its new Business Services Strategy needs to clearly identify expected results and performance metrics.

Multiple lines of evidence indicated that low levels of awareness of IP and CIPO's services are preventing Canadian SMEs and researchers from making the best use of IP. In 2013, the Parliamentary Standing Committee on Industry, Science and Technology recommended that CIPO raise awareness of IP rights and provide greater support to Canadian businesses seeking to

²⁶ Canada. *Speech from the Throne*, March 2010.

²⁷ Government of Canada. *Growing the Middle Class*, 2016, p. 110.

²⁸ Canada. *Seizing Canada's Moment: Moving Forward in Science, Technology and Innovation 2014*, p. 51.

²⁹ CIPO. *CIPO Performance Measurement Strategy*, p. 3.

protect their IP.³⁰ Specifically related to patents, the Committee recommended strengthened support and education to assist small businesses with patent filing. All Canadian stakeholder groups interviewed for this evaluation agreed with these recommendations. Some interviewees also said that Canadian SMEs and individual innovators require greater assistance than large firms that have the resources to devote to navigating the patenting process.

Over the evaluation period, CIPO undertook a number of outreach activities to raise awareness and knowledge of IP, primarily through its regional business development officers. From 2010 to 2012, CIPO targeted post-secondary institutions through IP case studies, videos, and speakers. In the following years, CIPO began focussing its efforts on SMEs through webinars, trade shows and conferences, and some training for business intermediaries. However, these outreach efforts lacked an overarching strategy and there were no consistent reporting mechanisms in place to track either the activities or their outcomes.

The available evidence regarding CIPO's progress in raising awareness about patent services comes from CIPO's online and social media activities. In 2014, CIPO launched a major revamp of its website to provide more user-friendly content. Four rounds of usability testing demonstrated users could more easily find the information they were seeking and there was a 10% increase in the number of visitors to the site in the year following the launch. Further, the promotion of CIPO through social media resulted in 6,000 followers on Twitter.

In its 2012-2017 Business Strategy, CIPO committed to identify its clients and their needs, and to undertake targeted outreach. To identify client needs, CIPO held roundtable discussions with almost 200 SMEs and 18 organizations that support technology transfer at Canadian research institutions.³¹ Using this research, in 2014 CIPO's Executive Committee approved a plan to introduce a series of new awareness and development services that would allow CIPO to reach beyond its existing client base. In 2015 CIPO's CEO approved a proposal to develop a comprehensive two-year awareness campaign. However, a lack of organizational capacity particularly within CIPO's former Information Branch delayed its implementation.

In 2016, a new Business Services Branch replaced the former Information Branch. At the time of the evaluation, this new Branch was in the process of developing a new Business Services Strategy that built on CIPO's previous work. Of note, a draft of the new Business Services Strategy reviewed for the evaluation had yet to define its expected outcomes and develop performance measures. Going forward, it will be important for CIPO to systematically collect information on the users of its website and patent database, as well as social media followers, to provide ongoing insight into the characteristics, behaviour and sentiments of its clients.

3.2.2 To what extent have clients obtained timely patent rights?

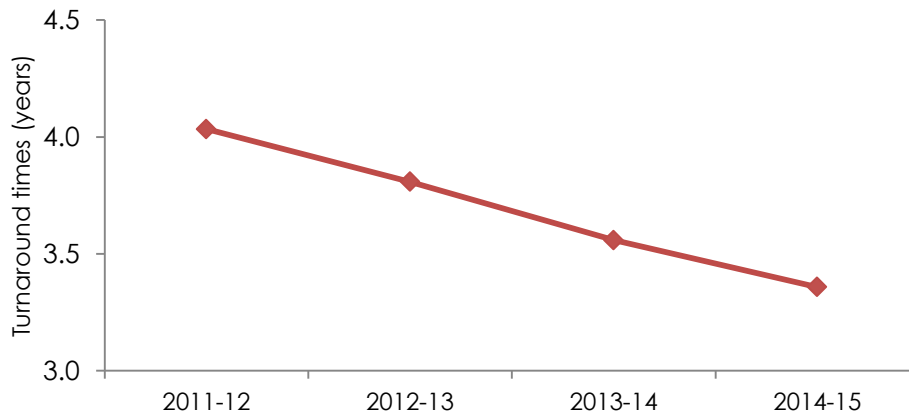
Key finding: CIPO has reduced turnaround times for processing patent applications. However, patent applicants in certain market segments could benefit from further reductions in turnaround times, as well as increased awareness of expedited processing options. While CIPO has largely met its client service standards, those standards could better reflect client needs and recent improvements in efficiency.

³⁰ Canada. Parliament. House of Commons. *Intellectual Property Regime in Canada: Report of the Standing Committee on Industry, Science and Technology*. 41st Parliament, First Session, March 2013.

³¹ These technology transfer offices guide researchers in protecting their IP and commercializing their research discoveries.

The evaluation found that CIPO has made substantive progress in reducing the time it takes to grant patent rights.³² In 2012, CIPO patent applicants waited an average of four years from the initial request for examination to a decision on the application. By 2015, CIPO cut the average time from request for examination to the grant of a patent to 3.4 years, a reduction of 17% (see Figure 4). Further, the average time from request for examination to the first report by a patent examiner (often called an office action) was reduced by 46% between 2010 and 2015. According to CIPO staff, the reduction in processing times resulted from a campaign to recruit new patent examiners which saw the number of examiners nearly triple over the past 15 years.

Figure 4: Reduction in patent turnaround times 2011-12 to 2014-15



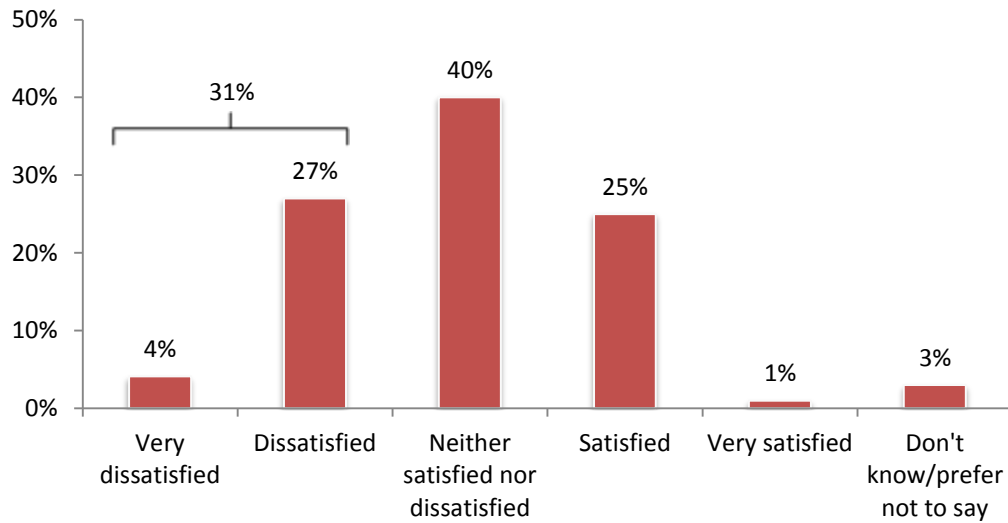
Source: CIPO Annual Report 2014-2015

According to interviews and surveys, for most patent applicants, CIPO's patent wait times were not an issue. In fact, for some sectors such as pharmaceutical, biotechnology, and chemical it may be advantageous for applicants to delay the patenting process to allow for the research and development needed to bring new products to market. However, many interviewees said that patent applicants in high-technology sectors, such as software, computing, and telecommunications would benefit from faster processing speed since these technologies have a limited shelf life and require rapid market entry. The survey of patent agents conducted for the evaluation found that 31% of agents were dissatisfied with the time it takes to receive a patent in Canada³³ (see Figure 5) and that agents representing high-technology firms were among those most likely to be dissatisfied.

³² Note: The lack of standardized measures and published data makes it difficult to compare CIPO's patent processing times with its international counterparts. In fact, WIPO suggests that the time it takes to grant a patent be compared across time at individual patent offices rather than between patent offices in different countries. Source: WIPO. 2013 World Intellectual Property Indicators, World Economics and Statistics Series, p. 89.

³³ Thirty percent of Canadian clients surveyed were also dissatisfied with the time it takes to receive a patent in Canada.

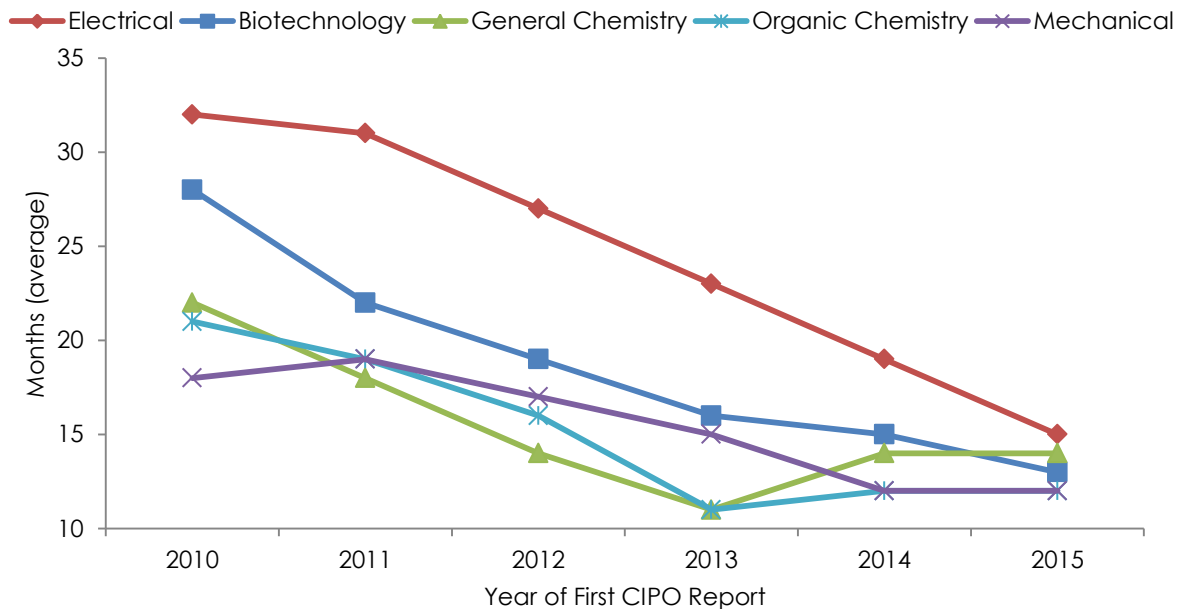
Figure 5: Patent agent satisfaction with the time it takes to receive a patent in Canada



Source: 2016 AEB Patent Agent Survey (n=326)

At CIPO, patent applications fall into different subject areas or disciplines. Since 2010, applications to the electrical discipline, which reviews many of the high-technology patent applications, had the longest wait times from request for examination to first CIPO report (office action) and the second longest wait times from request for examination to patent grant decision. On the other hand, the electrical discipline has seen the greatest reduction in wait times as the time between request for examination and first office action was cut in half from 32 months in 2010 to 15 months in 2015 (see Figure 6).

Figure 6: Wait times from request for examination to first CIPO report by discipline



Source: CIPO statistics

For clients wishing to speed up the processing of their patent applications, CIPO provides several acceleration options. However, uptake of these options has been relatively low (just 7% of applications in 2014). It must be noted that the evaluation surveys showed that while patent agents were well aware of these options, there was low awareness of expedited processing options among CIPO clients.

The evaluation also examined the extent to which CIPO was meeting its service standards. It found that since 2011-12, CIPO has met its published standards with a few exceptions. Those standards conform to most of the Treasury Board Secretariat's characteristics of good service standards.³⁴ However, it was suggested that these standards could be adjusted to better reflect client needs. Between 2013-14 and 2015-16, the Patent Branch exceeded its service standards for processing patent applications by between five and 13 months. Patent agent and client surveys also showed that for the majority of respondents some service standard wait times were much longer than they considered reasonable. For example, the average service standard for receipt of a first CIPO report following a request for examination was 17 months in 2016-17. Most respondents to the patent agent and client surveys said that a 12 month wait time would be more reasonable. This presents an opportunity for CIPO to set service standards that better reflect its ongoing commitment to improve processing times.

3.2.3 To what extent have clients obtained high quality patent rights?

Key finding: There is some evidence that the quality of Canadian patents compares well with those of CIPO's international counterparts. Additional performance information would provide further insight into the quality of Canadian patent rights.

Measurement of the quality of patent rights is an issue internationally as there are no standardized measures.³⁵ Evaluation evidence demonstrating CIPO clients are obtaining high quality patent rights is drawn mainly from CIPO's own work and a 2013 special study commissioned by Industry Canada.

Evidence from interviews and the 2013 Industry Canada study suggested that the quality of Canadian patents compares well with those of CIPO's international counterparts. For example, 95% of Canadian patents are registered in several countries as part of an international patent family. (Inventions that have been successfully patented in multiple jurisdictions are seen to be more economically valuable than inventions patented in only one country.)³⁶ Further, Canadian patents also compare well in terms of their technological scope, that is, the number of different technology areas covered by the patent. (Some analysts have suggested that patent value is related to its technological scope.)³⁷

There is also evidence that CIPO has strong quality control measures in place. According to CIPO staff, the Patent Branch conducts random quality assurance checks on 25% of its patent examination reports, and reviews 100% of the examination reports leading to the grant of a patent. CIPO also participates in an Inter-Office Quality Audit Program with the U.K. and

³⁴ Government of Canada. Guideline on Service Standards, 2012. <https://www.tbs-sct.gc.ca/pol/doc-eng.aspx?id=25750>

³⁵ *A Comparative Assessment of Patent Quality in Canada: Study Report*, Patent Policy, Marketplace Framework Policy Branch, Industry Canada, December 23, 2013, p. 6.

³⁶ *Ibid*, p. 17.

³⁷ *Ibid*, p. 51.

Australian patent offices and uses the results to identify areas for quality improvement. As with many other patent offices, CIPO is pursuing certification of its quality management system for patent services by the International Standards Organization (ISO).

Further research would enable CIPO to better measure patent quality. In particular, the 2013 Industry Canada study recommended CIPO consider collecting further performance information related to patent quality.³⁸ Gathering such information would help fulfil the recommendation of the Parliamentary Standing Committee on Industry, Science and Technology that the Government develop an evidence base to support IP policy decision-making.

3.2.4 What is the value of obtaining a Canadian patent in the global marketplace?

Key finding: The length of time patent holders are choosing to maintain their patents suggests that Canadian patents are valued, especially by those interested in selling or manufacturing their products in Canada.

There is no direct way to assess patent value.³⁹ The available evidence on the value of Canadian patents comes largely from international reports and evaluation research on why CIPO clients choose to patent in Canada. Further research is needed to assess the macro-economic impact of patenting on the Canadian economy.

One indicator of the value of Canadian patents is that patent holders are choosing to pay the annual maintenance fees (approximately \$200 per year) to maintain the validity of their patents. Statistics compiled by the World Intellectual Property Organization (WIPO) showed that in 2013 Canada had the longest average age of active patents among major patent-filing countries at 12.2 years.⁴⁰ However, the evaluation was unable to assess the extent to which Canadian patents are being commercialized, which is a common proxy for the successful exploitation of IP.⁴¹

From interviews, surveys, and program documents the evaluation did find that the value of a Canadian patent is related to the market in Canada for an invention and whether it will be manufactured in Canada. For example, some interviewees said that a Canadian patent has higher value in sectors such as oil and gas, mining, forestry, or winter products. Among patent agents surveyed for the evaluation, 62% said that the most important factor in recommending to clients to patent in Canada was adequate demand for their invention. Canadian clients surveyed most frequently reported (49%) this as the primary factor in their decision to patent in Canada.

The patent agent and client surveys also revealed the following other reasons why patent agents recommend, and clients choose, to patent in Canada.

- The cost of a Canadian patent is low;
- A Canadian patent increases the ability to obtain financing;
- A Canadian patent is part of the inventor's corporate filing strategy; and
- There is strong legal protection for IP in Canada.

³⁸ Ibid, p. 3.

³⁹ Ibid, p. 6.

⁴⁰ WIPO. *World Intellectual Property Indicators*, 2014, p. 38. While this index includes a selected number of countries, the statistics include most of the top patent filing countries.

⁴¹ Science-Metrix. *Review of Intermediate Outcomes for IP Offices: A Literature Review and International Scan*, 2014, p. 27.

The Canadian clients surveyed said that patents were valuable for licensing inventions to others (50%), bringing a product to market (50%), or selling patents to others (48%).

CIPO's efforts to harmonize its processes with other international IP offices are also making it easier, and potentially more attractive, for CIPO's clients to file in Canada in parallel with other countries. The majority of Canadian patent applications are filed by foreign applicants and most are filed under the *Patent Cooperation Treaty*.⁴² Through this treaty, inventors can file a single patent application at the same time in multiple countries. During the evaluation period, CIPO expanded its international agreements under the treaty to facilitate faster processing of patent applications. In 2014, Canada also passed legislation that will allow Canada to ratify the *Patent Law Treaty*. According to CIPO documents, this treaty will lead to the standardization and simplification of administrative requirements for filing a patent with Canada's major trading partners. Ratification of the treaty was one of the recommendations of the 2013 Parliamentary Standing Committee on Industry, Science and Technology.⁴³

3.2.5 What other services could CIPO provide to Canadian clients to support innovation and commercialization?

Key finding: CIPO's patent clients would like to see improvements in online and patent examination services, as well as new services to assist them with obtaining and commercializing their patents. CIPO has plans to address many of these issues through its IT Modernization Program and its new Business Services Strategy.

In surveys, interviews, and roundtables, CIPO clients and patent agents stated that they wanted improvements to online and patent examination services. Some patent agents suggested CIPO should focus on these existing services before it adds new services.

Existing services

Online services: Clients and patent agents would like an online application system with immediate confirmation of their filing date. At the time of the evaluation, patent applications submitted online were printed by CIPO, scanned into its database, and a filing certificate was sent out several weeks later. An e-filing system that would include more robust user services is one component of CIPO's IT Modernization Program.

CIPO clients and patent agents also wanted online access to all of the documents relating to their patent applications, similar to what is currently available from the U.S. Patent and Trademark Office and the European Patent Office. Due to recent upgrades under the IT Modernization Program, some documents were available online at the time of the evaluation and there were plans for full online access.

⁴² Seventy-six percent of applications for a Canadian patent were filed under the Patent Cooperation Treaty between 2010 and 2014.

⁴³ Canada. Parliament. House of Commons. *Intellectual Property Regime in Canada: Report of the Standing Committee on Industry, Science and Technology*. 41st Parliament, First Session, March 2013, p. 50.

The Canadian Patents Database was also a service that CIPO clients would like to be upgraded. The database publishes the details of all patents and patent applications 18 months after filing. CIPO's Canadian clients and patent agents surveyed ranked the database fifth out of six major patent databases behind the American, European, WIPO and Google databases. As part of IT modernization, upgrades were made to the database in June 2015. Interviewees reported these upgrades improved search functionality; however, further improvements are still required to bring the search function up to the level of other international patent databases.

Patent examination: Nearly a third of patent agents surveyed said there was a lack of consistency in the examination process among patent examiners. In interviews, patent agents said the content of reports differed from examiner to examiner. CIPO managers said these views likely arose from changes to modernize patent examination practices following recent court decisions, as well as CIPO's implementation of a Patent Quality Management System.

Patent agents also said they wanted fewer and more comprehensive examination reports (office actions) before a decision is made to grant a patent. Most groups interviewed said that direct communication between patent agents and patent examiners could reduce the back and forth required to reach a patent decision. At the time of the evaluation, CIPO was developing plans to pilot such a process.

New services

In interviews, surveys and roundtables, CIPO's clients also highlighted the new services that would assist them with applying for patents and commercializing their inventions.

Patent pre-application services: Interviewees and CIPO roundtable participants recommended that CIPO provide one-on-one coaching to assist SMEs to decide whether or not to file for a patent. Many other international patent offices, such as those in the U.S., U.K., Australia and Europe, provide such services. As part of its new Business Services Strategy, CIPO has plans to pilot two new services that could fulfill this request: supporting networks of pro bono IP legal clinics and a consultation service.

Outreach through partners and intermediaries: Some interviewees thought the best way to reach SMEs interested in patenting is through business intermediaries such as lawyers, banking staff, and small business development organizations. The U.K. Intellectual Property Office provides IP training to bank managers, tax consultants, and accountants who regularly interact with SMEs. CIPO has provided some IP training to front-line workers in government programs who provide advice to SMEs, including the National Research Council's Industrial Research Assistance Program, and has plans to expand those efforts.

Patent agent listings: Participants in CIPO roundtables said it was difficult to find a patent agent in their area of technical or business specialty. They wanted CIPO to update its online directory of patent agents to include agents' locations and areas of specialty.

Assistance identifying funding and commercialization opportunities: The patent agent and client surveys showed that commercializing patents and securing funding for their inventions are among the areas where Canadian inventors need the most assistance. While CIPO does not provide direct financial support to inventors, there are plans to disseminate information to clients through its website about how to commercialize IP and obtain financing.

Thus, CIPO's clients would like to see improvements in existing services and new services that would bring it in line with the best practices in other international jurisdictions. CIPO has plans to address many of these issues through its IT Modernization Program and its new Business Services Strategy.

3.2.6 With respect to patents, to what extent has CIPO demonstrated efficiency?

Key finding: CIPO is in a sound financial position. In recent years, the Patent Branch has increased productivity. Moving forward the IT Modernization Program will require significant investments to improve CIPO's client services and operational efficiency.

As indicated earlier, CIPO is entirely financed through a revolving fund, whereby revenues generated from user fees finance its operations. Between 2010 and 2015, CIPO's total revenues and costs remained fairly stable with an average annual surplus of \$7.7 million (see Table 1). Over that period the Patent Branch contributed to the surplus, generating 79% of CIPO's revenues. CIPO's surplus has been earmarked for capital investments to improve its information technology systems.

Table 1: CIPO's Finances

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	Average
Revenues	147,490,004	145,438,381	149,024,089	151,869,388	153,459,858	149,456,344
Expenses	143,169,096	139,483,322	137,520,794	144,750,798	143,945,113	141,773,825
Surplus	4,320,908	5,955,059	11,503,294	7,118,590	9,514,745	7,682,519

Source: CIPO's Annual Reports

CIPO has been planning major investments to update its aging and costly legacy IT systems for more than 10 years. Evidence from surveys, documents, and interviews suggests CIPO's IT systems have hampered the organization's ability to effectively fulfill its mandate and lowered customer satisfaction. Significant new IT investments are projected to improve CIPO's service levels and internal processes to better serve clients, as well as to meet international obligations. CIPO's capital expenditures are expected to increase significantly as its IT Modernization Program is implemented.⁴⁴

The evaluation found that CIPO's Patent Branch has made significant progress in tracking and improving its productivity. Administrative data showed that over the past three years the Patent Branch increased its overall productivity (output by FTE) by 6.3%. CIPO staff attributed the productivity gains to deployment of a quality management system for international applications, continuous review of internal processes, and the ongoing implementation of the LEAN process improvement methodology. Overall, comparative assessments found that CIPO's productivity and efficiency compared well with patent offices in the U.K. and Australia.

⁴⁴ Note: The evaluation did not assess CIPO's IT Modernization Program as it is currently subject to an audit, following a preliminary survey conducted in 2011 and a review in 2014.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

The evaluation reached the following conclusions about relevance and performance.

Relevance

- There is a need for patent protection as it supports competitiveness, knowledge diffusion and market entry. In Canada, the demand for patenting declined following the 2008 economic downturn and has remained flat over the past five years. The reasons for this decline are unclear and work is underway to better understand why Canada has lagged behind other countries in the growth of patent applications.
- CIPO's work in patenting supports the federal government's Innovation Agenda and ISED's strategic outcome related to creating an efficient and competitive Canadian marketplace.
- Patenting aligns with the roles and responsibilities of the federal government as outlined in the Canadian Constitution and the *Patent Act*. Canada must also fulfill its obligations related to the administration of patents contained in treaties and international agreements.

Performance

- Canadian SMEs may not be making the best use of their IP due to low awareness of the benefits of IP and of the services CIPO provides. While CIPO has undertaken some outreach activities over the past few years, more is required. Further, its new Business Services Strategy needs to clearly identify expected results and performance metrics.
- CIPO has reduced turnaround times for processing patent applications. However, patent applicants in certain market segments could benefit from further reductions in turnaround times, as well as increased awareness of expedited processing options. While CIPO has largely achieved its client service standards, those standards could better reflect client needs and recent improvements in efficiency.
- There is some evidence that the quality of Canadian patents compares well with those of CIPO's international counterparts. The length of time patent holders are choosing to maintain their patents suggests that Canadian patents are valued, especially by those interested in selling or manufacturing their products in Canada. Additional performance information and further research into the macroeconomic impact of patenting on the Canadian economy would provide greater insight into the quality and value of Canadian patent rights.

-
- CIPO clients would like to see improvements to online patent filing and the Canadian Patents Database, along with greater consistency in its examination reports. Suggestions for new services included targeted assistance to help clients decide whether to file a patent, greater outreach through business intermediaries, improved listings of patent agents, and assistance with identifying patent funding and commercialization opportunities. When implemented, CIPO's IT modernization and new Business Services Strategy could address many of these issues.
 - CIPO is in a sound financial position and in recent years, the Patent Branch has increased productivity. Moving forward the IT Modernization Program will require significant investments to improve CIPO's client services and operational efficiency.

4.2 RECOMMENDATIONS

1. In its five-year business strategy for 2017-2022, CIPO should clearly articulate the results it expects to achieve, develop comprehensive performance measures to track progress, and report annually on those measures to allow it to assess its performance.
2. To increase Canadian innovators' awareness, understanding, and effective use of patents, CIPO should promptly move forward with improving and modernizing its existing services, as well as offering new business services to its clients.
3. Following on the significant progress CIPO has made in reducing patent processing times and increasing its operating efficiency, CIPO should re-examine its patent service standards and respond to client concerns about the patent examination process.