



# Federal Science Expenditures and Personnel 1998/99

*Si vous préférez ce questionnaire en français, veuillez nous appeler au (613) 951-2199*

**Intellectual Property Management,  
1997/98 Fiscal Year**



## Information for respondents

### Survey Objective

This survey collects data that are essential to assure the availability of pertinent statistical information to monitor science and technology related activities in Canada and to support the development of science and technology policy. The data collected will be used by federal and provincial science policy analysts.

### Authority

This survey is conducted under the authority of the Statistics Act, Revised Statutes of Canada, 1985, Chapter S19.

### Confidentiality

Statistics Canada is prohibited from publishing any statistics that would divulge information relating to any identifiable organization without the previous written consent of that organization.

### Data Sharing Agreement

To reduce response burden and to ensure more uniform statistics, Statistics Canada has entered into an agreement under Section 12 of the Statistics Act with Industry Canada for sharing information from this survey. Under Section 12 of the Statistics Act you may refuse to share your information with Industry Canada by writing to the Chief Statistician and returning your letter of objection along with the completed questionnaire in the enclosed envelope.

I hereby authorize Statistics Canada to publish any or all portions of the data supplied on this questionnaire by this department.

1  Yes    2  No

Name	Signature
Official position	Program
Department or agency	

## Enquiries to be directed to:

Name	Date	Telephone number
Position title	E-mail address	Fax number

# 1. General Information

1.1 This survey covers intellectual property arising from S&T activities in Federal Science-Based Departments and Agencies. Please list the names of the scientific and technological establishments included in your figures.

A list of federal research facilities is provided in the handbook for reference.

Also, indicate whether or not they are engaged in intellectual property management (identification, protection, promotion or commercialization) by selecting YES or NO in the second column.

Use an additional sheet of paper, if required.

Name of establishment	Intellectual property management	
	Yes	No
	1 <input type="radio"/>	2 <input type="radio"/>
	1 <input type="radio"/>	2 <input type="radio"/>
	1 <input type="radio"/>	2 <input type="radio"/>
	1 <input type="radio"/>	2 <input type="radio"/>
	1 <input type="radio"/>	2 <input type="radio"/>
	1 <input type="radio"/>	2 <input type="radio"/>
	1 <input type="radio"/>	2 <input type="radio"/>
	1 <input type="radio"/>	2 <input type="radio"/>

1.2 In your organization, intellectual property management, (including identification, promotion or commercialization) is conducted by:

1  The individual S&T establishment

2  A corporate-level office

3  An external organization (please specify):

4  A combination of the above

a. Please note FTE's, operational expenditures and expenditures on patent applications during the reference year, for IP management for the department/agency and all S&T establishments.

Level	Number of full-time equivalents (persons)	Operational expenditures (\$ thousands)	Expenditures on patent applications (\$ thousands)
Departmental level		\$	\$
All S&T establishments		\$	\$
Other (please specify): <input style="width: 100%; height: 20px;" type="text"/>		\$	\$
<input style="width: 100%; height: 20px;" type="text"/>		\$	\$

### 1.3 Intellectual property policies

a. The Public Servants Inventions Act requires reporting of inventions and other forms of intellectual property to the appropriate Minister or designate. Are these reports normally managed at the S&T establishment level or by a central office?

	<u>Reports are managed by:</u>	
	<u>the establishment</u>	<u>the corporation</u>
Inventions	1 <input type="radio"/>	2 <input type="radio"/>
Copyrightable intellectual property Computer software or databases	1 <input type="radio"/>	2 <input type="radio"/>
Literary, artistic, dramatic or musical works, books, papers	1 <input type="radio"/>	2 <input type="radio"/>
Educational materials	1 <input type="radio"/>	2 <input type="radio"/>
Industrial designs	1 <input type="radio"/>	2 <input type="radio"/>
Trademarks	1 <input type="radio"/>	2 <input type="radio"/>
Integrated circuit topographies	1 <input type="radio"/>	2 <input type="radio"/>
New plant varieties	1 <input type="radio"/>	2 <input type="radio"/>
Other (please specify) 	1 <input type="radio"/>	2 <input type="radio"/>

b. Are there any instances in which awards are made to employees of your organization in accordance with the Treasury Board policy on awards to inventors and innovators?

1  Yes    2  No

c. What is the usual percentage of royalties awarded to inventors and innovators?

	<u>Percentage</u>	<u>Notes</u>
Inventions	%	
Copyrightable intellectual property Computer software or databases	%	
Literary, artistic, dramatic or musical works, books, papers	%	
Educational materials	%	
Industrial designs	%	
Trademarks	%	
Integrated circuit topographies	%	
New plant varieties	%	
Other (please specify) 	%	

## 1.4 Barriers to intellectual property management

Please indicate your agreement with the following statements on the barriers and challenges to IP management

	<u>Strongly disagree</u>				<u>Strongly agree</u>
<b>1. Policy</b>					
1.1 Federal laws and regulations restrict the abilities of departments to fully exploit their IP	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
1.2 Federal laws and regulations deter companies from commercializing IP developed by government	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
1.3 The poor understanding of IP and technology transfer policies leads to perceived barriers	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
1.4 There is a lack of compliance with reporting regulations (e.g., information about inventions is published before protected)	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
1.5 There is a poor linkage to commercial lending organizations and venture capitalists	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
<b>2. IP Management Resources</b>					
2.1 There is a lack of resources (monetary/personnel) to identify and manage IP	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
2.2 There is a lack of experience in identifying technologies that have a high potential for success	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
2.3 Staff involved in technology transfer require further training in IP identification, patent law, IP regulations	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
2.4 Technologies that have a potential for success are not identified sufficiently early	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
<b>3. Revenue Retention</b>					
3.1 Departments are not able to take an equity position in a company	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
3.2 Deferring payment of royalties until the technology is commercialized creates a perception that the IP has not been successful	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
3.3 Inventors and innovators are not adequately rewarded for their participation in the development and transfer of technology	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
<b>4. Receptors' Capabilities</b>					
4.1 Few Canadian SMES have both the resources and the skills necessary to commercialize technologies originating in federal labs	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
4.2 Canadian companies believe they should obtain royalty-free licenses because they pay taxes	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
4.3 There are insufficient mechanisms to help start-up companies in commercializing leading-edge technologies	1 <input type="radio"/>	2 <input type="radio"/>	3 <input type="radio"/>	4 <input type="radio"/>	5 <input type="radio"/>
<b>5. Others (please specify)</b>	<input type="text"/>				

### 1.5 S&T contracts and collaborative arrangements

S&T contracts often result in intellectual property being created in the form of inventions, computer software, databases, published papers, etc. This section requests information on the role of S&T contracts in your organization.

For the purpose of this survey,

- the term "contracts undertaken" refers to arrangements in which your organization is paid by an outside organization to conduct S&T activities.
- the term "contracts let" refers to arrangements in which your organization pays an external contractor to conduct S&T activities.
- "non-contractual collaborative" arrangements are joint S&T activities not covered by a formal contract.

a. What are your organization's policies concerning intellectual property resulting from S&T contracts undertaken? That is, who owns the rights to the intellectual property and who has the first rights to license it?

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b. What are your organization's policies concerning intellectual property arising from non-contractual collaborative arrangements?

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c. Who were the sponsors of the S&T contracts undertaken during the reference year?

<i>Research contracts undertaken with:</i>	<b>Number of research contracts</b>	<b>Value of research contracts (\$ thousands)</b>
Federal government		\$
Provincial and other levels of government		\$
Private business		\$
Non-governmental organizations		\$
Foreign companies		\$
Foreign governments		\$
International organizations		\$
Multi-stakeholder groups (e.g., consortia)		\$
Other (please specify)		\$

d. To whom did you let S&T contracts during the reference years?

*Research contracted out to:*

	Number of contracts		Value of contracts	
	Number	% of number of contracts with IP retained by department	Value (\$ thousands)	% of value of contracts with IP retained by department
Federal government		%	\$	%
Provincial and other levels of government		%	\$	%
Private business		%	\$	%
Non-governmental organizations		%	\$	%
Foreign companies		%	\$	%
Foreign governments		%	\$	%
International organizations		%	\$	%
Universities		%	\$	%
Colleges		%	\$	%
Multi-stakeholder groups (e.g., consortia)		%	\$	%
Other (please specify)		%	\$	%

e. With whom did you initiate new non-contractual collaborative research arrangements during the reference year? If possible, indicate the name of the group, your approximate commitment of resources and the approximate make-up of the group (e.g., 50% federal government, 25% university, 25% private industry).

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## 2. Identifying Intellectual Property

2.1 Indicate the number of new reports or disclosures, during the reference year, of intellectual property arising from in-house activities, contracts let and collaborative activities.

Type of intellectual property reported	Number of new reports of intellectual property arising from		
	In-house activities	Contracts	Collaborative activities
Inventions			
Copyrightable intellectual property Computer software or databases			
Literary, artistic, dramatic or musical works, books, papers			
Educational materials			
Industrial designs			
Trademarks			
Integrated circuit topographies			
New plant varieties			
Other (please specify):			

### 3. Protecting Intellectual Property

**3.1** Has the organization engaged in any of the following forms of intellectual property protection over the past 5 years?

*Indicate YES in the column provided, whether or not the action was completed. These are more fully defined in the handbook.*

	Yes	No
Filing of patent applications	1 <input type="radio"/>	2 <input type="radio"/>
Registration of copyright for computer software or databases	1 <input type="radio"/>	2 <input type="radio"/>
Registration of copyright for literary, artistic, dramatic or musical works, books, papers	1 <input type="radio"/>	2 <input type="radio"/>
Registration of copyright for educational materials	1 <input type="radio"/>	2 <input type="radio"/>
Registration of industrial designs	1 <input type="radio"/>	2 <input type="radio"/>
Protection of trademarks	1 <input type="radio"/>	2 <input type="radio"/>
Registration of integrated circuit topographies	1 <input type="radio"/>	2 <input type="radio"/>
Filing of applications for plant breeder's rights	1 <input type="radio"/>	2 <input type="radio"/>
Non-disclosure or confidentiality agreements	1 <input type="radio"/>	2 <input type="radio"/>
Other (please specify):	1 <input type="radio"/>	2 <input type="radio"/>

**3.2** *Protecting intellectual property requires effort, and often expenditures, by the organization. Not all reports of intellectual property creation detailed in Question 2.1 above require or merit further action by the organization. In some cases, the organization may not be able to afford the time or money to engage in protection.*

*During the reference year, how many protection activities were initiated? Note that this is independent of the number reported in Question 2.1 since there is often a time lag between reporting and initiating the protection activity. Furthermore, one intellectual property (such as a computer program) could be protected using several forms such as patents, copyrights, trademarks and trade secret agreements. This should not include continuations of processes initiated in previous years.*

	Number of activities
Filing of patent applications	<input type="text"/>
Registration of copyright for computer software or databases	<input type="text"/>
Registration of copyright for literary, artistic, dramatic or musical works, books, papers	<input type="text"/>
Registration of copyright for educational materials	<input type="text"/>
Registration of industrial designs	<input type="text"/>
Protection of trademarks	<input type="text"/>
Registration of integrated circuit topographies	<input type="text"/>
Filing of applications for plant breeder's rights	<input type="text"/>
Non-disclosure or confidentiality agreements	<input type="text"/>
Other (please specify):	<input type="text"/>

### 3.3 Patent applications and patents issued

During the reference year, how many patents were applied for and issued to your organization?

If possible, please report the information by the technology sector classification provided. If information is not available for some patents, report the number in the "other" category. See the handbook for a more detailed description of these sectors.

Technology sector	New patent applications in			Patents issued in:		
	Canada	US	Other	Canada	US	Other
A. Information and communications						
i) Software						
ii) Computers and related hardware						
iii) High performance communications networks (e.g. broadband, ISDN)						
iv) Media-related technologies (e.g., CD-ROM)						
B. Transportation and traffic technologies (e.g., vehicle, transmission technology, logistics)						
C. Measuring, control and steering technology, automation						
D. Medical technologies (including human health biotechnologies)						
i) Diagnostics						
ii) Therapeutics						
iii) Gene therapy						
iv) Other						
E. Biotechnologies and food technologies (excluding human health biotechnologies)						
i) Bio-informatics						
ii) Agricultural biotechnologies						
iii) Food processing						
iv) Aquaculture						
v) Mining/engineering/petroleum/chemicals						
vi) Forest products						
vii) Environment						
viii) Other biotechnologies or food processing						
F. Other technologies ( <i>please specify</i> )						

Total patents in force including patents issued during the reference year

Patents held in:		
Canada	US	Other



## 4. Exploitation of Intellectual Property by the Organization

### 4.1 Licenses

Most commercialization activities result in a license being executed with a licensee, whether this is for licensing a patented invention, computer software or a logo. In this section, please report the number of new licenses executed during the reference year and the total number of active licenses at the end of the reference year. If detailed figures are not available, please report totals in the appropriate cells.

	Exclusive and sole license (number)	Non-exclusive and multiple license (number)	TOTAL (number)
a. <b>New licenses</b> executed with <b>Canadian</b> licensees during the reference year:			
- That were sponsors of research contracts undertaken or participants in collaborative activities			
- That were contractors for contracts let			
- That were not involved in generating the intellectual property licensed			
- <b>Total</b>			
b. <b>Total active licenses</b> with <b>Canadian</b> organizations at the end of the reference year:			
- That were sponsors of research contracts undertaken or participants in collaborative activities			
- That were contractors for contracts let			
- That were not involved in generating the intellectual property licensed			
- <b>Total</b>			
c. <b>New licenses</b> executed with licensees in the <b>United States and other foreign countries</b> during the reference year			
d. <b>Total active licenses</b> with licensees in the <b>United States and other foreign countries</b> at the end of the reference year			

4.2 What were the sources of the technologies upon which the current licenses are based? The total should match the totals of row (b) and (d) above.

Technology source	Total active licenses
In-house activities	
External activities (contracts let)	
Collaborative activities	
Multiple sources	
Other (please specify) _____	

### 4.3 Royalties received

During the reference year, what was the total amount of royalties received from active licenses? Include license issue fees, running royalties, software and database end-user license fees, and any other royalties.

Total royalties received during the reference year from IP arising from:	Canadian licensees (\$ thousands)	Foreign licensees (\$ thousands)	TOTAL (\$ thousands)
In-house activities	\$	\$	\$
External activities (contracts let)	\$	\$	\$
Collaborative activities	\$	\$	\$
Multiple sources	\$	\$	\$
Other (please specify) _____	\$	\$	\$

## 5. Impacts of Intellectual Property Transfer

**5.1** New companies are often formed to commercialize technologies that are owned by public sector organizations. Spin-offs can result from several institutional arrangements:

**Licensing:** A new company is formed to license and commercialize the organization's technology (these are sometimes called start-ups)

**R&D** – A new company funds research at the organization to develop technologies that it plans to license.

**Service** – a new company is formed to provide a service that was originally offered through the organization. This also includes employee take-overs, or companies that are started by former employees on an arrangement to commercialize the technology.

List the legal names of all known spin-off companies, their year of incorporation, the company status, technology sector (refer to the technology sector classification provided for Question 3.3) and the institutional link (licensing, R&D or other).

Use additional sheets of paper, if necessary.

Legal name	Year Incorporated	Company Status (conceptual stage, early stage, active, merged, inactive, closed)	Technology sector (refer to Question 3.3)	Institutional link (licensing, R & D, service)

**5.2** Besides licensing technologies and creating new companies, what other benefits have arisen from intellectual property developed by or for your organization? This could include: royalty-free licenses, permission to use IP without licensing, non-commercial applications such as regulatory or stewardship purposes or "know how". If possible, estimate the market value of the benefit.

Contribution	Estimated value to	
	Canadian beneficiaries (\$ thousands)	US and other foreign beneficiaries (\$ thousands)

## 6. Additional questions

Your responses to the following questions will help us understand intellectual property management in your organization. Responses will be used to refine future versions of this survey.

### 6.1 Approaches to intellectual property management

a. How are intellectual property management activities most often initiated for new intellectual property?

Check one

The discoverer (researcher) reports the discovery to the organization and requests consideration for protection and/or commercialization.  1

The organization monitors the activities of the researchers and notes which discoveries should be considered for protection and/or commercialization.  2

Other (please specify)  3  
 \_\_\_\_\_  
 \_\_\_\_\_

b. What are the main approaches to developing and commercializing the organization's intellectual property? For example, patenting and licensing could be managed by the technical transfer office or alternatively by a commercialization company. *Provide the response on a separate sheet of paper, if necessary.*

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c. Please describe a typical case of intellectual property management in your organization. This description should include who took what action and at what time. *Provide your response on a separate sheet of paper, if necessary.*

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 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

6.2 Has your organization published a report on the benefits of the department's S&T activities?

1 Yes  2 No



If YES, please list the titles and/or Internet addresses of the most recent reports.

If possible, please include a hard copy with your response.

Title and/or Internet address	Organization covered	Year referenced

## 7. Respondent Feedback

7.1 We are committed to minimizing the burden placed on our respondents while obtaining quality statistics. Please answer the following questions to help us fine-tune the survey.

a. How much effort was required to complete the survey?

*person-hours*

b. In your opinion, which was the most difficult question to answer?

*question number*

c. Did you find the questions and classifications used in the survey compatible with your own accounting systems?

1  Yes

2  No → If not, please comment on how the concepts and classifications could be changed to be more compatible.

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### 7.2 Other comments

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**Thank you for your cooperation !**