

Commercialization and R&D impacts, 2006

A collaborative research project between Industry Canada and Statistics Canada

INTERVIEWER GUIDE

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Instructions to the interviewer

Screening

The respondents will have been screened to ensure they are of the correct size, industry and other relevant characteristics. Some modules are specific for technology developers, innovators, R&D performers, technology users and small R&D performers. These characteristics should be determined during screening and only the appropriate modules (to a maximum of 3) be used for a single interview. An interview should normally not be longer than an hour.

The respondent should be a senior manager of the company. The respondent should have a broad knowledge of the activities, strategies and performance of the company.

The respondent may have a copy of the “Information Sheet” e-mailed or faxed before the interview.

Symbols and notation

Text to be read or paraphrased is in regular type. Important text is in **regular bold** type.

Optional text such as prompt questions is in *italic*.

Other instructions are in **bold italic**. These also include outstanding issues about the guide itself.

Underlined words are explained in more detail in the glossary.

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Introduction

Introduce interviewer(s). Give business cards. Thank the participant.

Purpose of interview

I would now like to take a few moments to introduce the purpose of this interview. Feel free to interrupt at any point if you have any questions.

Statistics Canada, in collaboration with other government departments, is undertaking this study to better understand the factors involved in two areas. The first is commercialization, or the successful market application of new knowledge. The second is the impacts of research and development, that is, to get a better idea of how R&D is transferred to the market.

Statistics Canada may create a database by combining the information from this interview with existing Statistics Canada records containing information about your organization, such as records from the Survey of Innovation or the Research and Development in Canadian Industry Survey.

We are here to obtain your views on commercialization and the impacts of R&D.

This entire interview is designed to take about one hour. If we do not have the time to complete all the detailed questions, we would appreciate a few minutes on the last question (on “other factors”).

If you like, we can put you on a mailing list to receive any documents that are published based on these interviews.

If yes, get business card or detailed address with e-mail.

Authority

This series of interviews is performed under the authority of the Statistics Act, Revised Statutes of Canada, 1985, Chapter S19. Your participation in this interview is voluntary.

Confidentiality

We will be taking notes under the provisions of the Statistics Act. Everything you tell us will be confidential. This interview will be analyzed together with others to provide an aggregate overview. Nothing that we release will allow you or your organization to be identified.

Who should be interviewed?

A knowledgeable senior manager or CEO, familiar with the organization’s R&D and commercialization activities, would be best suited to provide the information required in this interview.

Process for participants in one-on-one interviews

Here is a quick overview of the interview process:

- The first step will be to present some background information and an overview of the project.
- We will then proceed to ask you questions regarding three broad themes:
 - A) Background information and management
 - B) Choose at least one of the two following modules: “Commercialization of R&D” and “Commercialization of innovation”.
 - C) Choose from other modules 1 to 8.
- Finally, we will ask you to suggest any critical factors that we haven’t yet discussed that relate to how you have tuned new ideas into commercial successes.

Do you have any questions before we start?

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Interview Questions

Background to the project

Statistics Canada conducts a variety of surveys on R&D, innovation and advanced technologies and has conducted other interview-based research. Through these efforts, we have gained considerable insight into the contributors to new knowledge as it applies to business, in the form of either new products or new processes. We have learned over the course of previous surveys and projects that significant inventions or successful R&D projects do not guarantee that the company, or the country, will benefit economically from them.

The purpose of this study is to gain insights into some key aspects of commercialization, that is, the market application of new knowledge. As well, we are investigating the impacts of research and development.

Company background and milestones

All respondents answer this. The interviewer may wish to ask for clarification but the background should not exceed 5 minutes.

To put the specific questions into context, could you please tell us a little about the history of the company? How did it start? Is it a spin-off of a public institution or another company? What are your products? Who are your clients? How many employees do you have? How many close competitors do you have?

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Management

All respondents answer this.

Question 1: Does your organization have a formal structure? Board of Directors? Advisory Board?

Question 2: How does your organization ensure the availability of necessary skills for business management, finance, law (intellectual property, tax), technology, etc?

Question 3: How do you attract, retain and train qualified people to help you successfully commercialize? Is this a critical issue for your business?

Question 4: Does your organization have a formal, written business plan, strategic plan, growth plan? What business strategies are used to commercialize new products and processes? [e.g. niche market, price advantage, keeping up with competitors, increasing market share]

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Module 1: Commercialization of R&D

Screening question: Have you conducted R&D within the past 5 years?

Question 1.1: Does your firm perform R&D projects occasionally or on a more systemic and on-going basis?

Question 1.2: What activities do you undertake to ensure the maximum benefits from your R&D?

Question 1.3: What obstacles have you encountered in successfully commercializing the outcomes of your R&D?

Question 1.4: Have there been occasions where the R&D did not result in a new product or a modification to a product? If there have been such occasions, what were the reasons? How would it be best to measure the proportion of your R&D effort that has not yet been embedded in a product (proportion of projects, expenditures, proportion of time, etc.)?

Question 1.5: Has your success rate or speed (in terms of R&D projects resulting in products) changed over time? If so, to what do you attribute the change?

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Module 2: Commercialization of innovation

Screening question: Have you introduced a new or significantly improved product to the market in the past 3 years? If so, please describe the innovation?

Question 2.1: What activities do you undertake to ensure the maximum benefits from your innovation after it was introduced on the market? [examples: advertising, marketing alliances, overseas distribution, etc.]

Question 2.2: What obstacles have you encountered in successfully commercializing your innovation? [e.g., clients, market acceptance, production issues, distribution issues, etc.]

Question 2.3: Which of the following strategies would you prefer to commercialize your new products or processes: in-house production, outsourcing, or licensing out IP rights? What motivates your choice?

Question 2.4: How do you fund your commercialization activities?

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Module 3: Intellectual property management

Screening question: Do you develop new technologies, produce copyrightable materials or trademarks or develop software?

Question 3.1: What intellectual properties do you produce?

Question 3.2: What means do you use to protect your intellectual properties? If you do not protect your intellectual property, what are your reasons for not doing so?

Question 3.3: How do you track disclosures of new intellectual property (usually inventions)? How many invention disclosures and patent applications has your firm filed in the past year? How many inventions and patents do you currently hold? Could you report similar figures for your primary competitors?

Question 3.4: Are you interested in licensing out your IP rights in exchange for full commercialization?

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Module 4: Pre-commercialization activities (investigation and feasibility)

Screening question: Do you perform R&D?

Question 4.1: What activities do you undertake to focus research into more marketable areas? [examples could be connecting researchers with business, partnerships, conducting needs assessments, ...]

Question 4.2: What activities do you undertake to ensure the market feasibility of products? [examples could be market research, market testing, feasibility studies]

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Module 5: Licensing in

Screening question: Do you acquire licenses to use technologies (excluding software licenses of under \$1000)?

Question 5.1: Could you easily report on the proportion of the licenses (in terms of license fees or number of licenses) that are acquired from: Canadian universities, federal government, other Canadian governments, Canadian hospitals, other businesses in the same province, other businesses in Canada, businesses in other countries, foreign governments, or institutions?

Question 5.2: How important to your business are the technologies licensed from the above sources (from not important to absolutely fundamental)?

Question 5.3: What licensing arrangements do you engage in (e.g., pay royalties, cross-licensing, others)?

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Module 6: Licensing out

Screening question: Do you license your technologies (including software licenses of over \$1000) to clients?

Question 6.1: To whom do you license: Canadian universities, federal government, other Canadian governments, Canadian hospitals, other businesses in the same province, other businesses in Canada, businesses in other countries, foreign governments or institutions?

Question 6.2: What licensing arrangements do you engage in (e.g., pay royalties, cross-licensing, others)?

Question 6.3: Is licensing-out a deliberate strategy of your firm?

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Module 7: Process innovation

Screening question: Have you introduced a new or significantly improved product to the market in the past 3 years? Have you introduced a new or significantly improved process, organizational change or market innovation in the past 3 years? [If the respondent hasn't answered Module 7, ask] If so, please describe the innovation.

Question 7.1: How has the development of new process contributed to the profitability of your company? (e.g., reduced costs, improved quality, increase volume, improved production time)

Question 7.2: How, and how frequently, are your processes evaluated and modified?

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Module 8: Small R&D performers

Screening question: Have you performed R&D in the past 5 years? Do you have fewer than 20 employees **or** less than \$100,000 in R&D expenditures?

Question 8.1: What is the role of R&D in the company? How often is it performed? Who performs it?

Question 8.2: Do you receive the SR&ED tax credit? If not, why not? If so, has the SR&ED motivated your R&D? Do you benefit from any other R&D support programmes?

Question 8.3: If you do not conduct R&D continuously, what factors affect whether or not you conduct R&D? (e.g., have money, need a reason, availability of people, stage of development)

Question 8.4: What sources of funding do you have for your R&D (e.g., revenues, venture capital)? How does the availability of these affect your use of the SR&ED?

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Module 9: Other factors

Screening question: all.

Question 11.1: Were there any other factors that we missed that you would say contributed significantly to your ability to turn your new ideas into market successes?

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Conclusion

Thank you very much for your time. The information you have given us will be very useful to our research.

If you have any further thoughts on this topic, you are welcome to call us. Also, if you have any background documents on your company that you think would help us, we would appreciate having them. You will have our names and addresses on the **Information Sheet**.

We would like to present you with this small token of our appreciation for having participated in our research, **Canada a Portrait** and a copy of the **Innovation Analysis Bulletin**.

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Glossary

Contract workers and consultants: People working under contract for the firm normally to undertake specific services often on a short-term basis. These are generally not counted as employees.

Copyrightable material: Literary, artistic, dramatic or musical works that are eligible for protection by copyright including books, papers, presentations, etc.

Cross-licensing agreement: An agreement between two or more companies to give legal permission to use each other's patents or proprietary technology.

Employees: Full-time equivalents excluding partners and directors of the corporation.

Innovation: For this study, innovation is the first market introduction of a new or significantly improved product or process.

Intellectual property: Refers to creations of the human mind that can be protected by legal means: inventions, copyrightable works, industrial designs, trademarks, know-how, integrated circuit topographies, new plant varieties and know-how.

Joint development: One or more companies joining forces to develop new products or technology.

Licensing agreement: Legal permission to utilize patents or proprietary technology for an up-front fee and/or royalties.

Personnel exchange: An on-going and reciprocal program in which researchers from one company spend time working at the partner company.

Process innovation: Process innovations are significant changes in production and delivery methods. (product innovations involve significant changes in the capabilities of the good or service).

R&D (research and development): Expenditures on scientific research and experimental development whether or not it is eligible for the SR&ED tax credit.

Revenues: Annual revenues from all sources.

Sector (Industry Sector): 3-digit NAICS or 3-digit SIC80.

SMEs (Small- and medium-sized enterprises): A term that is used to describe small- and medium-sized firms.

Spin-off: A company established with the assistance of a parent company to (a) exploit a specific licensed technology, (b) conduct R&D to develop a technology that is intended to be licensed back to the parent or (c) to provide a service that was originally offered by the parent company.

SR&ED tax credit: The Scientific Research and Experimental Development (SR&ED) program is a federal tax incentive program to encourage Canadian businesses of all sizes and in all sectors to conduct research and development (R&D) in Canada.

Subsidiary: A company with a legal reporting relationship to a parent company.

Technology acquisition investments: Foreign investment in companies aimed at gaining access to technology, especially in start-up or innovative medium-size firms.

Technology exchange: A swap of proprietary technologies, which may or may not involve transfer of money.

Technology: is the practical application of knowledge. We use the word technology as a general term for good, service, process, know-how, design, etc. produced by a technology-based company.

Venture capital: Risk capital invested by Venture Capital firms in privately held companies, generally through the underwriting of newly issued stock and/or convertible bonds.

Visitations and research participation: The dispatch of researchers to visit, observe, and participate in R&D activities of partner firms.

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