



R&D Review Panel Consultations and Research

FINAL REPORT

Submitted to:

Melanie Robert
Director, Consultations and Communication
Review of Federal Support to Research and Development
270 Albert Street
Ottawa, Ontario
K1P 5G8

EKOS RESEARCH ASSOCIATES INC.

June 2011

EKOS RESEARCH ASSOCIATES

Ottawa Office

359 Kent Street, Suite 300

Ottawa, Ontario

K2P 0R6

Tel: (613) 235 7215

Fax: (613) 235 8498

E-mail: pobox@ekos.com

Toronto Office

181 Harbord Street

Toronto, Ontario

M5S 1H5

Tel: (416) 598 8002

Fax: (416) 533-4713

E-mail: toronto@ekos.com

www.ekos.com

TABLE OF CONTENTS

Executive Summary	iii
1. Background and Methodology	1
1.1 Background.....	1
1.2 Methodology	1
2. Survey Findings	3
2.1 Reasons for Not Performing R&D	3
2.2 Company Profile	4
2.3 Type of R&D Performed	13
2.4 Participation in Federal R&D Programs	17
2.5 Importance of R&D Program.....	30
2.6 Sources and Obstacles to Innovation	37
2.7 Final Comments	39

EXECUTIVE SUMMARY

Background and Methodology

The Government of Canada appointed an independent expert panel to review federal support to business and commercially-oriented research and development (R&D). The panel has a mandate to review all federal government initiatives including tax support to business R&D, direct support to business R&D, and support to commercially-oriented R&D conducted by, for instance, colleges and universities. The objective of this study was to gain insights from user as well as non-user firms regarding federal support programs targeted at business and commercially-oriented R&D.

The research findings for this study have been drawn from the results of a telephone survey of businesses in Canada. We surveyed 1,115 firms between March 29 and May 2, 2011 as part of this study (1,009 firms which performed R&D, and 106 firms which did not). The margin of error associated with a sample size of 1,115 is +/-2.9 percentage points, 19 times out of 20 (the margin of error associated with the 1,009 R&D performing firms is +/- 3.1 percentage points, 19 times out of 20). The sample included all provinces and territories, and the questionnaire was administered in both English and French.

Key findings from the study are outlined below, and survey results are described in more detail in the remainder of this report.

Survey Findings

Profile of R&D Performing Firms

R&D performing firms were first asked a number of profiling questions. Results reveal that the majority of the R&D firms surveyed are relatively small, with roughly half (51 per cent) employing fewer than five full time employees. Approximately one in three (32 per cent) employ between five and 19 full time employees, while one in ten (nine per cent) employed 20 to 49 full time staff. Only seven per cent of the R&D firms surveyed indicated they employed 50 or more full time employees.

R&D firms were also asked, unprompted, to identify the sector of the economy in which their firm operates. Responses are highly diverse, with respondents naming more than 30 sectors. Approximately one in seven respondents listed professional, scientific, and technical services (15 per cent) and information technology and software development (13 per cent), while about one in 10 named other information and cultural industries (nine per cent), other manufacturing (eight per cent), or computer and electronic products (seven per cent).

When asked to estimate their firm's total revenues in the last fiscal year, roughly one in five (22 per cent) estimate their firm's total revenues at over \$1,000,000. One in three (35 per cent) indicated their firm's gross revenue was between \$100,001 and \$1,000,000, and one in six (16 per cent) indicated their firm's total revenues were \$100,000 or less. A fairly large proportion of the firms surveyed (28 per cent) did not provide a response to this question.

When asked to estimate their firm's total expenses related to R&D, half of respondents (49 per cent) say their firm spent \$100,000 or less on research and development over the last fiscal year, while one in five estimate the figure at \$100,001-\$1,000,000. Only four per cent indicate it is more than \$1,000,000. Again a fairly large proportion (27 per cent) did not provide a response to this question.

Type of R&D Performed and Influence of Firms' R&D Activities

Respondents were next asked to elaborate on how their company conducts R&D. Virtually all of the firms surveyed (96 per cent) conduct research and development in-house. A further 37 per cent perform R&D through external contracts, and 32 per cent indicate that they do both.

Those who perform R&D in-house were asked what percentage of their R&D performers hold doctorates/PhDs, graduate degrees, are undergraduates, or are technicians/technologists. Results reveal that in 3 per cent of these firms a majority of R&D performers hold doctorates, in 29 per cent of these firms a majority of R&D performers hold graduate degrees, and in 38 per cent of these firms a majority of R&D employees are undergraduates. Results further reveal that in 24 per cent of these firms a majority of R&D performers are technicians or technologists.

Firms that indicated they use external contracts for R&D were asked, unprompted, in which type of institution or organization was their R&D conducted. More than six in ten of these respondents (62 per cent) indicated a private company in Canada, while one in five (22 per cent) indicated a Canadian university.

Survey results also reveal that respondents generally perceive their firm's research and development as having an influence on the products or production processes of other firms. The plurality of respondents (40 per cent) believe their R&D has had a great influence on other firms' products and processes, while one-quarter (23 per cent) believe it has had a moderate influence.

Participation in Federal R&D Programs

Surveyed firms were asked how frequently their firm uses or attempts to participate in federal R&D support programs. Results reveal that four in ten (40 per cent) claim that they have never accessed these programs. One in four (27 per cent) use these programs almost every year, and six per cent use them several times per year.

Those who indicated they had never participated in federal R&D programs were asked, from a prompted list, why they had never participated in any of these federal programs. Half of the firms that have never used federal R&D support programs say they are simply not aware of any available programs (52 per cent). One-third (35 per cent) claim the application process is too burdensome, and one in five (19 per cent) say they are not eligible.

Those who indicated they had participated in federal R&D programs were asked, from a prompted list, how they had become aware of these federal programs. Results reveal that accounting firms/consultants are the most frequent source of information about federal R&D programs (selected by 37 per cent of these firms), followed by industry associations (21 per cent), and contacts in the federal public service (11 per cent).

Those who indicated they had participated in federal R&D programs were further asked if in the last three years their firm had received funding or support from the federal government in relation to R&D expenses. Two-thirds of these firms (66 per cent) indicated that they had received federal funding or support in the last three years, while the remaining one-third (34 per cent) indicated they had not.

Those who had received federal R&D funding in the previous three years were asked to indicate, unprompted, from which program(s) they received their federal funding or support. The Scientific Research and Experimental Development Program (SR&ED) was mentioned by far the most often – fully 73 per cent indicated that their firm had received funding from this program, followed distantly by the Industrial Research Assistance Program (IRAP) (17 per cent). No other federal program was mentioned by more than one per cent of these respondents, and 14 per cent did not provide a response to this question. Those who did not provide a response to this question were provided with a prompted list of programs and asked which of these programs they had used. Again the SR&ED program is selected by the vast majority of these respondents (87 per cent), followed distantly by IRAP (eight per cent).

Survey respondents who indicated they had received federal funding in the previous three years were then asked to evaluate the impact of these federal support programs on their company. Results reveal fairly positive views on the perceived impact of federal R&D programs. Seven in ten indicated that the federal programs had a significant impact in terms of increasing their firm's ability to conduct R&D, and increasing their firm's long-term investment in innovation. Six in ten or more also felt that federal programs improved firm knowledge and/or technology (67 per cent), increased their investment in R&D (62 per cent), and improved firm growth/performance (60 per cent). However, federal support programs are seen as having less of an impact in terms of improving the timeliness of the project (41 per cent), encouraging the adoption of technology/knowledge from outside the firm (39 per cent), or increasing collaboration with public institutions/researchers (20 per cent).

These respondents were also asked to rate their satisfaction with different aspects of the programs used. Generally speaking, the surveyed firms express high levels of satisfaction with federal R&D support programs. Seven in ten are satisfied with the overall quality of the program delivery (74 per cent) and the form of support (71 per cent). Roughly two-thirds are also satisfied with the conditions on eligibility

(68 per cent), eligible expenses (66 per cent), and length of time between decision and receipt of funds (63 per cent). Six in ten express satisfaction with the skills and expertise for the assessment of the project (61 per cent), the amount of support provided (61 per cent), the reporting requirements for the firm (59 per cent), and the length of time between application and decision (58 per cent). At the bottom of the list, although still garnering majority satisfaction ratings, was the appropriateness of the selection process (56 per cent).

Importance of R&D Programs

Those who received federal funding, but not in the previous three years, were asked to rate the importance of a range of aspects of federal program design for their firm. Roughly seven in ten or more rated all of the aspects examined as at least moderately important to their firm, with eligible expenses topping the list (79 per cent).

Surveyed firms who had used federal programs were also asked to rate the overall importance of federal programs to carry out R&D. Fully two-thirds feel these support programs are important, and an additional 13 per cent feel they are somewhat important (only 15 per cent feel they are not important).

These respondents were further asked whether, as a result of the support received from federal programs, their firm had expended less, more, or the same amount of its resources on R&D than it otherwise would have. The majority (58 per cent) indicate their firm has expended more of its resources on R&D than it otherwise would have, and only seven per cent indicate their firm expended less of its resources on R&D as a result of federal programs.

All respondents were asked to rate the importance of a range of aspects of federal R&D support. Funding from tax credits (67 per cent) and direct funding (66 per cent) were assigned greatest importance by the firms surveyed, followed distantly by research or technical services (40 per cent). Only about one in three feel that facilitating networks and linkages (35 per cent), facilitating internships and scholarships (33 per cent), business incubation and/or business advice (32 per cent), and facilitating joint R&D with post-secondary institutions (30 per cent) are important to their firm; and only one in four or fewer assign importance to procurement or government being a first-user (24 per cent), or facilitating joint R&D with federal labs (21 per cent).

All respondents were also asked if they felt there were any gaps in the Government of Canada's support for business and commercially-oriented R&D. Over half (54 per cent) feel that there are gaps in federal support for R&D, with a lack of support for smaller businesses, an onerous application and reporting process, and a lack of flexible funding options being seen as the most significant issues/gaps.

Finally, all respondents were asked, unprompted, if they had any last comments related to the Government of Canada's support of business and commercially-oriented R&D. A wide array of comments were offered, with better access/eligibility for small businesses, greater awareness/advertising about the programs, and expansion of the programs being mentioned most often.

1. BACKGROUND AND METHODOLOGY

1.1 BACKGROUND

The Government of Canada appointed an independent expert panel to review federal support to business and commercially-oriented research and development (R&D). The panel has a mandate to review all federal government initiatives including tax support to business R&D, direct support to business R&D, and support to commercially-oriented R&D conducted by, for instance, colleges and universities. The panel is empowered to make fiscally-neutral recommendations, by mid-October 2011, based on an analysis of program/initiative effectiveness and design, as well as gaps within the portfolio.

The objective of this study was to gain insights from user as well as non-user firms regarding federal support programs targeted at business and commercially-oriented R&D.

1.2 METHODOLOGY

The research findings for this study have been drawn from the results of a telephone survey of businesses in Canada. We surveyed 1,115 firms between March 29 and May 2, 2011 as part of this study (1,009 firms which performed R&D, and 106 firms which did not). The margin of error associated with a sample size of 1,115 is +/-2.9 percentage points, 19 times out of 20 (the margin of error associated with the 1,009 R&D performing firms is +/- 3.1 percentage points, 19 times out of 20). The sample included all provinces and territories, and the questionnaire was administered in both English and French.

Sample

The sample was developed in consultation with the client. First, we identified industry sectors which would likely have an R&D focus based on BERD (Business Expenditures on R&D) information contained in Statistics Canada reports. We then matched the industry sectors identified (e.g., aerospace products and parts, computer and electronic products, pharmaceutical and medicine) with North America Industry Classification System (NAICS) codes. Based on these NAICS codes, we drew the sample frame for this study. Final survey results were weighted across region, size, and sector based on the overall sample frame developed through these NAICS codes.

Design and Pretest

The questionnaire was designed by the Panel and focussed on the general evaluation of government programs and their effect on firms' R&D undertakings, as well as reasons for not accessing government programs. EKOS reviewed and provided input to the questionnaire to help with the flow and clarity of the questionnaire. Once the questionnaire was finalized, it was translated and pre-tested with 38 respondents (20 English and 18 French). The EKOS Project Manager monitored the pre-test of the questionnaire to ensure that the questions were properly understood by respondents. No significant issues were encountered in the pretest and full fieldwork began.

Survey Implementation

Prior to beginning fieldwork, the study objectives and sampling of the questionnaire, as well as the meaning and intent of specific items in the questionnaire were thoroughly covered with the full complement of interviewers who were working on the study. Test or practice interviews were conducted before starting the fieldwork to familiarize interviewers with the questions, categories, flow, and skip logic.

EKOS Supervisors continuously monitored interviewing during the data collection process, using a dual audio and visual monitoring system. Ten per cent of interviews from each survey were monitored to ensure consistency of questionnaire administration and interviewing techniques.

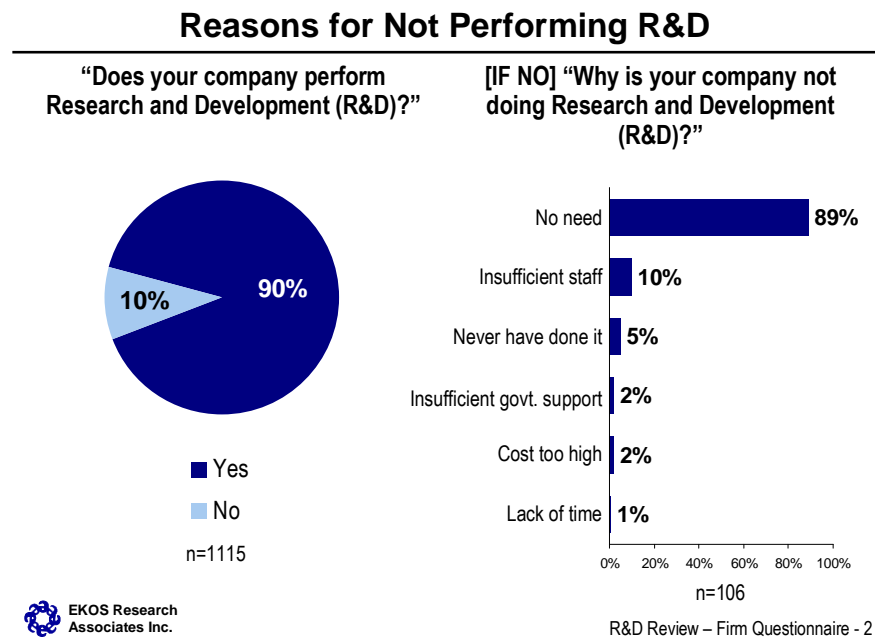
As is standard EKOS practice, a minimum of eight call-backs (nine total calls) were made to each selected business in the original sample before retiring a case and substituting another. Follow-up calls were made on subsequent days, at varying time periods to maximize the potential for reaching a given respondent, and appointments were taken at the convenience of the respondent. All individuals were given the choice of conducting the interview in either official language. If respondents preferred to call the survey team back for an appointment, they were offered our 1-800 number in the survey centre. Respondents were also given the option of completing the survey online if they wished (although none elected to complete the survey online).

The remainder of this report summarizes the results of this study.

2. SURVEY FINDINGS

2.1 REASONS FOR NOT PERFORMING R&D

Respondents were first asked if their company performed R&D. Ninety per cent of the sample indicated they did, while 10 per cent of survey respondents indicated their company did not perform R&D. Firms that did not perform R&D were asked why this was the case. The vast majority of these respondents (89 per cent) said that their company simply has no need for research and development. Other responses include insufficient staff (10 per cent), no corporate experience in this area (five per cent), insufficient government support (two per cent), impractical costs (two per cent), or a lack of time (one per cent).



The remainder of the survey examined the views of firms which indicated they do perform R&D (n=1009). Survey results for the R&D performing firms are organized into five main areas: company profile, type of R&D performed, participation in federal R&D programs, importance of R&D programs, and sources and obstacles to innovation.

2.2 COMPANY PROFILE

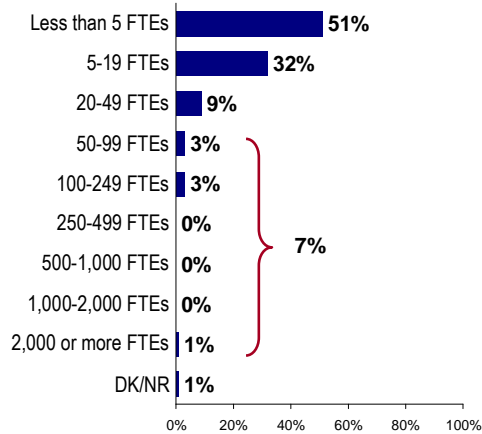
Respondents whose firm did perform R&D were asked a number of profiling questions about their company.

a) Number of Employees

Surveyed firms were asked how many full time employees are currently employed by their company. Results reveal that the majority of R&D performing companies that were surveyed are relatively small, with roughly half (51 per cent) employing fewer than five full time employees. Approximately one in three (32 per cent) employ between five and 19 full time employees, while one in ten (nine per cent) employed 20 to 49 full time staff. Only seven per cent of the R&D firms surveyed indicated they employed 50 or more full time employees.

Number of Employees

“Approximately how many full time employees are currently employed in your company?”

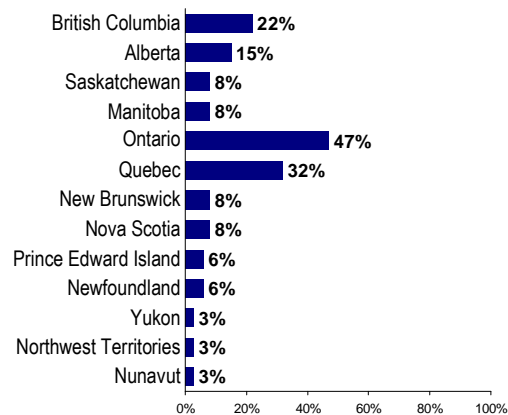


b) Province of Operation

R&D firms were also asked to list the provinces in which their firm operates (please note multiple responses were accepted for this question). Not surprisingly, roughly half of the firms surveyed (47 per cent) conduct operations in Canada's largest province – Ontario. A further one in three (32 per cent) say they operate in Quebec. Approximately one in five responding firms conduct operations in British Columbia (22 per cent) and Alberta (15 per cent). About one in 10 firms say they operate in Manitoba (eight per cent), New Brunswick (eight per cent), Nova Scotia (eight per cent), Saskatchewan (eight per cent), Newfoundland (six per cent), or Prince Edward Island (six per cent).

Province of Operation

“In which province is your firm operating?” [Accept multiple responses]



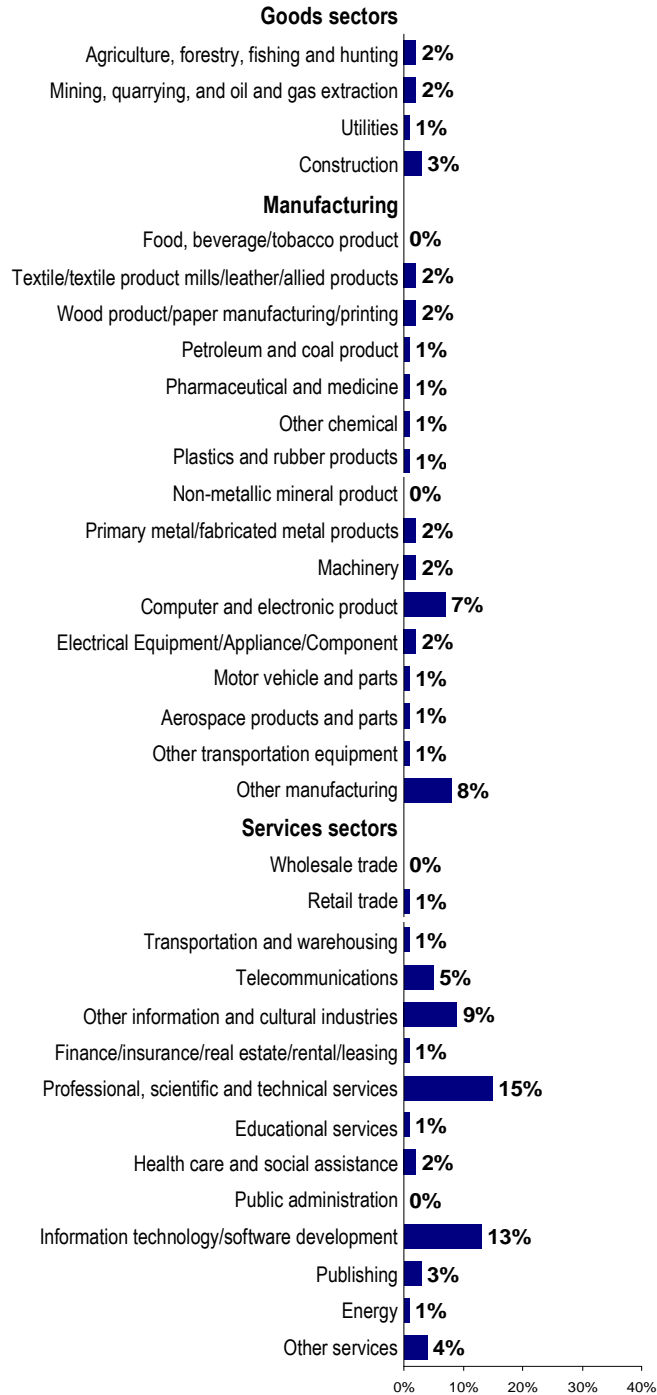
c) Sector

R&D firms were asked, unprompted, to identify the sector of the economy in which their firm operates. Responses are highly diverse, with respondents naming more than 30 sectors. Approximately one in seven respondents listed professional, scientific, and technical services (15 per cent) and information technology and software development (13 per cent), while about one in 10 named other information and cultural industries (nine per cent), other manufacturing (eight per cent), or computer and electronic products (seven per cent).

- Not surprisingly, certain sectors are more common in some provinces than in others. For instance, 13 per cent of companies in the Prairies are engaged in agriculture, forestry, and hunting (compared to two per cent nationally). Similarly, 12 per cent of Albertan firms conduct mining, quarrying, and oil and gas extraction (versus two per cent nationally).

Sector

“In what sector of the economy does your firm operate?” [Open]



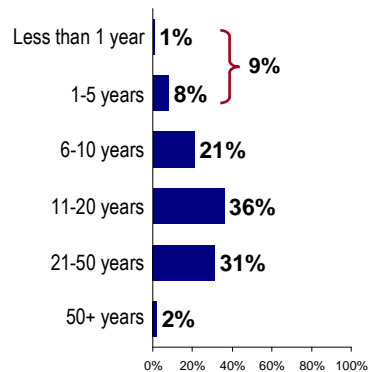
d) Number of Years in Operation and Ownership

Respondents were also asked how long their firm has been operating in Canada. Results reveal that the plurality of the R&D firms surveyed (36 per cent) say they have been operating in Canada for eleven to 20 years, while a similar proportion (31 per cent) have been in business for 21-50 years. One in five (21 per cent) has been operating for six to ten years, and one in ten (nine per cent) has been operating less than five years. Just two per cent say they have been operating more than 50 years.

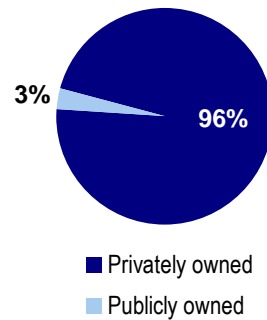
Results further reveal that nearly all of the firms who responded to this survey are privately owned. When asked whether their firm is privately or publicly owned, 96 per cent of responding firms claim private ownership. Just three per cent say they are publicly owned.

Number of Years in Operation and Ownership

“How many years has your firm been in operation in Canada?” [Open]



“Is your firm privately or publicly owned?”



e) Total Revenues and Expenses Related to R&D

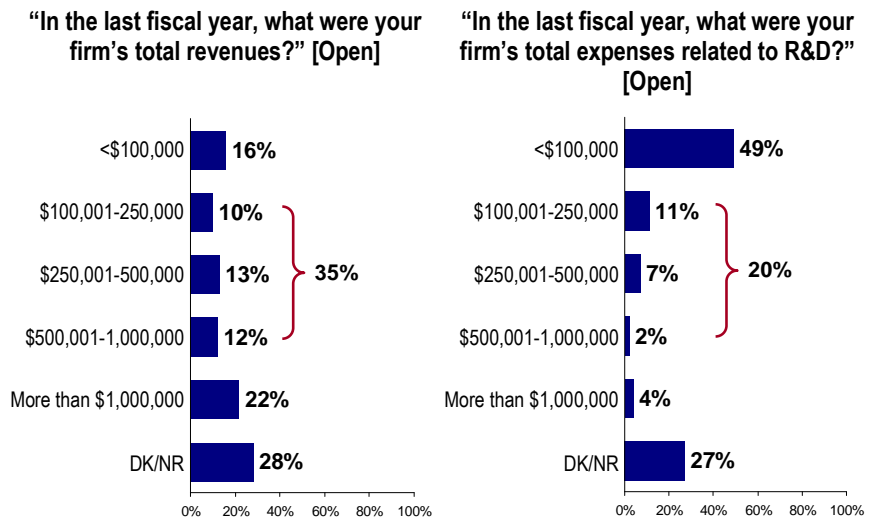
When asked to estimate their firm's total revenues in the last fiscal year, roughly one in five (22 per cent) estimate their firm's total revenues at over \$1,000,000. One in three (35 per cent) indicated their firm's gross revenue was between \$100,001 and \$1,000,000, and one in six (16 per cent) indicated their firm's total revenues were \$100,000 or less. A fairly large proportion of the firms surveyed (28 per cent) did not provide a response to this question.

- Regionally, firms that operate in the Prairies and in Ontario report the highest revenues while companies in Atlantic Canada reported the lowest revenues.

When asked to estimate their firm's total expenses related to R&D, half of respondents (49 per cent) say their firm spent \$100,000 or less on research and development over the last fiscal year, while one in five estimate the figure at \$100,001-\$1,000,000. Only four per cent indicate it is more than \$1,000,000. Again a fairly large proportion (27 per cent) did not provide a response to this question.

- Not surprisingly, expenditures on research and development increase progressively with the size and revenue of the firm.

Total Revenues and Expenses Related to R&D

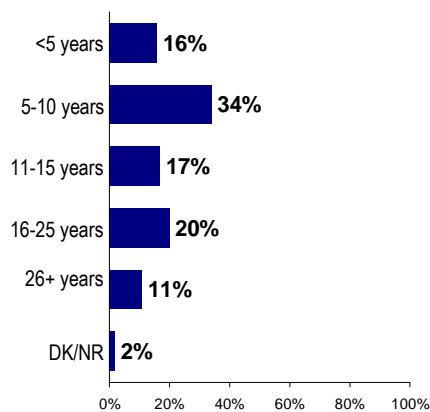


f) Years Performing R&D

Surveyed firms indicate that they have been performing R&D for a fairly long period of time. One in ten (11 per cent) say they have been performing R&D for 26 years or more, while 20 per cent have been doing so for 16 to 25 years. Seventeen per cent have conducted research and development for 11 to 15 years and 34 per cent have been doing so for five to ten years. Just sixteen per cent have been engaged in research and development for less than five years.

Years Performing R&D

“How many years has your firm been performing R&D?” [Open]

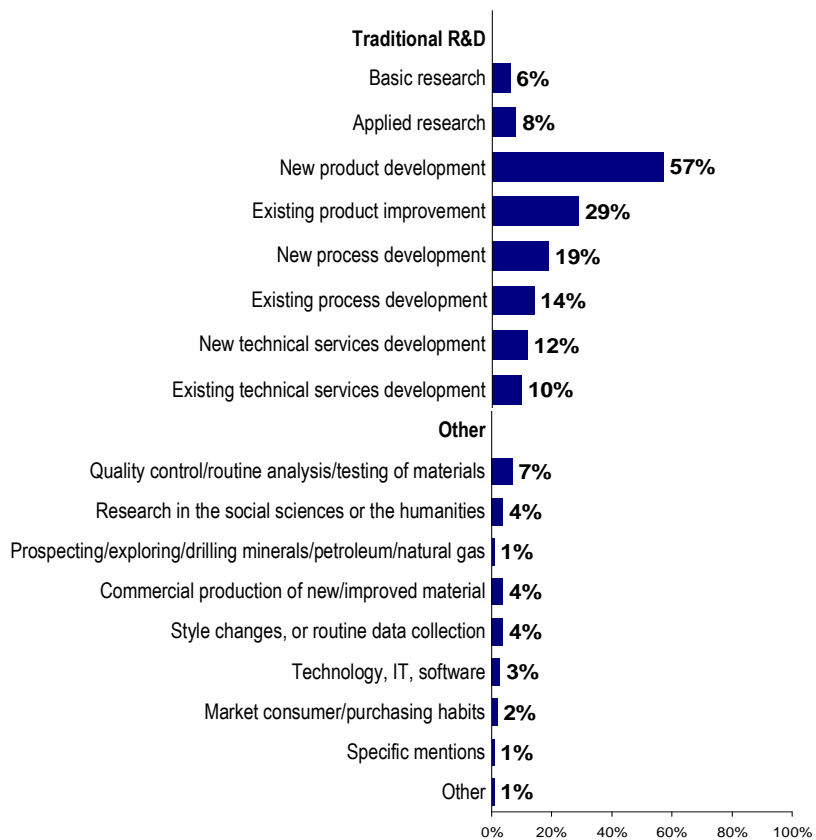


g) Type of R&D Performed

Respondents were asked, unprompted, to describe the types of research and development that their firm conducts. More than half of the firms surveyed (57 per cent) indicate that they are involved in new product development, and almost three in ten (29 per cent) indicate their R&D focus is on improving existing products. One in five (19 per cent) indicate they are involved in developing new processes, while one in seven (14 per cent) is seeking to improve existing processes. Just over one in ten (12 per cent) indicated their firm conducted new technical services development. All other areas were mentioned by 10 per cent or fewer of the surveyed firms.

Type of R&D Performed

“What kind of R&D does your firm conduct?” [Open – Accept multiple responses]

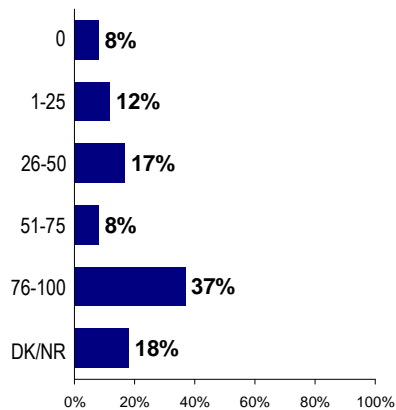


h) Proportion of R&D Expense Considered Investment

Surveyed firms were asked what proportion of their research and development expenses they would categorise as an investment as opposed to an expenditure. Results reveal that the plurality (37 per cent) consider between 76 and 100 per cent of their expenses to be an investment, while an additional eight per cent place this proportion between half and three-quarters. Seventeen per cent feel that between one-quarter and half of their research and development expenses should be treated as an investment, while twelve per cent would put this proportion at one-quarter or less. Eight per cent do not consider any of their research and development expenses to be an investment.

Proportion of R&D Expense Considered Investment

“What proportion of R&D expenses from last fiscal year do you consider to be an investment as opposed to an expenditure?” [Open]

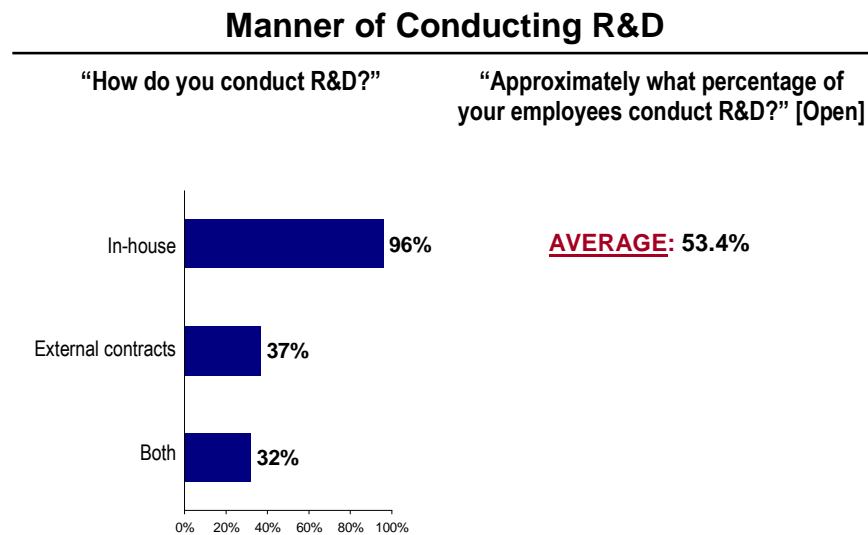


2.3 TYPE OF R&D PERFORMED

a) Manner of Conducting R&D

Respondents were next asked to elaborate on how their company conducts R&D. Virtually all of the firms surveyed (96 per cent) conduct research and development in-house. A further 37 per cent perform R&D through external contracts, and 32 per cent indicate that they do both.

Results further reveal that over half of the surveyed firms' employees conduct R&D (53 per cent).

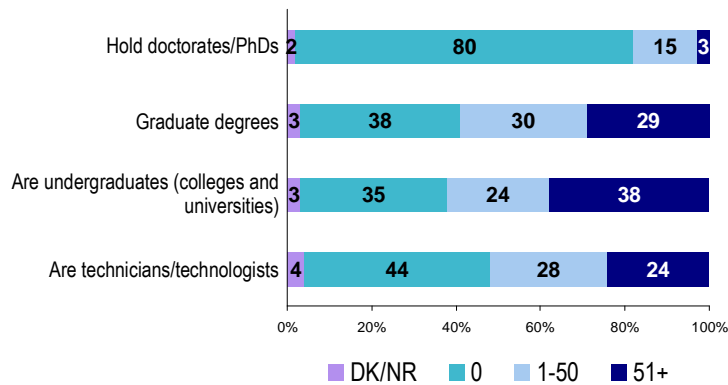


b) Types of R&D Performers Employed by Firm

Those who perform R&D in-house were asked what percentage of their R&D performers hold doctorates/PhDs, graduate degrees, are undergraduates, or are technicians/technologists. Results reveal that in 3 per cent of these firms a majority of R&D performers hold doctorates, in 29 per cent of these firms a majority of R&D performers hold graduate degrees, and in 38 per cent of these firms a majority of R&D employees are undergraduates. Results further reveal that in 24 per cent of these firms a majority of R&D performers are technicians or technologists.

Types of R&D Performers Employed by Firm

[IF IN-HOUSE] "Approximately what percentage of your R&D performers...?"

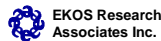
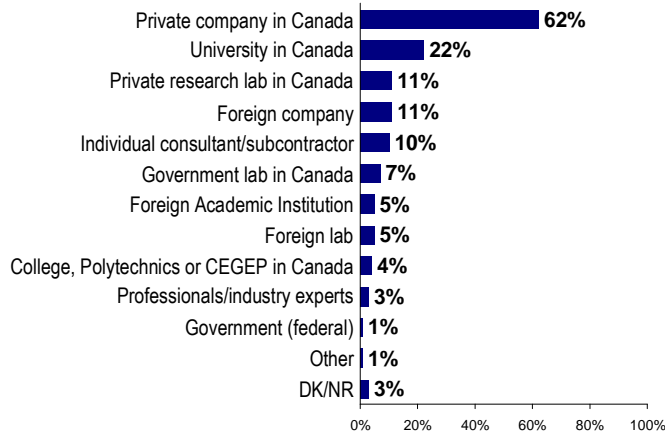


c) Type of Organizations Contracted for R&D

Firms that indicated they use external contracts for R&D were asked, unprompted, in which type of institution or organization was their R&D conducted. More than six in ten of these respondents (62 per cent) indicated a private company in Canada, while one in five (22 per cent) indicated a Canadian university. One in ten of these respondents say they use private research labs in Canada (11 per cent), foreign companies (11 per cent), individual consultants and subcontractors (10 per cent), or a Government lab in Canada (seven per cent).

Type of Organizations Contracted for R&D

[IF EXTERNAL CONTRACTS] "You indicated you use external contracts for R&D. In which type of institution or organization was your R&D conducted?"
 [Open – Accept multiple responses]



n=402

R&D Review – Firm Questionnaire - 17

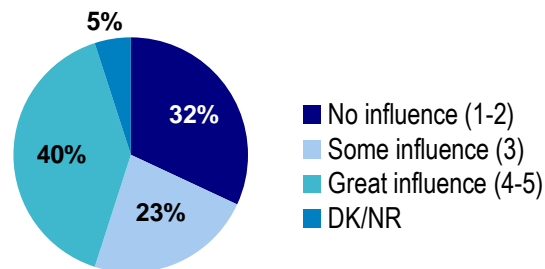
d) Extent of Firm R&D Influence on Other Firms

Survey results reveal that respondents generally perceive their firm's research and development as having an influence on the products or production processes of other firms. The plurality of respondents (40 per cent) believe their R&D has had a great influence on other firms' products and processes, while one-quarter (23 per cent) believe it has had a moderate influence. However, a fairly sizeable proportion (32 per cent) feel their R&D has had little impact on other companies, and five per cent are uncertain.

- Not surprisingly, representatives of smaller firms see themselves as having less influence relative to those from larger firms: 37 per cent of firms with fewer than five employees say their influence is minimal, compared to 29 per cent of companies with 50 employees or more.

Extent of Firm R&D Influence on Other Firms

“To your knowledge, has your firm's R&D influenced the products or production processes of other firms?”



2.4 PARTICIPATION IN FEDERAL R&D PROGRAMS

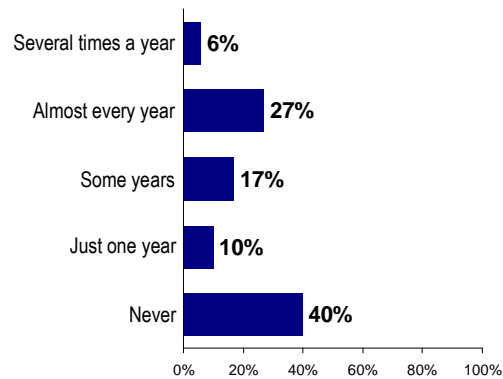
a) Frequency of Participation in Federal R&D Programs

Surveyed firms were asked how frequently their firm uses or attempts to participate in federal R&D support programs. Results reveal that four in ten (40 per cent) claim that they have never accessed these programs. One in four (27 per cent) use these programs almost every year, and six per cent use them several times per year. One in five (17 per cent) have taken advantage of these programs during “some” years, and one in ten (10 per cent) have used federal R&D programs only once.

- Use of federal support programs appears to be somewhat less frequent among smaller firms (68 per cent of firms earning less than \$1,000,000 and 53 per cent of firms with fewer than five employees say they have never used federal support programs).

Frequency of Participation in Federal R&D Programs

“How frequently has your firm used or attempted to participate in federal programs, including tax credits, that support business or commercially-oriented R&D?”

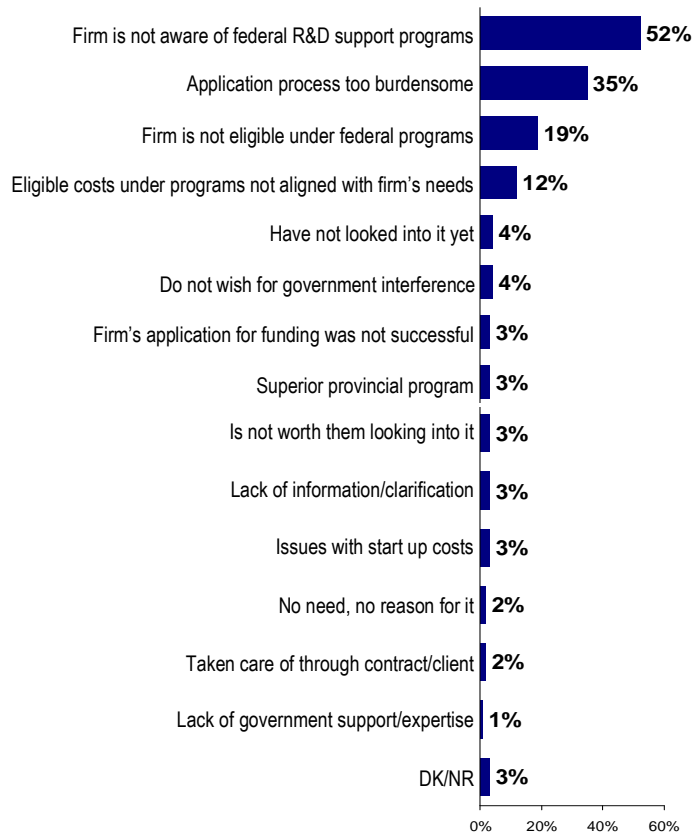


b) Reasons for Not Participating in Federal R&D Programs

Those who indicated they had never participated in federal R&D programs were asked, from a prompted list, why they had never participated in any of these federal programs. Half of the firms that have never used federal R&D support programs say they are simply not aware of any available programs (52 per cent). One-third (35 per cent) claim the application process is too burdensome, one in five (19 per cent) say they are not eligible, and one in ten (12 per cent) say the eligible costs under these programs do not align with their company's need. All other responses were mentioned by fewer than five per cent of these respondents.

Reasons for Not Participating in Fed. R&D Programs

[IF NEVER] "Are any of the reasons listed below among the reasons your firm has never used or participated in federal programs that support business or commercially-oriented R&D?"

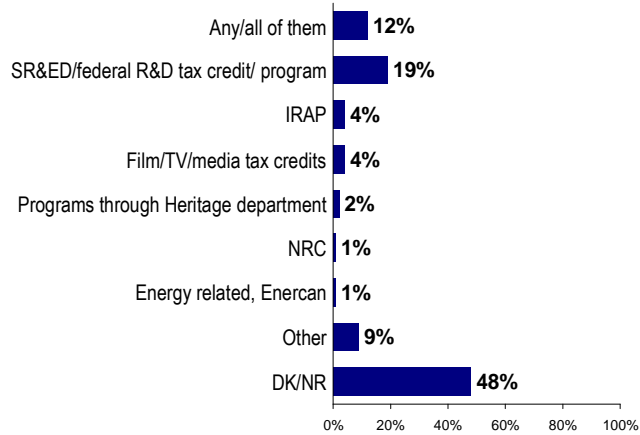


Respondents who indicated the application process is too burdensome, the firm's application for funding was not successful, a provincial program is superior, or the eligible costs under the programs are

not aligned with the firm's needs were asked, unprompted, to name the programs to which these reasons for not participating apply. Almost half of these respondents (48 per cent) were unable to identify the program. Among those who did, the plurality (19 per cent) identified the SR&ED program.

Reasons for Not Participating in Fed. R&D Programs (2)

"For which programs does this apply?" [Open – Accept multiple responses]



n=139

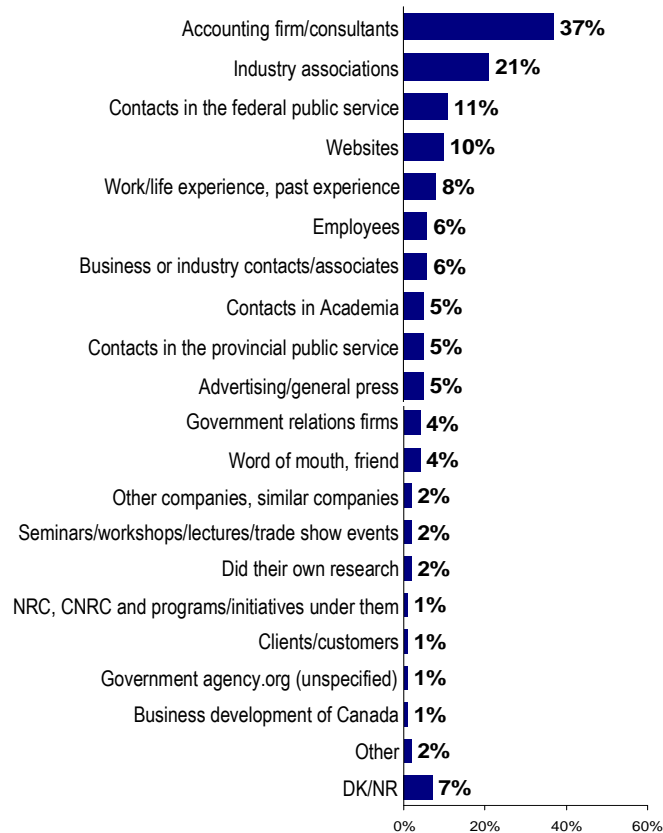
R&D Review – Firm Questionnaire - 21

c) Source of Awareness of Federal R&D Programs

Those who indicated they had participated in federal R&D programs were asked, from a prompted list, how they had become aware of these federal programs. Results reveal that accounting firms/consultants are the most frequent source of information about federal R&D programs (selected by 37 per cent of these firms), followed by industry associations (21 per cent), and contacts in the federal public service (11 per cent). All other sources were mentioned by 10 per cent or fewer of these respondents.

Source of Awareness of Federal R&D Programs

“How did you become aware of federal programs that support business or commercialization-related R&D?”



d) Receipt of Support and Amount of Federal Funding Received in Previous Three Years

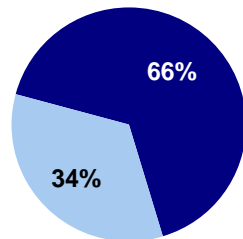
Those who indicated they had participated in federal R&D programs were further asked if in the last three years their firm had received funding or support from the federal government in relation to R&D expenses. Two-thirds of these firms (66 per cent) indicated that they had received federal funding or support in the last three years, while the remaining one-third (34 per cent) indicated they had not.

- Larger firms (five or more full time employees and \$100,000 or more in revenues), and firms operating for less than eleven years are particularly likely to indicate they have received federal funding in the last three years.

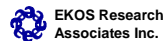
Those who had received federal R&D funding or support in the previous three years were asked to indicate how much funding their firm received in relation to R&D expenses in the last fiscal year (in addition to any non-financial support). The majority indicated it was \$100,000 or less (52 per cent), while one in five (21 per cent) indicated it was more than \$100,000. Almost one in three of these respondents (28 per cent) did not provide a response to this question.

Receipt of Support and Amount of Federal Funding Received in Previous Three Years

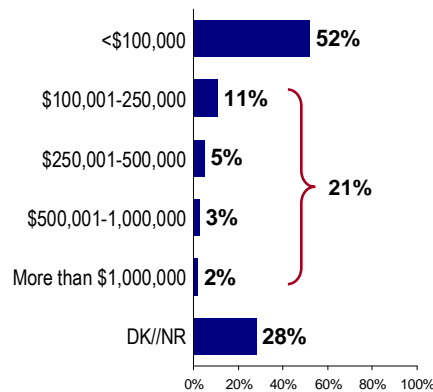
“In the last three years, did your firm receive funding, including tax credits, or non-financial support (e.g., networks, institutes) from the federal government in relation to R&D expenses?”



■ Yes
 ■ No
 n=678



“In addition to any non-financial support, approximately how much funding did your firm receive from the federal government in relation to R&D expenses in the last fiscal year?” [Open]



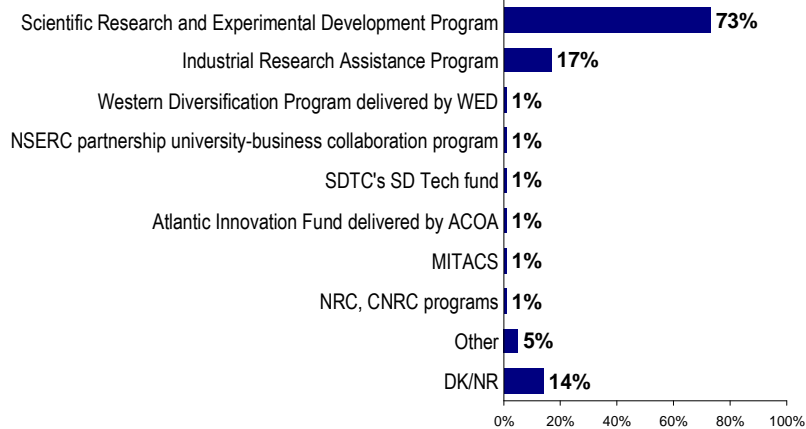
n=488
 R&D Review – Firm Questionnaire - 24


e) Program from Which Funding Received

Those who had received federal R&D funding in the previous three years were also asked to indicate, unprompted, from which program(s) they received their federal funding or support. The Scientific Research and Experimental Development Program (SR&ED) was mentioned by far the most often – fully 73 per cent indicated that their firm had received funding from this program, followed distantly by the Industrial Research Assistance Program (IRAP) (17 per cent). No other federal program was mentioned by more than one per cent of these respondents, and 14 per cent did not provide a response to this question.

Program from Which Funding Received

“In the last three fiscal years, from which program did your firm receive funding or support from the federal government in relation to business R&D?”
[Open– Accept multiple responses]



 EKOS Research
Associates Inc.

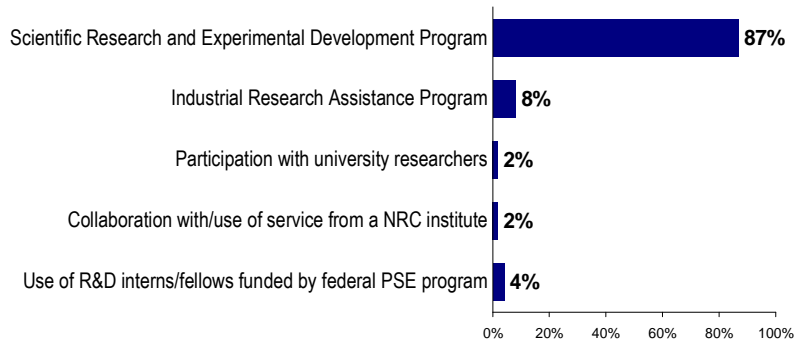
n=488

R&D Review – Firm Questionnaire - 5

Those who did not provide a response to the previous question were provided with a prompted list of programs and asked which of these programs they had used. Again the SR&ED program is selected by the vast majority of these respondents (87 per cent), followed distantly by IRAP (eight per cent).

Program Selected From List Among Respondents Who Did Not Remember Which Program Used

[IF DON'T KNOW] "Which of the programs have you used?"

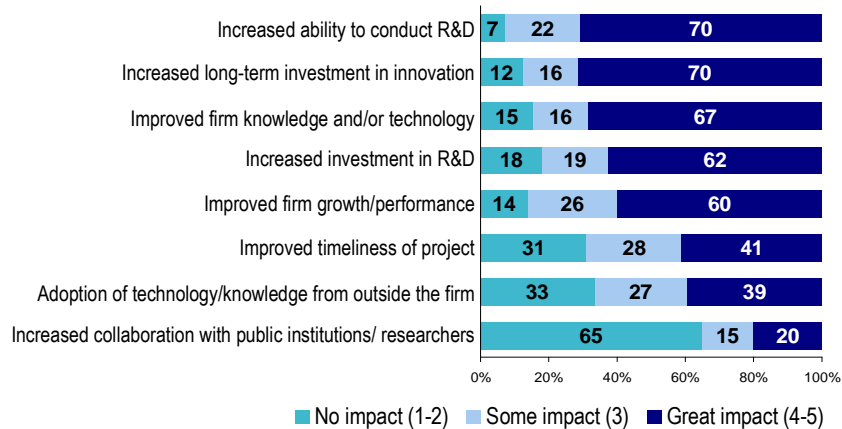


f) Impact of Federal R&D Programs

Survey respondents who indicated they had received federal funding in the previous three years were then asked to evaluate the impact of these federal support programs on their company. Results reveal fairly positive views on the perceived impact of federal R&D programs. Seven in ten indicated that the federal programs had a significant impact in terms of increasing their firm's ability to conduct R&D, and increasing their firm's long-term investment in innovation. Six in ten or more also felt that federal programs improved firm knowledge and/or technology (67 per cent), increased their investment in R&D (62 per cent), and improved firm growth/performance (60 per cent). However, federal support programs are seen as having less of an impact in terms of improving the timeliness of the project (41 per cent), encouraging the adoption of technology/knowledge from outside the firm (39 per cent), or increasing collaboration with public institutions/researchers (20 per cent).

Impact of Federal R&D Programs

“Thinking of your experience with this program, to what extent has this program impacted your company in each of the following areas?”

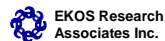
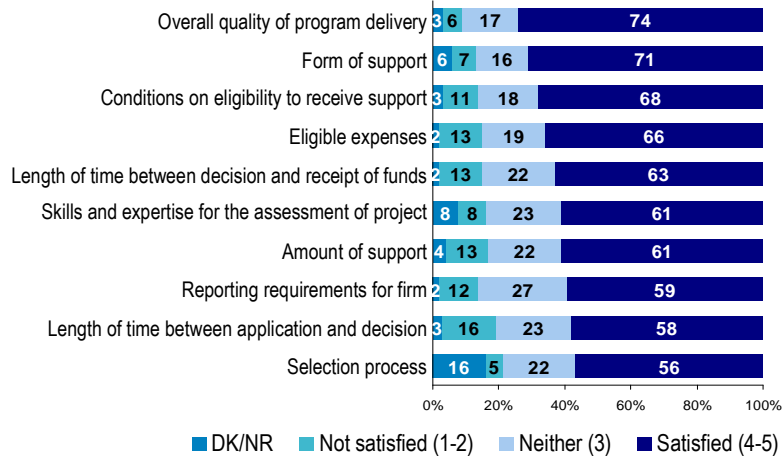


g) Satisfaction with Various Aspects of the Program

These respondents were also asked to rate their satisfaction with different aspects of the programs used. Generally speaking, the surveyed firms express high levels of satisfaction with federal R&D support programs. Seven in ten are satisfied with the overall quality of the program delivery (74 per cent) and the form of support (71 per cent). Roughly two-thirds are also satisfied with the conditions on eligibility (68 per cent), eligible expenses (66 per cent), and length of time between decision and receipt of funds (63 per cent). Six in ten express satisfaction with the skills and expertise for the assessment of the project (61 per cent), the amount of support provided (61 per cent), the reporting requirements for the firm (59 per cent), and the length of time between application and decision (58 per cent). At the bottom of the list, although still garnering majority satisfaction ratings, was the appropriateness of the selection process (56 per cent).

Satisfaction with Various Aspects of the Program

“For this same program, please rate your firm’s satisfaction with different aspects of the program.”



n=488

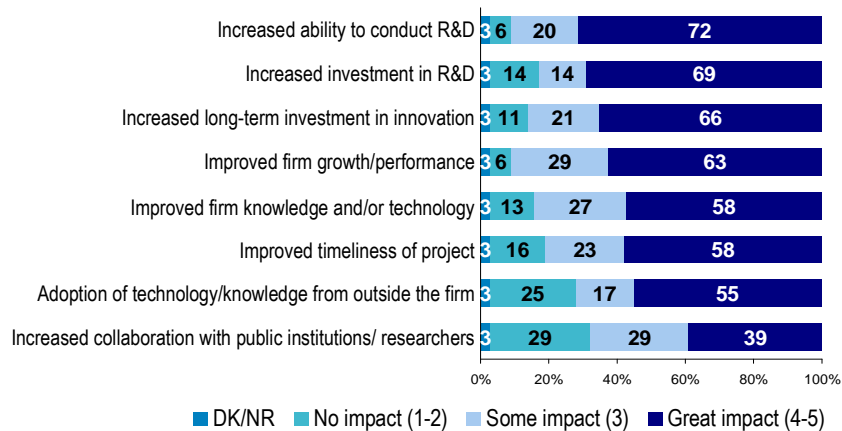
R&D Review – Firm Questionnaire - 8

h) Impact of Federal R&D Programs (2nd Program)

Those who indicated they had used more than one federal support program were asked to evaluate the impact of another federal program on their company (using the same criteria as that outlined in Section 2.4.f). Again, the views expressed are largely favourable. Seven in ten indicated that the federal program had a great impact in terms of increasing their firm's ability to conduct R&D (72 per cent), and increasing investment in R&D (69 per cent). Roughly two-thirds felt that the program increased their long term investment in innovation (66 per cent), and improved firm growth/performance (63 per cent). Just under six in ten felt that this second federal program improved firm knowledge and/or technology (58 per cent), improved the timeliness of the project (58 per cent), and contributed to adopting technology/knowledge from outside the firm (55 per cent). However, only four in ten felt the program had a great impact in terms of increasing collaboration with public institutions/researchers (39 per cent).

Impact of Federal R&D Programs (2nd Program)

“Thinking of your experience with this program, to what extent has this program impacted your company in each of the following areas?”

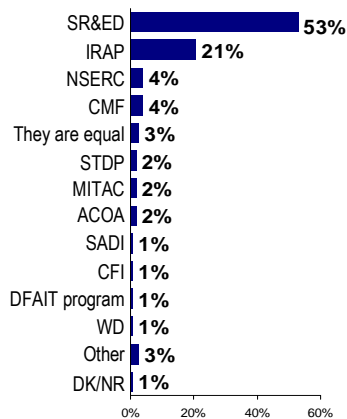


i) Perceptions of R&D Programs' Impact on Firm Ability to Innovate

Those who indicated they had used more than one federal support program were also asked which of the programs had the most impact on their ability to innovate and which had the least impact in this regard. The SR&ED program was seen as having the greatest impact on firms' ability to innovate, followed by IRAP. Interestingly IRAP and SR&ED were also mentioned most often as the programs which had the least impact on firms' ability to innovate.

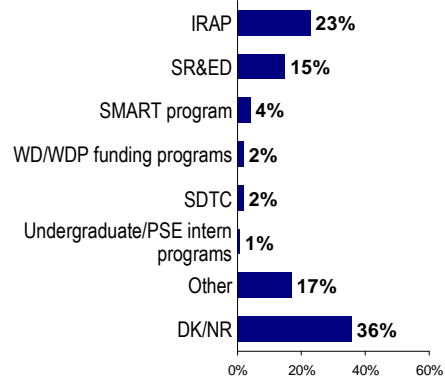
Perceptions of R&D Programs' Impact on Firm Ability to Innovate

"Which of all the business R&D support program you used had the MOST impact on your ability to innovate?" [Open]



EKOS Research Associates Inc.

"Which of all the business R&D support programs you used had the LEAST impact in terms of your ability to innovate?" [Open]



n=89

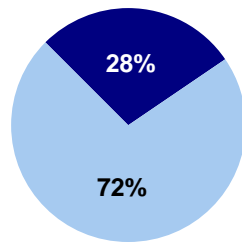
R&D Review – Firm Questionnaire - 10

j) Participation in Programs that Support Linkages with PSEs

Respondents were asked if their firm had ever participated in a program that supports linkages with post secondary institutions (PSEs). Fewer than three in ten (28 per cent) indicated that they had, while almost three in four (72 per cent) indicated they did not participate in this type of program. Those who did participate in these programs were asked to identify with which types of institutions they had partnered. Canadian universities were selected most often (78 per cent), followed by a Canadian college, polytechnic or CEGEP (40 per cent).

Participation in Programs that Support Linkages with PSEs

“Has your firm ever participated in a program that supports business linkages with post secondary (PSE) institutions?”

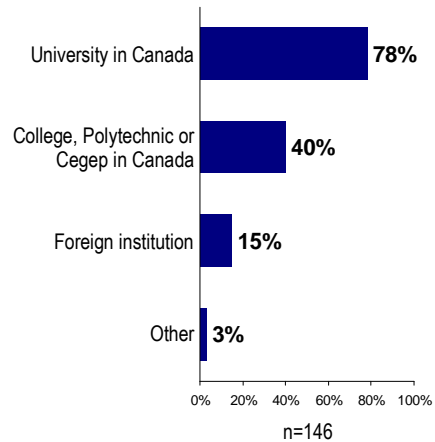


■ Yes
■ No

n=488



[IF YES] “Which types of institutions have you partnered?”



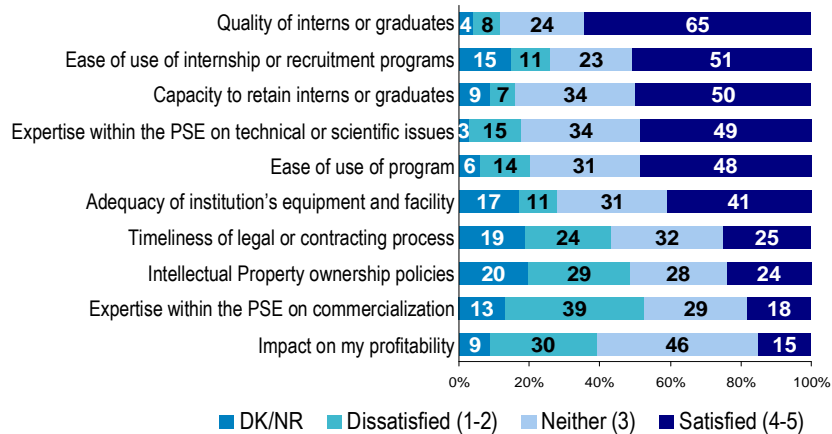
n=146
R&D Review – Firm Questionnaire - 11

k) Satisfaction with Different Areas of Experience with PSEs

Respondents who had participated in a program that supports linkages with PSEs were asked to rate their level of satisfaction with different areas of their experience with these PSEs. Satisfaction levels are highest in terms of the quality of interns or graduates (65 per cent satisfied), but drop off considerably for the other areas examined. Only about half are satisfied with the ease of use of internship or recruitment programs (51 per cent), the capacity to retain interns or graduates (50 per cent), the expertise within the PSE on technical or scientific issues (49 per cent), and the ease of use of the program (48 per cent). Four in ten are satisfied with the adequacy of the institution's equipment and facilities (41 per cent) and only one in four or fewer are satisfied with the timeliness of the legal or contracting process (25 per cent), intellectual property ownership policies (24 per cent), expertise within the PSE on commercialization (18 per cent), or the impact on the firm's profitability (15 per cent).

Satisfaction with Different Areas of Experience with PSEs

“What is your level of satisfaction with different areas of your experience with these PSEs?”



2.5 IMPORTANCE OF R&D PROGRAM

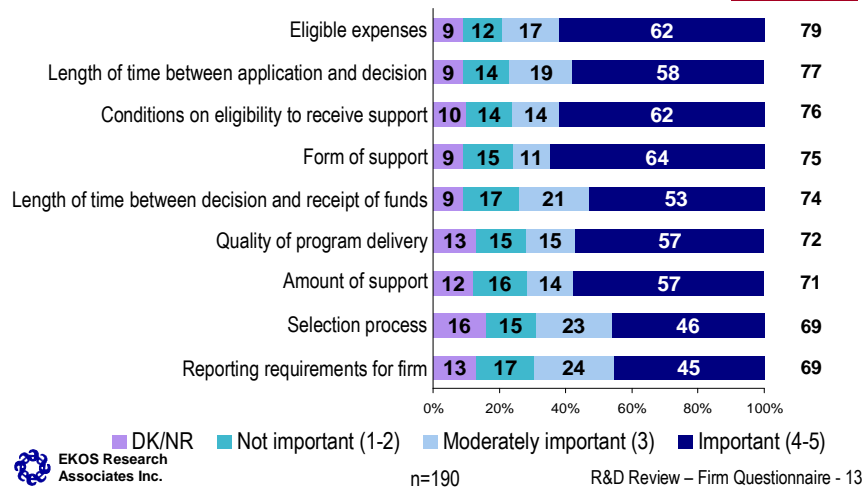
a) Importance of Various R&D Program Aspects

Those who received federal funding, but not in the previous three years, were asked to rate the importance of a range of aspects of federal program design for their firm. Roughly seven in ten or more rated all of the aspects examined as at least moderately important to their firm, with eligible expenses topping the list (79 per cent). Three-quarters or more rated the length of time between application and decision (77 per cent), conditions on eligibility to receive support (76 per cent), form of support (75 per cent), and the length of time between the decision and the receipt of funds (74 per cent) as important or moderately important. And seven in ten feel that the quality of program delivery (72 per cent), amount of support (71 per cent), selection process (69 per cent), and the reporting requirements for the firm (69 per cent) are at least moderately important to their firm.

Importance of Various R&D Program Aspects

[IF HAVE NOT RECEIVED FUNDING IN LAST 3 YEARS] "Thinking overall about government programs that support R&D, how important are each of the following aspects of the programs' design for your firm?"

[Collapse \(3-5\)](#)



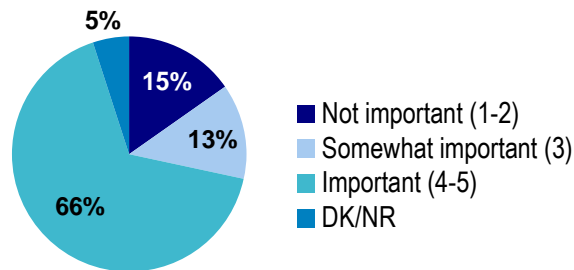
b) Importance of Federal R&D Programs to Carry Out R&D

Surveyed firms who had used federal programs were asked to rate the overall importance of federal programs to carry out R&D. Fully two-thirds feel these support programs are important, and an additional 13 per cent feel they are somewhat important (only 15 per cent feel they are not important).

- Firms with five or more full time employees and firms who have been performing R&D for 15 years or less are particularly likely to feel federal R&D support programs are important.

Importance of Federal R&D Programs to Carry Out R&D

“Thinking overall about the benefits your firm has received from federal programs that support R&D, how important would you say these benefits have been to your firm’s ability to carry out incremental amounts of R&D?”

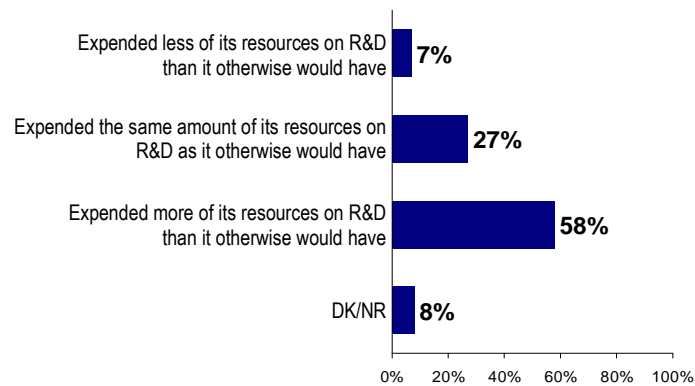


c) Impact of Federal R&D Programs in Terms of Expenditures on R&D

These respondents were also asked whether, as a result of the support received from federal programs, their firm had expended less, more, or the same amount of its resources on R&D than it otherwise would have. The majority (58 per cent) indicate their firm has expended more of its resources on R&D than it otherwise would have, and only seven per cent indicate their firm expended less of its resources on R&D as a result of federal programs.

Impact of Federal R&D Programs in Terms of Expenditures on R&D

“Overall, as a result of the support received from federal programs in relation to R&D, would you say your firm has...?”

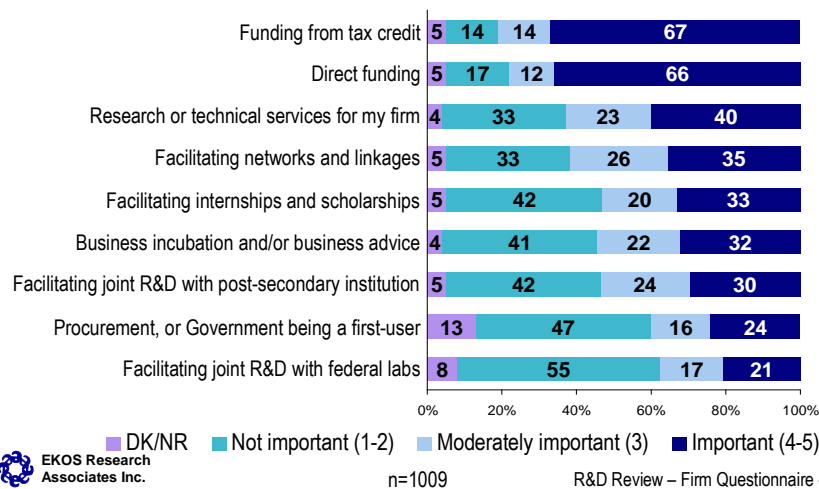


d) Importance of Various Aspects of Government Support for R&D

All respondents were asked to rate the importance of a range of aspects of federal R&D support. Funding from tax credits (67 per cent) and direct funding (66 per cent) were assigned greatest importance by the firms surveyed, followed distantly by research or technical services (40 per cent). Only about one in three feel that facilitating networks and linkages (35 per cent), facilitating internships and scholarships (33 per cent), business incubation and/or business advice (32 per cent), and facilitating joint R&D with post-secondary institutions (30 per cent) are important to their firm. Only one in four or fewer assign importance to procurement or government being a first-user (24 per cent), or facilitating joint R&D with federal labs (21 per cent).

Importance of Various Aspects of Government Support for R&D

“Thinking overall about different forms of government support for R&D, how important are each of the following for your firm?”

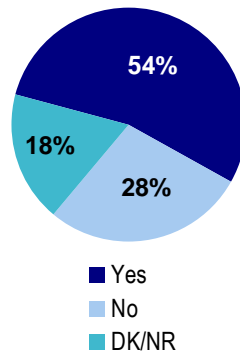


e) Gaps in Federal R&D Programs and Support

All respondents were also asked if they felt there were any gaps in the Government of Canada's support for business and commercially-oriented R&D. Over half (54 per cent) feel that there are gaps in federal support for R&D, while fewer than three in ten (28 per cent) do not feel there are any gaps in federal R&D support programs (18 per cent did not provide a response to this question).

Gaps in Federal R&D Programs and Support (1)

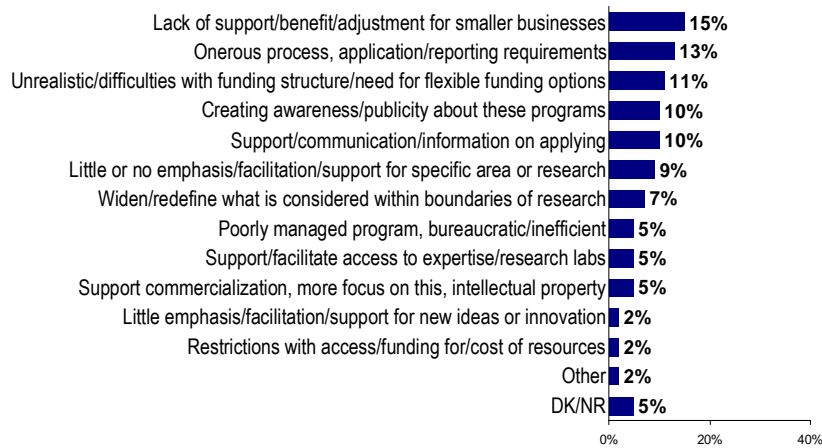
“From the perspective of your firm, are there any gaps in the Government of Canada's support for business and commercially-oriented R&D?”



Those who indicated they felt there were gaps in federal R&D support were asked, unprompted, to identify these gaps. A lack of support for smaller businesses (mentioned by 15 per cent), an onerous application and reporting process (13 per cent), and a lack of flexible funding options (11 per cent) were mentioned most often. A number of other gaps/issues were also mentioned by a fairly large proportion of these respondents: creating better awareness/publicity about these programs (10 per cent), better support/communication/information on applying for the programs (10 per cent), and a perceived lack of emphasis/facilitation/support for specific areas of research (nine per cent).

Gaps in Federal R&D Programs and Support (2)

“Please identify these gaps.” [Open – Accept multiple responses]

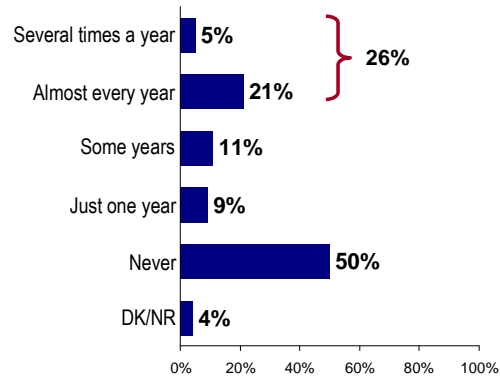


f) Frequency of Participation in Provincial R&D Program

All firms were also asked how frequently their firm participated in provincial R&D support programs. Most (50 per cent) indicated they had never participated in a provincial R&D support program, while about one in four indicate they participate in a provincial program almost every year (21 per cent) or several times a year (five per cent).

Frequency of Participation in Provincial R&D Program

“How frequently does your firm use or participate in PROVINCIAL programs, including tax credits, that support business or commercially-oriented R&D?”



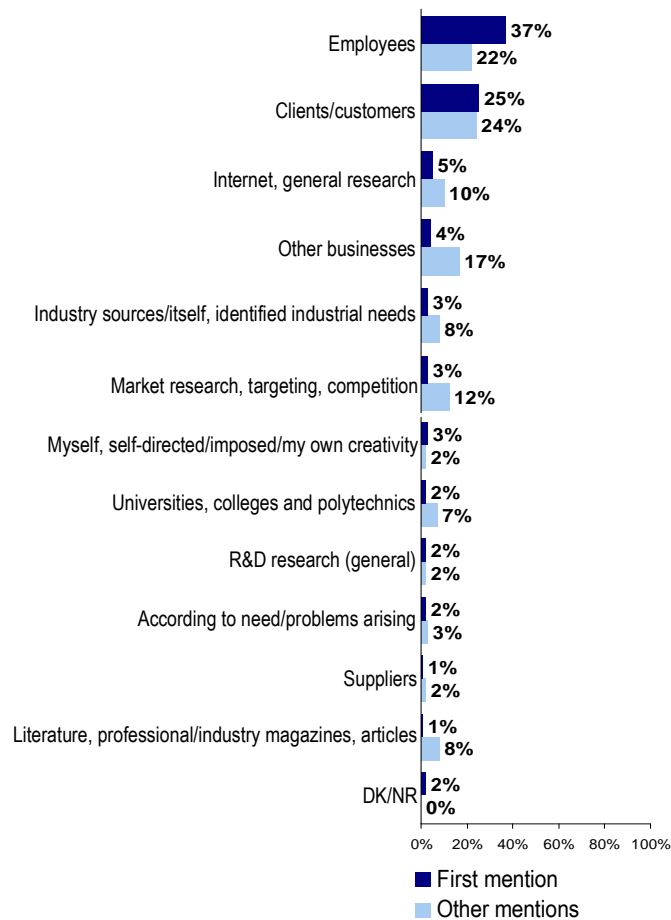
2.6 SOURCES AND OBSTACLES TO INNOVATION

a) Most Important Sources of Firms' Innovation Ideas

Surveyed firms were asked, unprompted, to identify the most important sources for their firms' innovation ideas. Employees and clients/customers were mentioned most often, although a wide range of other sources were also mentioned such as the Internet, other businesses, industry sources, and market research.

Most Important Sources of Firms' Innovation Ideas

"What are the most important sources for your firms' innovation ideas?"
[Open– Accept multiple responses]

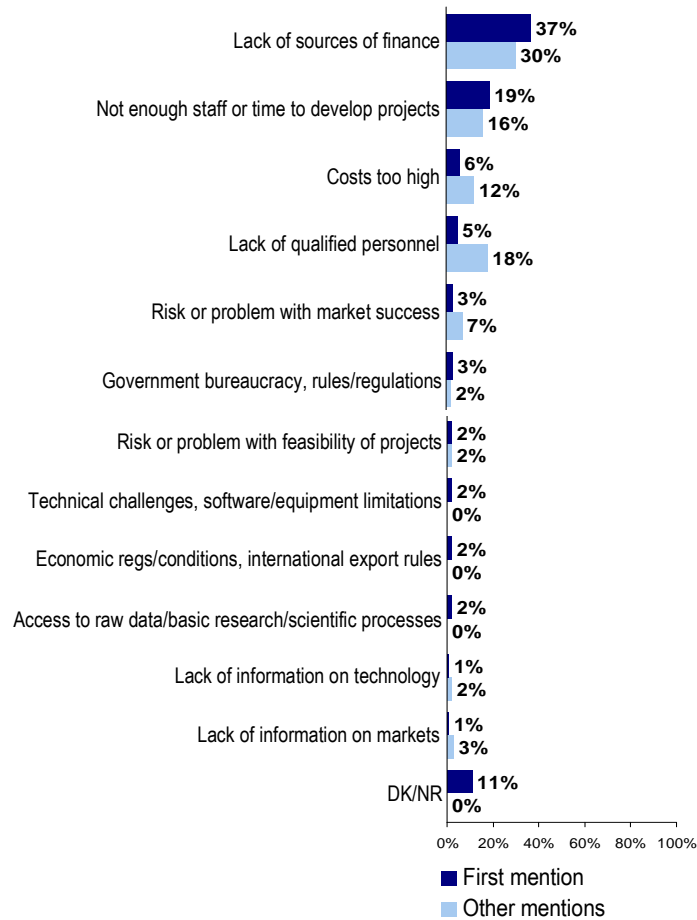


b) Obstacles to R&D Activities

All firms were also asked to identify, unprompted, the biggest obstacles to their research and development activities. A lack of sources of finance, and a lack of staff/time to develop projects are mentioned most often. Costs and a lack of qualified personnel were also mentioned as barriers by a fairly large proportion of respondents.

Obstacles to R&D Activities

“Can you tell me what have been the biggest obstacles to your research and development activities?” [Open – Accept multiple responses]

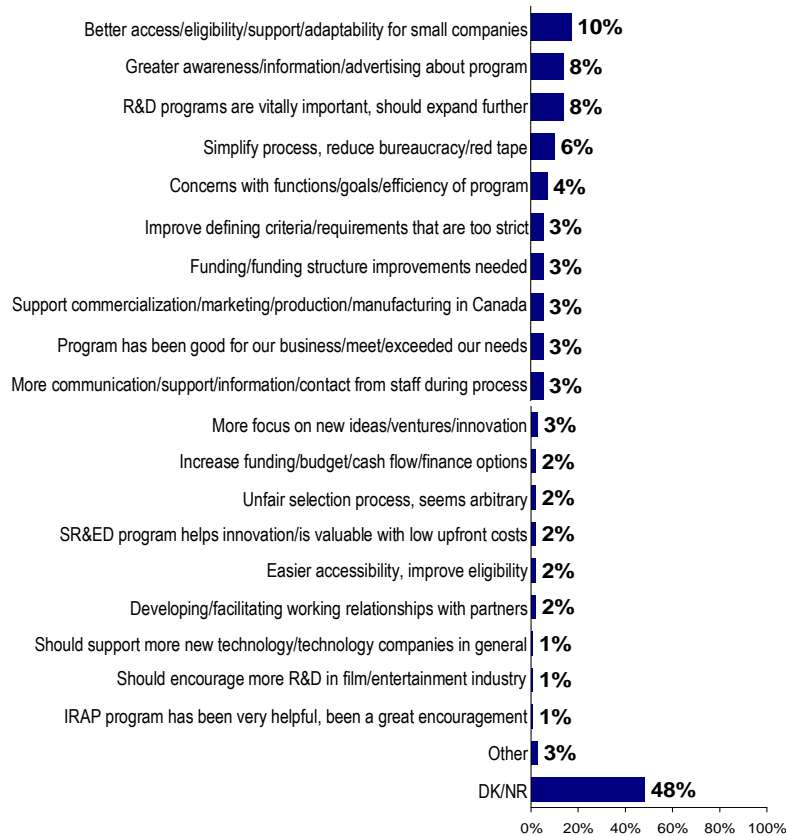


2.7 FINAL COMMENTS

Finally, all respondents were asked, unprompted, if they had any other comments related to the Government of Canada's support of business and commercially-oriented R&D. A wide array of comments were offered, with no one comment dominating the list. One in ten mentioned better access/eligibility for small businesses (10 per cent), greater awareness/advertising about the programs (eight per cent), and expansion of the programs (eight per cent) as their final comments. All other responses were mentioned by six per cent or fewer respondents (and 48 per cent did not provide a response to this question).

Final Comments

“Do you have any other comments related to the Government of Canada’s support business and commercially-oriented R&D?”
[Open– Accept multiple responses]



Looking at the valid responses to this question (i.e., those who provided a response to the question, “don’t knows” removed), better access (19 per cent), greater awareness (15 per cent), and expanding the programs (15 per cent) increase considerably as issues of importance to the firms surveyed.

Final Comments – Valid Percent

“Do you have any other comments related to the Government of Canada’s support business and commercially-oriented R&D?”
[Open– Accept multiple responses]

