

Survey of Innovation 2003

How to Read the Tables

Table of Contents

1. Table nomenclature	p. 2
2. List of standard tables	p. 3
3. Symbols	p. 5
4. Industry totals	p. 5
5. Footnotes	p. 5
6. Interpretive notes by question	p. 6

1. Table Nomenclature

A consistent nomenclature has been adopted for table identification. Each table name includes the number of the question on the questionnaire from which the table has been generated along with an indication of geographic level of tabulation

- A = Canada and provinces/territories;

and an indication of whether the data represents:

- .1 = all business units;
- .2 = innovative business units;
- .3 = non-innovative business units
- .4 = product innovative business units
- .5 = process innovative business units

The following examples present the nomenclature:

Table 1A.1 presents data

- estimates for Question 1 (1)
- for Canada and the provinces/territories (A)
- for all business units (.1).

Table 1A.2 presents data for

- estimates for Question 1 (1)
- for Canada and the provinces/territories(A)
- for innovative business units (.2).

Table 1A.3 presents data for

- estimates for Question 1 (1)
- for Canada and the provinces/territories (A)
- for non-innovative business units (.3).

2. List of Standard Tables

All respondents were required to respond to all questions. Some questions were only answered by innovators while others were only posed to non-innovators. Others were asked of the whole population without considering if they innovated or not. For further particulars of which populations were used for each question, see Table 1. the list of standard tables below.

Table 1: List of standard tables

Question	Subject	Populations for tables	Number of tables in set
1	Business unit part of a larger firm or not	All business units, innovative business units, non-innovative business units	3
2	Percentage of employees with university degrees	All business units, innovative business units, non-innovative business units	3
3	Percentage of employees engaged in R&D	All business units, innovative business units, non-innovative business units	3
4	Percentage of revenues that came from exports	All business units, innovative business units, non-innovative business units	3
5	Success factors	All business units, innovative business units, non-innovative business units	3
6	Product innovation	All business units, innovative business units	2
7	Developer of innovation	All business units, innovative business units, product innovative business units	3
8	Number of products	All business units, innovative business units, product innovative business units	3
9	World first vs. Canada first	All business units, innovative business units, product innovative business units	3
9.1	World first vs. Canada first	All business units, innovative business units,	2
10	Innovative products for mining or forestry / forest products industries	All business units, innovative business units, product innovative business units	3
11	Percentage of revenues from innovative products	All business units, innovative business units, product innovative business units	3
12	Degree of novelty of products	All business units, innovative business units, product innovative business units	3
13	Process innovation	Data incorporated into table 6	--
14	Developer of innovation	All business units, innovative business units, process innovative business units	3

15	Number of processes	All business units, innovative business units, process innovative business units	3
16	World first vs. Canada first	All business units, innovative business units, process innovative business units	3
17	Degree of novelty of processes	All business units, innovative business units, process innovative business units	3
18	Incomplete or abandoned innovation	All business units, innovative business units, non-innovative business units	3
19	Reasons for non-innovation	Non-innovative business units	1
20	Innovation activities	Innovative business units	1
21	Innovation activities as a percentage of expenditures	Innovative business units	1
22	Sources of information	Innovative business units	1
23	Cooperative and Collaborative arrangements	Innovative business units	1
24	Type and location of partner	Innovative business units	1
25	Problems and obstacles	Innovative business units	1
26	Impacts of innovation	Innovative business units	1
27	Protection of intellectual property	All business units, innovative business units, non-innovative business units	3
28	Percentage of products (by revenue) protected by formal IP protection (patents, etc.)	All business units, innovative business units, non-innovative business units	3
29	Percentage total revenues from mining and forestry and / or forest products industries	All business units, innovative business units, non-innovative business units	3
30	Biotech clients	All business units, innovative business units, non-innovative business units	3
31	Nanotech clients	All business units, innovative business units, non-innovative business units	3
32	Geomatics activities	All business units, innovative business units, non-innovative business units	3
33	Government support programs	All business units, innovative business units, non-innovative business units	3

3. Symbols

The following Statistics Canada standard symbols are used in the tables:

... not applicable

x suppressed to meet the confidentiality requirements of the Statistics Act

4. Industry Totals

In the statistical tables, estimates are generated for each industry (4, 5 or 6 digit NAICS) that was sampled. There is an internationally agreed definition of Information and Communication Technology (ICT) industries. All ICT industries were sampled. As a result, an estimate for Total ICT Service Industries has been produced.

For groups of industries where only selected industries were sampled no totals have been produced. These include Selected Professional, Scientific and Technical Services; Selected Natural Resource Support Services; and Selected Transportation Industries.

In two cases, sampling at the more detailed NAICS level resulted in the ability to produce estimates at the higher NAICS aggregation. In these cases, totals have been produced in the tables. For the industries Management Consulting Services (54161), Environmental Consultations (54162) and Other Scientific and Technical Consulting Services (54169) an estimate for Total Management, Scientific and Technical Consulting services (5416) has been produced. For the industries R&D in Physical, Engineering and Life Sciences (54171) and R&D in the Social Sciences and Humanities (54172) an estimate for Total Scientific Research and Development Services (5417) has been produced.

5. Footnotes

The following four footnotes are in the tables:

¹ Computer systems design and related services is included in the category ICT service industries and in the category Selected professional, scientific and technical services

² Geophysical surveying and mapping is included in the category Selected professional, scientific and technical services and in the category Selected natural resource support services

³ Surveying and mapping (except geophysical) is included in the category Selected professional, scientific and technical services and in the category Selected natural resource support services

⁴ Establishments were asked to indicate their agreement to a series of impacts on a scale of 1-5 where 1 is strongly disagree and 5 is strongly agree. Establishments indicating 4 or 5 for a given impact are considered to agree.

6. Interpretive Notes by Question

Interpretive Notes Tables for Question 1

There are three tables for Question 1 at each level of geography. Table 1A.1 is for all business units, Table 1A.2 is for all innovative business units and Table 1A.3 is for non-innovative business units in selected service industries.

The following contains an explanation of how to read the tables for Question 1 using the estimate for all business units in Canada (Table 1A.1) and ‘Total ICT Service Industries’ as an example.

- For ‘Total ICT Service Industries’, 40.3% of all establishments indicated that they were part of a larger firm.
- Of these 12.6% reported their sole purpose was to serve the other business units in the firm. This means that of all establishments in total ICT service industries, 5.1% (or 12.6% of 40.3%) reported their sole purpose was to serve the other business units in the firm.

Interpretive Notes Tables for Question 2

There are three tables for Question 2 at each level of geography. Table 2A.1 is for all business units, Table 2A.2 is for all innovative business units and Table 2A.3 is for non-innovative business units in selected service industries.

The following contains explanations of how to read the tables for Question 2 using 'Total ICT service industries' as an example.

In Table 2A.1, for 'Total ICT service industries', the business units reported that, in 2003,

- 7.6% of all establishments in ICT service industries had no employees who were university graduates;
- 5.5% of establishments reported between one and nine percent of their employees were university graduates;
- 19.9% of establishments reported 10 to 24% of employees were university graduates;
- 13.1% of establishments reported 25 to 49% of employees were university graduates;
- 21.5% of establishments reported 50 to 74% of employees were university graduates; and,
- 32.4% of establishments reported that 75% or more of their employees were university graduates.

Interpretive Notes Tables for Question 3

There are three tables for Question 3 at each level of geography. Table 3A.1 is for all business units, Table 3A.2 is for all innovative business units and Table 3A.3 is for non-innovative business units in selected service industries.

The following contains explanations of how to read the tables for Question 3 using 'Total ICT service industries' as an example.

In Table 3A.1, for 'Total ICT service industries', the business units reported that, in 2003,

- 34.8% of all establishments in ICT service industries had no employees who were involved in research and development activities;
- 13.0% of establishments reported between one and nine percent of their employees were involved in research and development activities;
- 20.7% of establishments reported 10 to 24% of employees were involved in research and development activities;
- 16.1% of establishments reported 25 to 49% of employees were involved in research and development activities;
- 10.0% of establishments reported 50 to 74% of employees were involved in research and development activities; and,
- 5.3% of establishments reported that 75% or more of their employees were involved in research and development activities.

Interpretive Notes Tables for Question 4

There are three tables for Question 4 at each level of geography. Table 4A.1 is for all business units, Table 4A.2 is for all innovative business units and Table 4A.3 is for non-innovative business units in selected service industries.

The following contains explanations of how to read the tables for Question 4 using 'Total ICT service industries' as an example.

In Table 4A.1, for 'Total ICT service industries', the business units reported that, in 2003,

- 38.4% of all establishments in ICT service industries had no revenues that came from the sale of products (goods or services) to clients outside of Canada (exports);
- 21.1% of establishments reported between one and nine percent of revenues came from the sale of products (goods or services) to clients outside of Canada (exports);
- 12.0% of establishments reported 10 to 24% of revenues came from the sale of products (goods or services) to clients outside of Canada (exports);
- 4.6% of establishments reported 25 to 49% of revenues came from the sale of products (goods or services) to clients outside of Canada (exports);
- 5.4% of establishments reported between 50 to 74% of revenues came from the sale of products (goods or services) to clients outside of Canada (exports); and,
- 18.4% of establishments reported 75% or more of revenues came from the sale of products (goods or services) to clients outside of Canada (exports).

Interpretive Notes Tables for Question 5

There are three tables for Question 5 at each level of geography. Table 5A.1 is for all business units, Table 5A.2 is for all innovative business units and Table 5A.3 is for non-innovative business units in selected service industries.

The following contains an explanation of how to read the tables for Question 5 using Table 5.1 as an example. The tables present industries by success factors.

The following contains an explanation of how to read these tables using Table 5A.1 as an example.

For ‘All business units in ICT service industries’ 98.5% of business units indicated that satisfying existing clients was relevant to the success of their firm and 1.5% indicated it was not relevant. Of the business units which indicated it was relevant:

- 0.0% indicated it had low importance (level 1);
- 0.0% indicated that it was of moderately low importance (level 2);
- 2.3% indicated medium importance (level 3);
- 14.6% indicated moderately high importance (level 4); and
- 81.5% indicated high importance (level 5).
- 1.5% indicated this was not relevant.

Interpretive Notes Tables for Question 6

There are two tables for Question 6 at each level of geography. Table 6A.1 is for all business units and Table 6A.2 is for all innovative business units in selected service industries. There is no table for non-innovative business units.

The tables present industries by percentage of innovators by type of innovator (all innovators, product innovators, process innovators, both product and process innovators, product only innovators and process only innovators).

The following contains an explanation of how to read these tables using Table 6A.1 as an example.

For 'All business units in ICT service industries', 78.2% of business units indicated that they had introduced new or significantly improved products (goods or services) onto the market during the three year period, 2001 to 2003. Of all ICT business units:

- 71.3% were product innovators;
- 44.1% were process innovators;
- 37.2% were both product and process innovators;
- 34.1% were product only innovators; and
- 6.9% were process only innovators.

Interpretive Notes Tables for Question 7

There are three tables for Question 7 at each level of geography. Table 7A.1 is for all business units, Table 7A.2 is for all innovative business units and Table 7A.4 is for product innovative business units in selected service industries.

The tables present the source of product innovation by industry.

The following contains an explanation of how to read these tables using Table 7A.1 as an example.

Of all ICT business units:

- 51.0% developed the new or significantly improved products (goods or services) within the business unit;
- 13.9% developed the new or significantly improved products (goods or services) in co-operation with other business units or organizations; and
- 6.4% obtained the new or significantly improved products (goods or services) from other business units or organizations.

For 'All business units in ICT service industries', 71.3% (51.0% + 13.9% + 6.4%) of business units indicated that they were product innovators (note that this figure is the same as the percentage of all business units which were product innovators from Table 6A.1 and who therefore responded to question 7).

Interpretive Notes Tables for Question 8

There are three tables for Question 8 at each level of geography. Table 8A.1 is for all business units, Table 8A.2 is for all innovative business units and Table 8A.4 is for product innovative business units in selected service industries.

The tables present the number of new or significantly improved products (goods or services) businesses introduced onto the market during the three years, 2001 to 2003.

The following contains an explanation of how to read these tables using Table 8A.1 as an example.

In Table 8A.1, for all establishments in 'Total ICT service industries', for the three years from 2001 to 2003,

- 28.7% of establishments reported no new or significantly improved products (goods or services) were introduced;
- 30.1% of establishments reported one or two new or significantly improved products (goods or services) were introduced;
- 32.0% of establishments reported three to nine new or significantly improved products (goods or services) were introduced;
- 7.9% of establishments reported 10 to 99 new or significantly improved products (goods or services) were introduced; and
- 1.3% of establishments reported 100 or more new or significantly improved products (goods or services) were introduced.

Interpretive Notes Tables for Question 9

Users should note that if the most important innovation was a world first it was also a first in Canada and a first for the firm. If the most important innovation was not a world first but was a first in Canada, then it was also a first for the firm.

There are four tables for Question 9 for each level of geography. Table 9A.1 tabulates novelty, lack of novelty and absence of knowledge regarding novelty of product for all business units. Table 9A.1.1 provides a measure of novelty of all innovations product and process (thereby combining data from Questions 9 and 16) for all business units. Table 9A.2 tabulates novelty, lack of novelty and absence of knowledge regarding novelty of product for all innovative business units. Table 9A.2.1 provides a measure of novelty of all innovations product and process (thereby combining data from Questions 9 and 16) for all innovative business units.

The following contains an explanation of how to read Table 9A.1, using ‘Total ICT service industries’, as an example.

In Table 9A.1, for all business units in ‘Total ICT service industries’, for the three years from 2001 to 2003,

- 29.4% indicated that at least one of their product innovations was a first in Canada;
- 21.9% indicated that none of their product innovations was a first in Canada;
- 20.0% indicated that they did not know whether any of their product innovations was a Canada first or not.
- 15.6% indicated that at least one of their product innovations was a world first;
- 29.0% indicated that none of their product innovations was a world first;
- 26.7% indicated that they did not know whether any of their product innovations was a world first or not.

Note that the percentage of business units indicating a world first, no world first or unknown if world first adds up to the percentage of product innovators on Table 6A.1, as do the parallel figures for Canada firsts.

The following contains an explanation of how to read Table 9A.1.1, using 'Total ICT service industries'.

Table 9A.1.1 provides information on the degree of novelty of any of the business units' innovative **products or processes**.

In Table 9A.1.1, for all business units in 'Total ICT service industries', for the three years 2001 to 2003,

- 31.2% indicated that at least one of their product or process innovations was a world first;
- 16.3% indicated that at least one of their product or process innovations was a world first.

Interpretive Notes Tables for Question 10

There are three tables for Question 10 at each level of geography. Table 10A.1.1 provides percentage of business units whose new or significantly improved products (goods or services) were sold to the mining industry and the forestry and/or forest product industry for all business units. Table 10A.2 provides the percentage of business units whose new or significantly improved products (goods or services) were sold to the mining industry and the forestry and/or forest product industry for all innovative business units. Table 10A.4 provides the percentage of business units whose new or significantly improved products (goods or services) were sold to the mining industry and the forestry and/or forest product industry for all product-innovative business units.

The following contains an explanation of how to read the table 10A.1 using ‘Total ICT service industries’ as an example.

In Table 10A.1, for ‘Total ICT service industries’,

- 3.7% of all business units indicated that they had sold new or significantly improved products (goods or services) to the mining industry; and
- 6.4% of all business units indicated that they had sold new or significantly improved products (goods or services) to the forestry and/or forest products industry.

Interpretive Notes Tables for Question 11

There are three tables for Question 11 at each level of geography. Table 11A.1 is for all business units, Table 11A.2 is for all innovative business units and Table 11A.4 is for product innovative business units in selected service industries.

The tables present the percentage of revenue in 2003 that was generated by new or significantly improved products (goods or services) introduced by the business unit during the period 2001 to 2003.

The following contains an explanation of how to read these tables using Table 11A.1 as an example. In Table 11A.1, for 'Total ICT service industries'

- 3.2% of all business units reported no revenues from the sale of new or significantly improved products;
- 10.7% of all business units reported that one to nine percent of their revenues came from new or significantly improved products;
- 23.2% of all business units reported that 10 to 24% of their revenues came from new or significantly improved products;
- 13.3% of all business units reported that 25 to 49% of their revenues came from new or significantly improved products;
- 8.1% of all business units reported that 50 to 74% of their revenues came from new or significantly improved products; and
- 12.9% of all business units reported that 75 to 100% of their revenues came from new or significantly improved products.

Note that these figures add up to 71.4% which represents all innovative business units (as seen in Table 6A.1). In the case of Table 11A.2, the figures add up to 91.2% which represents the proportion of product innovators out of all innovative business units (as seen in Table 6A.2).

Interpretive Notes Tables for Question 12

There are three tables for Question 12 at each level of geography. Table 12A.1 is for all business units, Table 12A.2 is for all innovative business units and Table 12A.4 is for product innovative business units in selected service industries.

The tables present the perceived degree of novelty of the most innovative product introduced to the market during the three year period, 2001 to 2003. The degree of novelty is measured on a 5-point scale with 1 representing “slightly new” and 5 representing “totally new”.

The following contains an explanation of how to read Table 12A.1 using ‘Total ICT service industries’ as an example.

In Table 12A.1 for ‘Total ICT service industries’

- 4.4% of all business units reported that their most innovative product (good or service) was “slightly new” (level 1) ;
- 10.3% of all business units reported that their most innovative product (good or service) was at level 2;
- 22.3% of all business units reported that their most innovative product (good or service) was at level 3;
- 21.3% of all business units reported that their most innovative product (good or service) was at level 4; and
- 13.0% of all business units reported that their most innovative product (good or service) was “totally new” (level 5).

Note that these percentages again sum to 71.3%, the proportion of business units which reported product innovation (Table 6A.1).

Interpretive Notes
Tables for Question 13

There are no tables for Question 13, rather, the data for this question have been combined with the data for Question 6 and are incorporated into Table 6A.1 and Table 6A.2.

Interpretive Notes Tables for Question 14

There are three tables for Question 14 at each level of geography. Table 14A.1 is for all business units, Table 14A.2 is for all innovative business units and Table 14A.5 is for process innovative business units in selected service industries.

The tables present who developed new or significantly improved processes.

The following contains an explanation of how to read the tables for Question 14 using Table 14A.1 as an example.

In Tables 14A.1, for “All ICT service industries”, during 2001 to 2003

- 31.4% of all business units developed new or significantly improved new or significantly improved processes (including improved ways of delivering goods or services) within the business unit;
- 7.3% developed the new or significantly improved new or significantly improved processes (including improved ways of delivering goods or services) in co-operation with other business units or organizations; and
- 5.4% obtained the new or significantly improved new or significantly improved processes (including improved ways of delivering goods or services) from other business units or organizations.

For ‘All business units in ICT service industries’, in Table 6A.1, 44.1% of business units indicated that they were process innovators. Table 14A.1 provides a breakdown of this group of business units ($31.4\% + 7.3\% + 5.4\% = 44.1\%$ of all business units in ICTs).

Interpretive Notes Tables for Question 15

There are three tables for Question 15 at each level of geography. Table 15A.1 is for all business units, Table 15A.2 is for all innovative business units and Table 15A.5 is for process innovative business units in selected service industries.

The tables present the number of new or significantly improved processes (including improved ways of delivering goods or services) business units introduced onto the market during the three years, 2001 to 2003.

The following contains an explanation of how to read these tables using Table 15A.1 as an example.

In Table 15A.1, for 'Total ICT service industries', of all business units, during the three years from 2001 to 2003,

- 55.9% reported introducing no new or significantly improved processes;
- 19.0% reported introducing 1 or 2 new or significantly improved processes;
- 14.9% reported introducing 3 to 9 new or significantly improved processes;
- 10.2% reported introducing 10 to 99 new or significantly improved processes; and
- 0.0% reported introducing 100 or more new or significantly improved processes.

Interpretive Notes Tables for Question 16

Users should note that if an innovation was a world first, it was also a first in Canada.

There are three tables for Question 16 for each level of geography. Table 16A.1 tabulates novelty, lack of novelty and absence of knowledge regarding novelty of a process for all business units. Table 16A.2 tabulates novelty, lack of novelty and absence of knowledge regarding novelty of process for all innovative business units. Table 16A.5 tabulates novelty, lack of novelty and absence of knowledge regarding novelty of process for process innovative business units.

The following contains an explanation of how to read Table 16A.1, using ‘Total ICT service industries’ as an example.

In Table 16A.1, for ‘Total ICT service industries’, of all business units

- 5.7% indicated that at least one of their process innovations was a first in Canada;
- 24.0% indicated that none of their process innovations were a first in Canada
- 14.3% indicated that they did not know whether any of their process innovations were Canada first or not;
- 1.7% indicated that at least one of their process innovations was a world first;
- 25.9% indicated that none of their process innovations were a world first
- 16.5% indicated that they did not know whether any of their process innovations were world first or not;

Note that the percentage of business units indicating a world first, no world first or unknown if world first, adds up to the percentage of process innovators on Table 6A.1, as do the parallel figures for Canada firsts.

Interpretive Notes Tables for Question 17

There are three tables for Question 17 at each level of geography. Table 17A.1 is for all business units, Table 17A.2 is for all innovative business units and Table 17A.5 is for process innovative business units in selected service industries.

The following contains an explanation of how to read Table 17A.1 using ‘Total ICT service industries’ as an example. The tables present the perceived degree of novelty of the most innovative process introduced during the three year period, 2001 to 2003. The degree of novelty is measured on a 5-point scale with 1 representing “slightly new” and 5 representing “totally new”.

In Table 17A.1 for ‘Total ICT service industries’, of all innovative business units

- 5.5% of all business units reported that their most innovative process (good or service) was “slightly new” (level 1) ;
- 6.4% of all business units reported that their most innovative process (good or service) was at level 2;
- 18.3% of all business units reported that their most innovative process (good or service) was at level 3;
- 10.8% of all business units reported that their most innovative process (good or service) was at level 4; and
- 3.1% of all business units reported that their most innovative process (good or service) was “totally new” (level 5).

Note that these percentages again sum to 44.1%, the proportion of business units which reported process innovation (Table 6A.1).

Interpretive Notes Tables for Question 18

There are three tables for Question 18 at each level of geography. Table 18A.1 is for all business units, Table 18A.2 is for all innovative business units, and Table 18A.3 is for all non-innovative business units in selected service industries.

The tables present data on unsuccessful attempts at innovation and incomplete attempts at innovation, either new or significantly improved products (goods or services) or new or significantly improved processes (including improved ways of delivering goods or services) during the three-year interval, 2001 to 2003.

The following contains an explanation of how to read Table 18A.1 using 'Total ICT service industries' as an example.

In Table 18A.1 for all 'Total ICT service industries', of all business units

- 45.6% indicated that they had an unsuccessful or not yet completed project to develop or introduce new or significantly improved products (goods or services) or processes (including improved ways of delivering goods or services) during the period 2001 to 2003.

Interpretive Notes Tables for Question 19

There is one table for Question 19 at each level of geography. Table 19A.3 is for all non-innovative business units in selected service industries.

The tables present data on reasons why non-innovative business units did not develop or introduce new or significantly improved products or processes during the three year period, 2001 to 2003.

The following contains an explanation of how to read Table 19A.3 using 'Total ICT service industries', as an example.

In Table 19A.3, for 'Total ICT service industries', of all non-innovators

- 35.1% indicated they had carried out innovation projects prior to 2001 to 2003;
- 31.4% indicated they did not perceive any market demand for new products;
- 31.1% indicated they did not have sufficient funds to carry out innovation projects;
- 12.7% indicated they did not have trained staff to carry out innovation projects; and
- 29.1% indicated they had other reasons for not undertaking innovation projects during the three year period, 2001 to 2003.

Note these figures relate to that percentage of business units which indicated they were non-innovators. The figures do not add up to 100% as a business unit could indicate more than one reason for not engaging in innovation.

Interpretive Notes Tables for Question 20

There is one table for Question 20 at each level of geography. Table 20A.2 is for all innovative business units in selected service industries.

The tables present data on the types of innovation activities that were undertaken by the firm in the three year period, 2001 to 2003.

The following contains an explanation of how to read Table 20A.2 using ‘Total ICT service industries’, as an example.

In Table 20A.2, for the innovative business units in ‘Total ICT service industries’,

- 80.5% engaged in internal research and development (R&D);
- 27.5% reported external research and development (R&D);
- 69.8% reported that they acquired equipment or machinery;
- 47.6% reported that they acquired other external knowledge (rights to use patents and non-patented inventions, licenses, trademarks, etc.);
- 77.5% engaged in training related to innovation;
- 75.9% engaged in marketing activities directly aimed at the development or introduction of a new or significantly improved product (good or service).

Note that business units can select as many innovation activities as appropriate so the total does not add up to 100%.

Interpretive Notes Tables for Question 21

There is one table for Question 21 at each level of geography. Table 21A.2 is for all innovative business units in selected service industries.

The tables present the percentage of expenditures which were devoted to innovation activities for the three year period 2001 to 2003.

The following contains an explanation of how to read these tables using Table 21A.2 as an example.

In Table 21A.2, for the innovative business units in 'Total ICT service industries', during the period 2001 to 2003,

- 9.8% of establishments reported no portion of total expenditures was devoted to innovation activities;
- 29.1% of establishments reported that 1 to 9% of total expenditures were devoted to innovation activities;
- 22.3% of establishments reported that 10 to 24% of total expenditures were devoted to innovation activities;
- 22.6% of establishments reported that 25 to 49% of total expenditures were devoted to innovation activities;
- 9.1% of establishments reported that 50 to 74% of total expenditures were devoted to innovation activities; and
- 7.1% of establishments reported that 75% or more of total expenditures were devoted to innovation activities.

Interpretive Notes Tables for Question 22

There is one table for Question 22. Table 22A.2 is for all innovative business units in selected service industries.

The table indicates the relative importance of particular sources of information used by the business unit which suggested or contributed to the development of new or significantly improved products (good or services) or processes (including improved ways of delivering good or services). The degree of importance is measured on a 5-point scale with 1 representing “low importance” and 5 representing “high importance”.

The following contains an explanation of how to read the tables for Question 22 using Table 22A.2, ‘Total ICT service industries’, as an example.

In Table 22A.2, for all innovative business units in ‘Total ICT service industries’

- 6.7% indicated that R&D staff was of low importance (level 1) ;
- 3.6% indicated R&D staff was at level 2;
- 10.0% indicated R&D staff was at level 3;
- 25.1% indicated R&D staff was at level 4;
- 37.1% indicated that R&D staff was of high importance as a source of information (level 5); and
- 17.6% indicated that the “R&D staff” was not a relevant source of information for innovation activities.

Note that these six categories add up to 100% of all innovative business units in ‘Total ICT service industries’.

Interpretive Notes Tables for Question 23

There is one table for Question 23. Table 23A.2 is for all innovative business units in selected service industries.

The table contains data on the proportion of innovative business units which engaged in co-operative or collaborative arrangements and the reasons for engaging in co-operative or collaborative arrangements.

The following contains an explanation of how to read the tables for Question 23 using Table 23A.2, 'Total ICT service industries', as an example.

In Table 23A.2, for 'Total ICT service industries',

- 55.0% of innovative business units indicated that they were involved in some sort of co-operative or collaborative arrangement with other business units or organizations (including other business units of the firm) in order to develop new or significantly improved products (goods or services) and/or processes (including new ways of delivering goods or services).

Of these 55.0% of innovative business units engaging in a co-operative or collaborative arrangement:

- 57.5% indicated that they engaged in these activities in order to share costs;
- 42.9% indicated that they engaged in these activities in order to spread risk;
- 41.5% indicated that they engaged in these activities in order to access research and development (R&D);
- 40.0% indicated that they engaged in these activities in order to facilitate prototype development;
- 16.0% indicated that they engaged in these activities in order to facilitate scaling-up the production process;
- 63.8% indicated that they engaged in these activities in order to access critical expertise;
- 48.2% indicated that they engaged in these activities in order to access new markets;
- 33.7% indicated that they engaged in these activities in order to access new distribution channels;
- 4.7% indicated that they engaged in these activities for "other reasons".

Note that this means the following, as an example

- 31.8% (55% x 57.9%) of all innovative business units indicated that they engaged in these activities in order to share costs.

Interpretive Notes Tables for Question 24

There is one table for Question 24. Table 24A.2 is for all innovative business units in selected service industries.

The table contains data on the percentage of business units in collaborative arrangements and the type and location of organization(s) with which the business unit collaborated.

The following contains an explanation of how to read the tables for Question 24 using Table 24A.2, 'Total ICT service industries', as an example.

In Table 24A.2, for 'Total ICT service industries',

- 55.0% of innovative business units indicated that they engaged in a co-operative or collaborative arrangement (same as Table 23A.2).

Of these 55.0% which engaged in co-operative or collaborative arrangements:

- 50.1% collaborated with another business units within the firm
- Of which:
 - 41.8% were located within 100 km;
 - 64.8% were located in the rest of Canada;
 - 41.9% were located in the United States;
 - 10.6% were located in Mexico;
 - 2.7% were located in Central or South America;
 - 24.7% were located in Europe;
 - 21.9% were located in the Pacific rim;
 - 8.1% were located in other countries;

(It is possible to have such a breakdown for all other collaborators.)

- 88.2% collaborated with clients or customers;
- 72.1% collaborated with suppliers of equipment, materials, components or software;
- 35.1% collaborated with competitors;
- 49.5% collaborated with consultants;
- 13.1% collaborated with commercial laboratories or R&D enterprises;
- 29.3% collaborated with universities or other higher learning institutions;
- 8.5% collaborated with federal government research institutes;
- 4.4% collaborated with provincial/territorial government research institutes;
- 5.9% collaborated with private non-profit research institutes;
- 35.3% collaborated with industrial associations;
- 2.1% collaborated with other types of organizations.

This means, for instance, that 11.5% (55.0% of 50.1% of 41.8%) of all innovative business units engaged in a collaborative arrangement with another business unit of the firm which was located within 100 km of the responding business unit.

Interpretive Notes Tables for Question 25

There is one table for Question 25. Table 25A.2 is for all innovative business units in selected service industries.

The table contains data on the degree of perceived importance for various problems and obstacles the business units faced that slowed down or caused problems when developing new or significantly improved products (goods or services) or processes (including improved ways of delivering goods or services) during the period 2001 to 2003. The degree of importance is measured on a 5-point scale with 1 representing “low importance” and 5 representing “high importance”.

The following contains an explanation of how to read the table for Question 25 using Table 25A.2, ‘Total ICT service industries’, as an example.

In Table 25A.2, for ‘Total ICT service industries’ with respect to risks related to the feasibility of the innovative projects:

- 7.8% indicated this was of low importance (level 1);
- 15.3% indicated this was of moderately low importance (level 2);
- 28.7% indicated this was of medium importance (level 3);
- 26.3% indicated this was of moderately high importance (level 4);
- 10.4% indicated this was of high importance (level 5);
- 11.6% indicated this was not relevant;

These six categories add up to 100% and account for all innovative business units in each industry.

Interpretive Notes Tables for Question 26

There is one table for Question 26. Table 26A.2 is for all innovative business units in selected service industries.

The table contains data on the degree of perceived impact of as a result of the business unit having developed new or significantly improved products (goods or services) or processes (including improved ways of delivering goods or services), during the period 2001 to 2003. Data in the table report those who indicated agreement, strong agreement or not relevant to each measure of impact.¹

The following contains an explanation of how to read the table for Question 26 using Table 26A.2, ‘Total ICT service industries’, as an example.

In Table 26A.2, for ‘Total ICT service industries’, with respect to impact of innovation, specifically, increased business unit’s productivity:

- 45.2% reported that they agreed this was an impact of innovation on their business unit (level 4 and level 5);
- 14.6% reported that they strongly agreed this was an impact of innovation on their business unit (level 5);
- 17.2% reported that the impact of increasing the business unit’s productivity was not relevant to their business unit.

These three categories do not add up to 100% and do not account for all innovative business units in each industry.

¹ Note that there were differences in the wording of the English and the French questionnaires. The English questionnaire asked respondents to indicate a range of responses from “strongly disagree” to “strongly agree”. By contrast, the French questionnaire asked respondents to indicate a range of responses from “faiblement d’accord” to “fortement d’accord”, or from “weakly agree” to “strongly agree”. It was decided to release the three categories noted above as they would be comparable but to not release the other three categories since their comparability was questionable.

Interpretive Notes

Question 27

There are three tables for Question 27. Table 27A.1 is for all business units, Table 27A.2 is for all innovative business units and Table 27A.3 is for all non-innovative business units, in selected service industries.

The tables contain data on the use of various means of intellectual property protection, including both formal and strategic methods. Business units could select as many of these methods as appropriate.

The following contains an explanation of how to read the table for Question 27 using Table 27A.1, ‘Total ICT service industries’, as an example.

In Table 27A.1 for all business units in ‘Total ICT service industries’, in order to protect intellectual property,

- 16.1% reported using patents;
- 11.7% reported using registration of design patterns;
- 38.1% reported using trademarks;
- 35.2% reported using copyright;
- 75.0% reported using confidentiality agreements;
- 52.1% reported using secrecy;
- 34.7% reported using complexity of design;
- 57.9% reported using the lead time advantage over competitors; and
- 3.3% reported using “other methods”.

These figures do not add up to 100% because business units could select more than one of these methods.

Interpretive Notes Tables for Question 28

There are three tables for Question 28. Table 28A.1 is for all business units, Table 28A.2 is for all innovative business units and Table 28A.3 is for all non-innovative business units, in selected service industries.

The tables contain data on the percentage of products (goods or services) protected by patents, trademarks or copyrights (in terms of their contribution to total revenues in 2003).

The following contains an explanation of how to read the tables for Question 28 using Table 28A.1 as an example. In Table 28A.1 for all business units in 'Total ICT service industries', for the year 2003,

- 53.1% of establishments reported that none of their products (goods or services), in terms of their contribution to total revenues, were protected by patents, trademark or copyright;
- 6.2% of establishments reported that one to nine percent of their revenues came from products (goods or services) that were protected by patents, trademark or copyright;
- 8.9% of establishments reported that 10 to 24% of their revenues came from products (goods or services) that were protected by patents, trademark or copyright;
- 5.7% of establishments reported that 25 to 49% of their revenues came from products (goods or services) that were protected by patents, trademark or copyright;
- 3.9% of establishments reported that 50 to 74% of their revenues came from products (goods or services) that were protected by patents, trademark or copyright; and
- 22.1% of establishments reported that 75% or more of their revenues came from products (goods or services) that were protected by patents, trademark or copyright.

Interpretive Notes Tables for Question 29

There are three tables for Question 29. Table 29A.1 is for all business units, Table 29A.2 is for all innovative business units and Table 29A.3 is for all non-innovative business units, in selected service industries.

The tables contain data on the percentage of total revenues in 2003 from the sale of products (goods or services) to mining and forestry and/or forest products industries.

The following contains an explanation of how to read the tables for Question 29 using Table 29A.1 as an example. In Table 29A.1 for all business units in 'Total ICT service industries', for the year 2003,

- 92.5% of establishments reported that they received no revenues from the sale of products (goods or services) to the mining industry;
- 5.1% of establishments reported that they received one to nine percent of total revenues from the sale of products (goods or services) to the mining industry;
- 2.0% of establishments reported that they received 10 to 24% of total revenues from the sale of products (goods or services) to the mining industry;
- 0.1% of establishments reported that they received 25 to 49% of total revenues from the sale of products (goods or services) to the mining industry;
- 0.0% of establishments reported that they received 50 to 74% of total revenues from the sale of products (goods or services) to the mining industry; and
- 0.2% of establishments reported that they received one to nine percent of total revenues from the sale of products (goods or services) to the mining industry.
- 88.5% of establishments reported that they received no revenues from the sale of products (goods or services) to the forestry and/or forest products industry;
- 8.0% of establishments reported that they received one to nine percent of total revenues from the sale of products (goods or services) to the forestry and/or forest products industry;
- 2.1% of establishments reported that they received 10 to 24% of total revenues from the sale of products (goods or services) to the forestry and/or forest products industry;
- 0.3% of establishments reported that they received 25 to 49% of total revenues from the sale of products (goods or services) to the forestry and/or forest products industry;
- 0.4% of establishments reported that they received 50 to 74% of total revenues from the sale of products (goods or services) to the forestry and/or forest products industry; and
- 0.6% of establishments reported that they received one to nine percent of total revenues from the sale of products (goods or services) to the forestry and/or forest products industry.

Interpretive Notes

Question 30

There are three tables for Question 30. Table 30A.1 is for all business units, Table 30A.2 is for all innovative business units and Table 30A.3 is for all non-innovative business units, in selected service industries.

The tables contain data on the percentage of business units providing products (goods or services) to business units or organizations engaged in biotechnology.

The following contains an explanation of how to read the tables for Question 30 using Table 30A.1 as an example.

- In Table 30A.1 for all business units in ‘Total ICT service industries’, 14.7% of all business units provided products (goods or services) to biotechnology business units or organizations.

Interpretive Notes Tables for Question 31

There are three tables for Question 31. Table 31A.1 is for all business units, Table 31A.2 is for all innovative business units and Table 31A.3 is for all non-innovative business units, in selected service industries.

The tables contain data on the percentage of business units providing products (goods or services) to business units or organizations engaged in nanotechnology.

The following contains an explanation of how to read the tables for Question 31 using Table 31A.1 as an example.

- In Table 31A.1 for all business units in ‘Total ICT service industries’, 5.0% of all business units provided products (goods or services) to nanotechnology business units or organizations.

Interpretive Notes Tables for Question 32

There are three tables for Question 32. Table 32A.1 is for all business units, Table 32A.2 is for all innovative business units and Table 32A.3 is for all non-innovative business units, in selected service industries.

The tables contain data on geomatics activities in general and seven specific geomatics activities during the period 2001 to 2003.

The following contains an explanation of how to read the tables for Question 32 using Table 32A.1 as an example.

- In Table 32A.1 for all business units in ‘Total ICT service industries’, 12.5% of all business carried out geomatics activities. Of these:
 - 6.9% reported carrying out land surveying;
 - 23.4% reported carrying out mapping and cartography;
 - 43.1% reported carrying out geospatial analysis using remote sensing or GIS;
 - 63.8% reported use of customized geospatial software;
 - 57.2% reported carrying out development of customized geospatial software;
 - 58.9% reported carrying out geospatial data management; and
 - 2.4% reported carrying out hydrographic surveying.

Note that these figures do not add up to 100% since business units could indicate that they carried out more than one of the above activities.

Note also that these figures indicate that:

- 0.9% of all business units reported carrying out land surveying (6.9% x 12.5%);
- 2.9% of all business units reported carrying out mapping and cartography (23.4% x 12.5%);
- 5.4% of all business units reported carrying out geospatial analysis using remote sensing or GIS (43.1% x 12.5%);
- 8.0% of all business units reported use of customized geospatial software (63.8% x 12.5%);
- 7.2% of all business units reported carrying out development of customized geospatial software (57.2% x 12.5%);
- 7.4% of all business units reported carrying out geospatial data management (58.9% x 12.5%); and
- 0.3% of all business units reported carrying out hydrographic surveying (2.4% x 12.5%).

Interpretive Notes Tables for Question 33

There are three tables for Question 33. Table 33A.1 is for all business units, Table 33A.2 is for all innovative business units and Table 33A.3 is for all non-innovative business units, in selected service industries.

The tables contain data on government programs sponsored by the federal or provincial/territorial governments during the period 2001 to 2003.

The following contains an explanation of how to read the tables for Question 33 using Table 33A.1 as an example.

- In Table 33A.1 for all business units in ‘Total ICT service industries’, with respect to *research and development (R&D) tax credits*,
 - 35.8% reported that they used federal government programs;
 - 26.6% reported that they used provincial/territorial government programs;
and
 - 62.1% reported that they did not use any government program.

It is possible to have such a breakdown for all other collaborators.

Note the figures do not add up to 100% since a business unit could opt to use both federal and provincial/territorial programs.